



REPORT

OF THE

Indian Economic Enquiry Committee

1925

VOL. I—REPORT

CALCUTTA : GOVERNMENT OF INDIA
CENTRAL PUBLICATION BRANCH
1925

This report will be published on the 1/10/26 day
of 192 . It is particularly requested
that no comments on or references to the subject matter
of the report should be published either in dak or city
editions before that date.

MGIPC--S2--II-1-104--10-8-25--2,000.

INDIAN ECONOMIC ENQUIRY COMMITTEE.

Resolution by the Government of India in the Finance Department, No. 655-F., dated Delhi, the 22nd January 1925, appointing the Committee.

The Government of India have had under consideration the best method of giving effect to the wishes of the Legislature in connection with the institution of a general economic enquiry in India. They have come to the conclusion that before any wider enquiry can usefully be inaugurated, it is necessary to collate and examine the existing material, to ascertain how it can best be supplemented and to determine what lines an economic enquiry into the resources of the country should take. They have accordingly decided, with the approval of the Secretary of State, to appoint immediately a small Committee for the purpose consisting of the following gentlemen who have consented to serve on it :—

Sir M. Visvesvaraya, K.C.I.E., D.Sc., M.I.C.E., *Chairman* ;

Rai Bahadur Pandit Hari Kishan Kaul, C.S.I., C.I.E., *Member* ;
and

Mr. A. R. Burnett-Hurst, B.Sc., Professor, Muir Central College, Allahabad, *Member and Secretary*.

2. The following are the terms of reference to the Committee :—

To examine the material at present available for framing an estimate of the economic condition of the various classes of the people of British India ; to report on its adequacy ; and to make recommendations as to the best manner in which it may be supplemented, and as to the lines on which a general economic survey should be carried out, with an estimate of the expenditure involved in giving effect to such recommendations.

NOTE.

The estimated cost of the Indian Economic Enquiry Committee, including the charges for printing the Report and the Evidence, is Rs. 1,02,483.

CONTENTS.

CHAPTER I.—INTRODUCTORY.

	PAGE.
Origin of the Committee	1
Constitution of Committee and Terms of Reference	2
Preliminary work	2
The Questionnaire and examination of witnesses	2
Work done on tour	3
Acknowledgments	3

✓CHAPTER II.—OBJECT OF AN ECONOMIC SURVEY.

Desire for an enquiry	4
Value of a survey	4
Economic deficiencies	5
Economic problems	6

CHAPTER III.—TESTS OF ECONOMIC CONDITION.

Main heads of enquiry	7
Technique of measurement	7
Production	7
Income	8
Wealth	8
Other tests	9
Uses of estimates of national wealth and income	9

CHAPTER IV EXAMINATION OF MATERIAL AVAILABLE—
STATISTICS—GENERAL.

Data collected in the Dominions and foreign countries	10
Material available in British India	10
Classification of material	11

STATISTICS—GENERAL.

Finance	12
Population	12
Trade	13
Transport and communications	14
Education	15
Vital statistics and migration	15
Improvement of statistics (general)	15

CHAPTER V.—EXAMINATION OF MATERIAL—(CONTD.).
STATISTICS OF PRODUCTION.

	PAGE.
Production	16
Agriculture	16
Suggestions for ascertaining agricultural production	17
Agricultural statistics afford the best basis	18
The cropped area	18
Minor and mixed crops	18
Factors other than area	18
Condition of crops	19
Yield—standard yields	19
Crop experiments	19
Fruit and vegetables	20
Value of produce	21
Periodical census of agricultural production unnecessary	22
Tracts under permanent settlement	22
Pasture and dairy farming	23
Forests	24
Fisheries	25
Minerals	26
Large-scale industries	26
✓Cottage industries	27

CHAPTER VI.—EXAMINATION OF MATERIAL—(CONCLD.).
INCOME, WEALTH, ETC.

Income	28
Distribution of income	29
Wealth	29
Cost of living	29
Indebtedness	30
Wages	31
Other labour statistics	32
Prices	32

CHAPTER VII.—SCHEME OF ECONOMIC SURVEY—GENERAL.

Second part of terms of reference	34
Classification of the population	35
Economic zones	37
Methods of survey—suggestions examined	37
The Committee's proposals	38
Production statistics	38

	PAGE.
Estimates of income, wealth, cost of living, etc.	39
Subjects for intensive study	39
Methods of intensive studies explained	40
Special investigations	41
Extensive surveys for income and wealth	41
Wages and prices	41
Centralization of statistics	41
Legislation	42

CHAPTER VIII.—SCHEME OF ECONOMIC SURVEYS—(CONTD.).
ORGANIZATION.

Central Bureau	44
Provincial Bureaux	45
Advisory Boards—The Publicity Advisory Committee	45
Provincial Boards of Economic Enquiry	46
Assistants to the Provincial Statistician	46
Two distinct agencies in each district	46
Agencies for production statistics	46
Agency in districts—Inspectors	47
Supervision by <i>tahsildars</i>	47
Investigators	48
Intensive study in urban tracts	48
Intensive enquiries in rural tracts	49
Generalisation from results	49
Village help to statistical staff	49
Utilizing the staff of other Government Departments	49
Prices and wages	50
Amalgamation of existing labour offices with the new Provincial Bureaux	50
Suggested amalgamation of the posts of Director of Land Records and Provincial Statistician	50
Publications	51
Periodical review of statistics	51
Propaganda	52
Economic studies by village agency	52
Indian States	53
Early beginning recommended	53

CHAPTER IX.—SCHEME OF ECONOMIC SURVEY—(CONCLD.).
ESTIMATE OF COST.

	PAGE.
Approximate character of estimate	54
Central Bureau of Statistics	54
Provincial Bureau of Statistics	55
Establishment in the Districts—	
Agricultural production	56
Production—pastoral, cottage industries, etc.	56
Intensive enquiries	57
Prices and wages	57
Quinquennial Surveys	57
Training of staff	58
Foreign training for Assistant Statisticians	58
Allowance for stationery and contingencies	59
Recurring provincial expenditure	59
Initial and periodical expenditure (Provincial)	60
Cost of scheme by Provinces	60
Additional cost in traets under permanent settlement	61
Total cost of scheme—British India	61
Distribution of cost	61
Abstract of financial proposals	62
Ultimate transfer of cost to local bodies	62

CHAPTER X.—SUMMARY OF VIEWS AND RECOMMENDATIONS	64
---	----

APPENDICES.

No. 1.—Material usually collected and published in foreign countries regarding the economic condition of the people	69
No. 2.—List of publications on Production, with notes on information contained in each	73
No. 3.—List of selected recent books, monographs, etc., which contain some information as to the income of various classes of people in India	83
No. 4.—List of selected books and other publications on the cost of living of various classes of people in India	84
No. 5.—List of selected recent books, monographs, reports, etc., containing information on the Indebtedness of various classes	85
No. 6.—Note on some publications on Wages	86
No. 7.—Detailed proposals regarding Wage Census and Wage Returns	87

**NOTE OF DISSENT BY PROFESSOR A. R. BURNETT-
HURST.**

	PAGE.
India and the Dominion Standards of Statistics	91
Criteria of Economic Conditions	95
Examination of Available Material	100
Scope and Method of the Economic Survey	100
Organisation and Agency	103
General Observations on the Employment of Statistical Methods ..	107
Summary of Conclusions and Recommendations	109

APPENDICES.

A.—Classification of the Population	112
B.—Difficulties of collecting Family Budgets and Statistics of Income	115
C.—Cost	118

INDIAN ECONOMIC ENQUIRY COMMITTEE.

REPORT.

CHAPTER I.

Introductory.

On the 4th of February 1924, the Council of State passed a Resolution on the subject of an enquiry into the economic condition of the people of British India in the following form :—

“ That this Council recommends to the Governor-General in Council that the Local Governments may be consulted with regard to the desirability of undertaking an inquiry into the general economic conditions of British India and whether they are prepared to support the proposal to appoint a Committee and to co-operate in its labours if appointed.”

Later on, on the 22nd September of the same year, the Legislative Assembly adopted a Resolution on the same subject which read as follows :—

“ This Assembly recommends to the Governor-General in Council that he be pleased immediately to dissolve the present Taxation Inquiry Committee and appoint, instead, a Committee of non-officials and experts, in consultation with the leaders of the parties in the Legislative Assembly, to institute a thorough inquiry into and report on the following matters (with power to them to make an *ad interim* report) :

- (1) The economic condition of the various classes of the people of India ;
- (2) Their income per head ;
- (3) Their capacity to bear the existing burden of taxation (including land revenue) ;
- (4) The general resources of the country ;
- (5) The manner in which the burden of taxation is distributed at present between the different classes of the population ;
- (6) Whether the whole scheme of taxation—Central, Provincial and Local—is equitable, and in accordance with economic principles ; if not, in which respects it is defective ;

- (7) The suitability of alternative sources of taxation without increasing the present level ;
- (8) The machinery required for the imposition, assessment and collection of taxes, old and new ;
- (9) The general financial and economic effects of the proposals."

2. After taking these recommendations into consideration, the Government of India, with the approval of the Secretary of State, announced the appointment of the Indian Economic Enquiry Committee in Finance Department Resolution No. 655-F., dated the 22nd January 1925. The subjects given to us for investigation are embodied in the following terms of reference set out in paragraph 2 of the Resolution:—

" To examine the material at present available for framing an estimate of the economic condition of the various classes of the people of British India ; to report on its adequacy ; and to make recommendations as to the best manner in which it may be supplemented, and as to the lines on which a general economic survey should be carried out, with an estimate of the expenditure involved in giving effect to such recommendations."

3. The Committee assembled in Delhi on 7th February 1925 and proceeded with the preliminary work of recruiting the office and research staff, and collecting the official publications, books and other material required. Arrangements were made simultaneously through the Finance Department of the Government of India to obtain, from the Dominions and certain foreign countries, some selected books and other publications needed for the enquiry. The Committee experienced some difficulty at first in securing the services of trained research assistants, and it was not till the first week of March that the candidates selected were able to enter upon their duties.

4. While the work of collecting and examining the available material was in progress, it was decided to issue a questionnaire and to undertake a tour round the principal provinces with the object, on the one hand, of recording the oral evidence of witnesses residing in those areas, and, on the other, of consulting the representatives of the Local Governments, wherever possible, on the subjects entrusted to us for investigation. The questionnaire, which is printed at the beginning of volume II of this report, was issued in print on 1st April and altogether 622 copies were distributed. Written statements in reply to the questionnaire were furnished by 106 persons, of whom 60 were officials and 46 non-officials. The total number of witnesses who gave oral evidence was 81, of whom 45 were officials and 36 non-officials.

Before proceeding on tour, the Committee met in Delhi several representative members of the Council of State and the Legislative Assembly, who had specialised, or were known to take interest, in economic questions, and conferred with them on various points arising out of the terms of reference. Some eighteen members in all, both European and Indian, attended these conferences.

5. The Committee commenced their tour on the 6th of April 1925 and visited six major provinces as indicated in the following itinerary. The number of witnesses examined orally is noted against each centre.

Name of centre.	Arrival.	Departure.	Number of witnesses examined.
Allahabad	6th April ..	9th April ..	7
Calcutta	10th April ..	17th April ..	17
Rangoon	20th April ..	24th April ..	16
Madras	27th April ..	1st May ..	14
Poona	3rd May ..	7th May ..	17
Bombay	8th May ..	10th May ..	..
Simla	12th May ..	..	10

Witnesses from the Bengal Presidency as well as from Bihar and Orissa and Assam were examined in Calcutta. At Poona, we took the evidence of witnesses from the Bombay Presidency as well as of those from the Central Provinces. During the return journey we halted in Bombay for a couple of days to consult certain leading economists and business men, some of whom had not been previously examined as witnesses. The Punjab witnesses and some experts of the Government of India Departments were examined at Simla on the conclusion of our tour. We had opportunities of conferring with the officers of the Governments of Burma, Bombay and the Punjab in regard to questions of organization and the cost of an economic survey for their respective provinces. It was originally intended to examine the representatives of the Government of the United Provinces in the course of our tour, but as that Government had arranged to move to the hills just before our visit, the officers concerned were unable to meet us at Allahabad. The United Provinces Government, however, kindly suggested that we should pay a visit to Naini Tal for the purpose, but the time at our disposal being limited it was not found possible to comply with the suggestion, and as the officers were unable to meet us at Simla, their opinions were obtained in writing.

6. We are indebted to the Finance Department of the Government of India for various facilities afforded to us and for the supply of a large number of reports and official publications, some of which were obtained from the British Dominions and foreign countries. We desire to express our obligations to the Local Governments for the help and facilities afforded in respect of accommodation and other requirements during our visits to the various centres. The acknowledgments of the Committee are also due to the gentlemen, both officials and non-officials, who, at the expense of much time and labour, favoured us with written memoranda or gave oral evidence in the course of this enquiry.

We regret that on account of fundamental differences of opinion we have not had the benefit of the co-operation of our colleague Mr. A. R. Burnett-Hurst in the preparation of this report. We desire however to place on record our high appreciation of his services as Secretary to the Committee. The office and research staffs have also worked to our entire satisfaction.

CHAPTER II.

Object of an Economic Survey.

7. The object for which this Committee was constituted has sometimes been misunderstood. Although the name of the Committee is associated with the term "Economic Enquiry" we have no concern with any actual investigation into the economic condition of the people. Our task, under the terms of reference, is limited to the framing of a scheme of economic survey after examining the adequacy or otherwise of the material already available. The idea of an economic survey is of foreign origin and of comparatively recent growth in India. The matters to be dealt with in the course of such a survey are partly technical, and the public in this country are unfamiliar with the body of scientific facts which bear upon the issue. It may therefore not be out of place to preface this report with a brief explanation of the meaning and object of, and the processes involved in, an economic survey.

8. The economic condition of the people of this country has been the subject of frequent active controversy and dispute. Although the controversial spirit underlying the discussions has in a mild way extended also to the present enquiry, the evidence given before the committee and the opinions ventilated in the press leave no doubt that the public and a majority of the officials are in sympathy with the objects associated with an economic survey. If there has been any hesitation on the part of some of the witnesses to advocate a survey, it was due either to a mistaken belief that sufficient material already existed to enable remedial measures to be undertaken in regard to the country's economic deficiencies, or it was based on a vague notion that the expenditure which the survey would involve might not bring results of any immediate value. But it has been made abundantly clear in the course of our tour that there is a widespread desire in the country for an economic enquiry.

9. As regards the main purpose and permanent value of an economic survey, we cannot do better than invite attention to the estimation in which investigations falling within the scope of such a survey are held outside India. Speaking of the Empire Statistics Conference which sat in January and February 1921, the *London Times* said :

"In Germany before the war the Statistical Bureaux were ceaselessly employed in working on everything that illuminates the future of the German people ; and in the era which is now opening there can be little doubt that the nation which studies the drift of events as it is revealed by the statistical analysis will be infinitely better equipped to take advantage of its opportunities than another which perhaps trusts only to the methods of empiricism."

A Commission appointed in 1912 to examine and report upon the official statistics of Canada remarked that there had been no general answer to the question: What are the phenomena requiring the scientific measurements supplied by statistics, if Canadian national development is to proceed to the best advantage? It went on to say: "Lack of unity and co-ordination prevents true comparisons between Canada and other countries. The recent growth of international intercourse has rendered such comparisons

more than ever necessary, and they have become indispensable to the national progress of Canada." Again the Official Year Book of the same Dominion for 1922-23 states: "Statistics are not merely a record of what has been, but are for use in planning what shall be; it is the duty of a statistical bureau to assist directly in the day to day problems of administration as well as to provide their theoretic background. One of the most significant of recent developments in administration is the extent to which statistical organization has been increased as a guide to national policy."

Mr. R. H. Coats, the present Dominion Statistician of Canada writes: "Our problems will to a new degree involve our relations with other countries with whose statistical data it is most important that our own should range in scope and quality." The same writer says in another connection: "Organized co-ordinated effort is essential to the progress of the administrative equipment of the country, and the statistics are the corner-stone—the basic organization without which the endeavour to meet new situations will be seriously handicapped." Again Mr. G. H. Knibbs, formerly the Commonwealth Statistician of Australia, in a paper read before the British Royal Statistical Society in January 1920, said: "A Department whose duty it is to keep the Government, publicists, and the economists and the nation generally, informed as to the movement of every important activity in it, and of population facts, is of obvious value if intelligent direction is to be given to national affairs, or an intelligent study of them is to be made possible. To a large extent existing statistics are a side product of various government or other departments produced mainly as a sort of public advertisement of their activity or for departmental use, each acting on its own initiative, the whole unco-ordinated and often without appropriate technical direction."

These observations apply *mutatis mutandis* to the conditions of British India. Surveys in various forms are now a regular feature of the administrative activities of the self-governing Dominions within the Empire, and in India too, the time has arrived when a survey should be regarded as an indispensable preliminary to the formulation of economic policies and the treatment of many of the larger problems that arise in connection with the economic development of the country.

10. Evidence was adduced before us to emphasise the fact that the people's traditions and habits were anti-economic. It is said that they spend their small savings extravagantly on marriages and litigation, or invest them in unproductive hoards or in the shape of jewellery or ornaments. Over 92 per cent. of the population is illiterate. The average expectation of life is extremely low and the death rate high. The average income and the standards of living are both stated to be so inadequate that according to the official publication "India in 1923-24" "a very large proportion of the inhabitants are beset with poverty of a kind which finds no parallel in western lands." It is feared that the progress of productive industries or agricultural methods has not kept pace with the increase of the population or the higher standards of living necessitated by world conditions. An expert witness—an American—told us at Allahabad that the crop yields of the country were about the lowest of any civilized country he knew of. The holdings are in many places minutely subdivided. It is alleged by some that the food supply is insufficient. The losses of cattle due to scarcity and disease are heavy and frequent. The unproductive debt of the peasants of British

India including Burma is estimated by Mr. M. L. Darling, I.C.S., of the Punjab, at Rs. 600 crores. There is a large store of cheap and docile labour and in many parts of the country chronic under-employment is a marked characteristic of every day rural life. Several witnesses have urged that unemployment among the lower middle classes is causing much distress.

Where so many deficiencies exist, who can say that an economic survey comes too early or that it is not called for? The problem before the country is how to provide employment for a growing population and avert poverty and distress. There are defects in the outlook of the people and defects in the economic structure of the country and both these demand comprehensive treatment by the latest and most approved methods.

11. The primary purpose of an economic survey is to collect and compile facts and statistical data relating to the economic condition of the people and it is too well known to need any emphasis that numerous problems concerning the material well-being of the people of British India are to-day awaiting treatment under the guidance best supplied by an economic survey. The results of such a survey should, among other things, lead to the adoption of measures for increasing production and wealth: measures, such as, the industrialization of agriculture, the development of industries and trade, the redistribution of population according to the fertility of the various tracts, increasing the efficiency of labour, and calling in the aid of machinery, science and capital for developing the country's vast resources and organizing its stupendous man power.

CHAPTER III.

Tests of Economic Condition.

12. The term 'economic condition' has a wide significance. It may include purely economic tests, such as, income and cost of living or such factors as trade or transportation which are indirect measures of economic activities ; or it may also embrace socio-economic factors, such as, education, expectation of life, labour conditions, movement of the population, etc. In our questionnaire, a suggestion was thrown out that an enquiry into the economic condition of the people should embrace—*Production, Wages, Income, Cost of Living, Wealth, and Indebtedness.*

At the same time we invited opinions as to whether any additions were necessary. Barring a few who were opposed to an economic enquiry in any shape or form and a few others who suggested the omission of one or more of the tests just mentioned, the witnesses were generally in favour of the enquiries suggested in the questionnaire. Some of them wanted various additions made to the suggested enquiries, but those were outside the scope of our terms of reference.

After giving careful consideration to the opinions received, we have come to the conclusion that apart from such subjects as trade, communications, finance, etc., for which fairly satisfactory statistics are now maintained, an enquiry into the economic condition of the people should fall under two main heads, viz.,

(1) Tests applicable to a province or the country as a whole :

Production, national income and national wealth.

(2) Tests applicable to classes of people or local areas :

Individual income, individual wealth, collective wealth, cost of living, wages and prices, indebtedness, etc.

13. After making allowances for differences in conditions, statistics serve as a technique for measuring the comparative well-being of nations, communities, or social groups as distinguished from households or individuals. "Proposals for progress in modern civilization and solutions of its problems," says Sir Josiah Stamp, "depend to an increasing extent upon the methods of extraction or statistical science as distinct from statistical arithmetic in those fields where precise measurement or enumeration is not possible."

It should be noted that all the goods and services implied in the estimates of production, income or wealth are measured by a price. From a technical point of view, it is only when a price can be fixed that the income or assets of an individual or community become eligible for consideration in the economic regime.

14. Views as to what constitute appropriate data to measure the economic condition of the people differ widely, but it is generally admitted that the production of material utilities in a definite period of time, usually one year, is an important test, for it is production which forms the basis of the sustenance and comfort of the people. Whether for classes, tracts, or provinces or for the country as a whole, the determination of the annual resources which are

made available for consumption either locally or abroad, appears to be of primary importance.

Production means the money value of the goods or articles produced in a year. As thus defined, it forms a part of the year's income. The term 'production' is used in this connection in its popular acceptation, *i.e.*, as including such processes as the growing of crops, extraction of minerals, capture of fish, conversion of water into electrical current, manufacturing, etc.—in economic phrase, the creation of 'form utilities'.* We have not included in the definition of the term 'production' the various activities comprised under transportation, exchange of goods, etc., nor those under other 'service utilities' although both these are, in a strictly economic sense, no less 'productive'. In this report, therefore, production will be interpreted to mean the aggregate money value of the produce, in a year, mainly from agriculture, pasture and dairy farming, forests, fisheries, mining and manufactures.

An idea may be formed of the relation between 'production' regarded as 'form utilities' and 'national income' which includes also 'service utilities' from the fact that a rough estimate of the national income of Canada in 1920 put the relative values of 'production' and 'service utilities' comprising it, at two-thirds and one-third, respectively, in proportion to the total number of persons usefully and gainfully employed in the respective occupations.

15. "The two measures of material well-being" says Mr. G. H. Knibbs, formerly the Commonwealth Statistician of Australia "are income and wealth". The distribution of income and wealth is of special value. Consumption in its relation to saving is also treated as one of the main tests. The meanings attached to these terms differ according to the circumstances of their use and are not always on a uniform basis.

"Income", according to Dr. C. J. Bullock, "is the chief test of the taxpayer's ability". For purposes of taxation, "it is without doubt superior to either consumption or wealth." The term 'income' may be considered either from the point of view of individual income or national income, the term 'national' being interpreted to apply to the country as a whole or to any defined administrative or geographical area. National income is defined as "the aggregate money expression of those goods produced, and services performed, by the inhabitants of the country in a year, which are as a fact, generally exchanged for money".†

Individual income is the share of the price set on our products and services under the different names of wages, house rents, farm rents, interests, or profits, or the sale of production, etc.‡

16. Wealth is the name given to the total stock of goods and services which are in a person's possession as a result of his total accumulations to date. In economic parlance, wealth does not mean great riches only. "To the economist, the poor man's dwelling and the rich man's palace are alike wealth since they satisfy economic wants." The term 'wealth' like income, comes up for

*The Canada Year Book 1922-23, page 216.

†Sir Josiah Stamp's "Wealth and Taxable Capacity", page 40.

‡Gide's Political Economy, page 455.

consideration either from the point of view of national wealth or of private wealth, the former being the aggregate of wealth of the individual citizens of the state as well as the corporate or communal wealth represented by such assets as national railways and municipal water works. The national wealth of a country is "the value of the objects found within its boundaries including the wealth of its inhabitants".* Approximate estimates of the national wealth comprising both public wealth and private wealth are prepared by various methods but chiefly by what is known as the "inventory method".

17. Of the remaining tests one of the most important is cost of living.

Other Tests.

The cost of living is usually ascertained from family budgets or by a house to house canvass.

The cost changes at short intervals with the prices of food, clothing and rent. The percentage of income expended by a family on subsistence is an index of its material prosperity. The difference between income and cost of living represents the saving of the family, or the accumulation of capital or wealth. There is a tendency among modern nations to fix a standard of living to enable a worker and his family to subsist in health and comfort and to expect his employer to pay a wage sufficient to maintain that standard.

Enquiries regarding indebtedness would be necessary in provinces where the peasant population is heavily involved in debt. Other heads of enquiry which readily suggest themselves for Indian conditions are unemployment, under-employment, fragmentation of holdings, etc. As explained already, there will at all times be numerous questions of a local or special character in regard to some phase or other of the economic condition of the people requiring investigation with a view to the adoption of remedial measures.

18. Among the uses to which, according to Sir Josiah Stamp, estimates

of national wealth and income may be put are
 Uses of Estimates of National Wealth and Income. (1) tests of the country's progress by way of comparisons between different years to show the accumulation of capital, (2) tests of the distribution of wealth among the different classes of population, (3) tests of the relative 'prosperity' or resources of different nations or communities either as a whole or per head of the population, and in relation to their national debt, and (4) comparison of income with capital and property.

In the treatment of questions of taxation it will be necessary to prepare estimates of income as well as of private wealth and the distribution of such income and wealth.

Literature relating to the estimates of national wealth and income is readily available in Great Britain and the methods and data for that country are better known and understood than those for other countries. In the United States of America, periodical estimates of the wealth of the country are officially published by the Census Bureau. Taxes are collected in the States mainly on the basis of wealth. Rough estimates of income and wealth are published for Canada, Australia and New Zealand. It is time that a beginning was made to prepare such estimates also for British India.

*Sir Josiah Stamp's "Wealth and Taxable Capacity", page 7.

†Paper read by Sir Josiah Stamp before the Royal Statistical Society in 1919. LeUEEC

CHAPTER IV.

Examination of Material Available.

STATISTICS GENERAL.

19. The first part of the terms of reference in the Government Resolution appointing this Committee asks us "to examine the material at present available for framing an estimate of the economic condition of the various classes of the people of British India, to report on its adequacy and to make recommendations as to the best manner in which it may be supplemented".

20. The adequacy or otherwise of the existing material may be best judged in the light of the statistical data bearing on economic conditions, usually collected in the Dominions and foreign countries. The subject being new to India, we must be guided by international standards in this respect or by standards adopted in countries where the collection of economic statistics has made appreciable advance.

The nature of the statistical information available in the Dominions and foreign countries and the methods of collecting the data in those countries are outlined in Appendix I to this report. We may briefly mention here that statistics of production in all its branches are more or less complete in most of the advanced countries of the west. The income tax and wage statistics which are published in considerable detail give, between them, a fairly good idea of the income of the population. In several cases, estimates of the national or private wealth are also available. Cost of living index numbers are invariably prepared in all the Dominions. No figures of indebtedness of individuals or classes are published, presumably because individual indebtedness is not a prominent characteristic of the population of those countries. Statistics relating to trade, transport, finance, population, and other allied subjects of economic interest are usually very full.

21. The Statistical Abstract for British India and the other publications detailed in Appendices 2 to 5, show that British India. a mass of statistical material is collected in this country on a variety of subjects. Some of these subjects, such as, justice, police and prisons, wild animals, pilgrims, medico-legal investigations, lunatic asylums, merchandise marks, meteorology, and patents and designs, though indirectly affecting the well-being of the people are, strictly speaking, not of economic significance and the material relating to these need not be examined by us.

22. We give below a list of the remaining subjects on which statistics are now collected generally by the departments concerned and published in varying degrees of detail :—

Area, agriculture (tenures, crops, etc.), irrigation, live-stock, forests, fisheries, minerals, number of factories and details of some large scale industries, prices, wages, registration (including land transfer), finance (including income tax, coinage and currency, banks), co-operative societies, joint stock companies, life insurance companies, production of opium and salt, population, trade (foreign and inland), transport and communications (including posts, telegraphs, telephones and shipping), vital statistics and migration, municipalities, district and local boards and education.

23. Besides the general statistics mentioned above, local and special enquiries have been conducted from time to time concerning cottage industries, indebtedness, fragmentation of holdings, family budgets, general condition of villages, milk supply of certain towns, conditions of labour including housing, cost of living, etc., mostly by private individuals and occasionally also by official agencies. Many University Professors of Economics have carried out intensive studies of villages with the help of their college students. Such studies are being taken up in increasing numbers by Professors of Economics in most Universities and Colleges which have faculties or courses in Economics. Some non-official societies, such as the Chanakya Society of Patna, have taken it upon themselves to collect and publish family budgets; and private individuals, of whom Mrs. Caleb is a notable example, have interested themselves in the family budgets of particular classes. The Bombay Labour Office has collected useful information regarding the condition of the labour classes and the departments of Co-operative Cr dit are devoting their attention to the investigation of problems relating to agricultural classes, such as, indebtedness, fragmentation of holdings, etc. A Board of Economic Enquiry has been established in the Punjab, divided into rural and urban sections. The rural section particularly is having investigations made by paid investigators in villages under the supervision of the Registrar, Co-operative Credit Societies. A great deal of information is contained in the reports prepared by settlement officers and particularly in the settlement reports of Burma which are a mine of information relating to the economic condition of the people.

24. A mass impression of the general economic condition of the people of British India is derived principally from the reports of the decennial population censuses and the statistics annually published by the Government of India in varying degrees of completeness. It is from these reports that British and foreign experts have made shrewd guesses at the income and wealth of the people of this country. The production statistics are decidedly incomplete, but some details are available which have enabled an idea, howsoever rough, to be formed of the *per capita* production. The external trade statistics are very complete and give a clear conception of the balance of trade from year to year. The statistics of communications indicate the extent of transport facilities available for the business of the country and the budget gives the magnitude of the financial operations of the Government. The education, population, and vital statistics give glimpses into other phases of the economic life of the people.

25. For the purpose of determining in what respects the statistical Classification of data available are deficient from an economic point Material. of view, the subject may be considered under the following three main classes :—

I.—General Statistics other than production, comprising :—
Finance, Population, Trade, Transport and Communications, Education, Vital Statistics and Migration.

II.—Statistics of production, including :—*Agriculture, Pasture and Dairy Farming, Forests, Fisheries, Minerals, Large Scale Industries, Cottage and Small Scale Industries.*

III.—Estimates of Income, Wealth, etc. :—*Income, Wealth, Cost of Living, Indebtedness, Wages and Prices.*

The statistics falling under class I are more or less complete ; those under class II are satisfactory in some respects but incomplete or totally wanting in others ; while as regards estimates of income, wealth, etc., class III, no satisfactory attempt has been made in British India to collect the necessary material on a comprehensive scale.

The condition of general statistics under class I will be commented upon in the remaining portion of this chapter and the subjects coming under classes II and III in the two subsequent chapters. We shall, in dealing with each subject, suggest how the existing material may be supplemented, where it is incomplete or defective, or how the required information may be collected where none is available at present.

STATISTICS GENERAL.

26. Besides the Budgets and Financial statements of the Central and Provincial Governments, there are special departmental publications, in each province, relating to Finance. the administration of land revenue, salt, customs, income tax, excise, stamps, registration, forests and opium, the last in the United Provinces and Bihar and Orissa only. These publications give sufficient indication of the financial aspects of the administration, including public debt. Detailed information is available in the civil and army estimates, in the departmental estimates, and in the "Finance and Revenue Accounts", published by the Auditor General. Regarding currency and coinage, the annual "Report on the Operation of the Currency Department" and "The Report on the Administration of Mints" give the imports and exports of gold and silver, amount coined, old coins received for recoinage, number and value of currency notes of each denomination in circulation, composition of the paper currency reserves, securities created, notes held in Government treasuries, etc.

Information about local finance can be had from the financial statements of municipalities and local boards, summarized statements whereof are given in the "Statistical Abstract" already referred to.

Other information relating to public or private finance is given in the "Statistics relating to Banks in India" and "Reports of the Co-operative Societies". Statistics relating to Post Office Savings Banks will be found in the "Report of the Posts and Telegraphs Department", those relating to the paid-up capital of companies are given in the "Report of Joint Stock Companies", and those pertaining to life insurance companies appear in the "Statistical Abstract". We think the report of Joint Stock Companies should contain information regarding the dividends declared. The figures are published from time to time in the Calcutta Weekly Journals, the "Capital" and the "Commerce". We are also of opinion that statistics relating to insurance companies, for purposes other than life insurance, should be included in the Statistical Abstract.

27. The statistical publications relating to the decennial censuses of Population. population in India leave little to be desired. Statistics relating to territorial distribution, migration, age, sex, civil condition, caste, tribe or race, religion, language, occupation, literacy and infirmities, are discussed in great detail ; and at the last census, a chapter on the economic condition of the people was added to the Census Reports for Bombay, Assam and Baluchistan in the shape of an analysis of family budgets. An industrial census was held

in 1911 and again in 1921 along with the population census, in the course of which the number of factories of each kind and the number of operatives employed were recorded. The economic value of the statistics of population and of the indications they give of the various aspects of the social life of the people is very considerable. The growth, decline and movement of the population, the variation in occupational distribution, the increase of literacy, the distribution of the population in life periods and the duration of life are all phenomena which demonstrate the material and physical progress of the people ; while statistics relating to sex, civil condition, language and religion afford tests of other phases of their economic welfare.

28. The statistics relating to foreign trade are exceptionally good.

Trade—Foreign, Sea-borne. Information as to the sea-borne trade is available in the annual "Statement of the Sea-borne Trade and Navigation of India", and in the monthly and annual "Accounts relating to the Sea-borne Trade and Navigation of India". These publications give the quantity and value of every article (including treasure and Government stores) exported, imported and re-exported, specifying the details of trade with each country. All the maritime provinces (except Bihar and Orissa) have their separate annual reports.

29. Just as the maritime provinces have their separate sea-borne trade reports, so have the provinces adjoining the land

Overland. frontier (*viz.*, Sind and British Baluchistan, the North-West Frontier Province, the Punjab, the United Provinces, Bihar and Orissa, Bengal, Assam and Burma), their annual reports relating to the external land trade. There is also an all-India monthly publication called "Accounts relating to the Trade by land of British India". The annual "Review of the Trade of India" gives in a very lucid and concise manner all the necessary information relating to the country's foreign trade, including the export and import prices. So far as external land trade is concerned, our information is that the arrangements for the collection of primary data are defective, but we understand that steps are being taken to record land frontier statistics more correctly from the next year.

30. We find that one of the effects of the recommendations of the

Internal Trade, Rail and River borne. Incheape Committee has been to discontinue, almost entirely, the collection of figures of internal trade. Before the retrenchment, the Department of Statistics used to publish annually the "Inland Trade (Rail and River borne) of India" and all the provinces used to issue similar publications. These gave the import and export trade in staple articles of each of the five or six blocks into which every province was divided ; and the imports and exports of eighteen bigger blocks forming the trade divisions of India as a whole. The figures related to quantity only ; the figures of value, given in a few cases, were admittedly very rough. Even these publications have now been discontinued, except in one or two provinces. But the internal trade statistics lose the greater part of their usefulness, if they are not collected in every province.

The internal trade returns, when they were being issued, were by no means satisfactory. The trade within a block was not recorded, there was obvious evasion on railways, and trade by road, which is not negligible, was not taken into account. Nevertheless the discontinuance of the

publication has removed a very important check on provincial figures of production.

We think the publication of internal trade returns should be revived and brought into line with the more up-to-date statistics of countries like the United States of America.

31. The publication relating to the annual "Coasting Trade and Navigation of India", which used to give the quantity and value of imports into, and exports from, the ports of British India and the Indian States, and the shipping engaged in such trade, has also been discontinued, as a measure of retrenchment. The gaps caused are, however, not serious, because the necessary information will, we understand, be published either in the monthly "Sea-borne Trade Accounts" or in the annual "Review of Trade".

32. The statistics included under the head "Transport and Communications" may be divided into (a) railways, (b) shipping, (c) other transport, (d) roads and navigable canals, and (e) posts, telegraphs and telephones.

33. The report entitled "The Railways in India", issued annually in two volumes by the Railway Board, is a comprehensive publication. The second volume dealing with statistics gives detailed and complete information, in relation to every railway system, about mileage open for traffic, capital outlay, gross earnings, working expenses and net earnings, staff, accidents, rolling stock, passenger and goods traffic and earnings therefrom; total mileage covered by passenger, mixed and goods trains, and other figures. In view of the fact that the inland trade publications have been discontinued, the information published in this volume, relating to the quantity of the principal commodities carried, differentiating between quantities booked on the railway system or on foreign railways is of some use.

The statistics which were criticized by the Retrenchment Committee as not being compiled on a standard basis have since been improved by the Railway Board.

34. There is no separate publication in India on shipping, but the sea-borne trade statistics mentioned above contain detailed information about the number and tonnage of steam and sailing vessels, which enter into and clear from the different ports of British India during the year, their nationalities and the countries of origin and destination. Information regarding the total shipping of each port and the number and tonnage of vessels built or registered in India is also available.

The number and tonnage of vessels (distinguished by nationalities) engaged in the coasting trade of India used to be given in the publication known as "Coasting Trade and Navigation of India"; but this publication, as already explained, has been discontinued. The figures will, however, be included hereafter in the monthly "Sea-borne Trade and Navigation Accounts". We think that figures as to the crew employed, especially on ships plying in coastal waters, should also be published.

35. A census of carts is taken along with the cattle census. But no information is available about other vehicles particularly motor transport or boats. Complete figures of motor and all other forms of transport including boats should, we think, be collected and published.

36. The reports of the Public Works Department (including the Roads and Navigable Canals. Irrigation Branch) of the various provinces give figures of the length of metalled and un-metalled roads maintained by that department and by the local authorities, and in most cases also of navigable canals. The information is however not put together for the whole of India. This, we suggest, may be done in future.

37. The Annual Reports of the Posts and Telegraphs Department give Posts, Telegraphs and Telephones. the usual information about the number of letters, parcels, etc., carried from one postal circle to another, money order, value payable parcel and savings bank statistics, length of telegraph lines, number of words and messages transmitted, and the revenue and expenditure of the department. Some statistics about telephone companies and telephone lines and the Indo-European Telegraph Company are also available in the Statistical Abstract. The only suggestion we have to make in this connection is that figures relating to wireless messages and broadcasting stations might also be published.

38. The annual reports of the provincial education departments Education. contain very detailed information on all aspects of primary, secondary, high school, college, and university education. A summarized statement is given in the Statistical Abstract.

While on this subject, it may also be mentioned that the number of printing presses and of newspapers, periodicals and books published is noted in the Statistical Abstract. These statistics seem to be fairly complete. We think that information relating to libraries, museums, zoological and botanical gardens and learned societies might also be collected and published.

39. Detailed figures relating to vital statistics, vaccination and deaths Vital Statistics and Migration. and from and destruction of wild animals are available in the Statistical Abstract, in the annual "Report of the Public Health Commissioner with the Government of India", in the reports of the Provincial Directors of Public Health or Sanitary Commissioners and in the Provincial Reports on Hospitals, Asylums, etc. The vital statistics are complete enough but the agency for reporting them is said to be unreliable. The omission to report births and deaths was noticed in the Census Report of 1921. The inefficiency of the reporting agency has also been brought to our notice by some of the witnesses who appeared before us. We have no doubt that steps are being taken to improve the agency.

Statistics of emigration are also published in the Statistical Abstract.

40. The co-ordination, improvement and extension of general statistics Improvement of Statistics General. falling under class I is a matter which our opportunities do not permit us to explore at length. We will only say that these statistics have not been hitherto compiled with a view to their being utilized for shaping the economic policies of the country. In other respects, they appear satisfactory as far as they go. Further improvements to bring them into line with up-to-date statistical systems abroad might be effected with the aid of a committee or conference of statistical experts. The improvement in the direction of centralization of statistics suggested later, in Chapter VII, will apply equally to statistics general, under our class I.

CHAPTER V.

Examination of Material—*contd.*

STATISTICS OF PRODUCTION.

41. The publications dealing with production are detailed in Appendix
 Production. 2. Estimates of the production of the country have been prepared by non-official experts, but no attempt has been made to bring together officially statistics relating to various kinds of production, incomplete as they are. We consider that complete statistics of production, including the total value of production, should be collected, if it is possible to do so at a reasonable cost. Among others, Professor E. A. Horne of Patna pointedly drew our attention to the necessity of having complete statistics of production. Estimates of the total agricultural production and of the surplus of food crops, ordinarily available for storage and export, etc., have been made from time to time. The first estimates of the kind are contained in the Report of the Famine Commission of 1880. The estimates were prepared in a rough and ready manner, by applying such standards of yield as were available, to the figures of cultivated area for the Ryotwari tracts. In the Zemindari tracts estimates were prepared on the basis of the returns of total area recorded in 1878, it being assumed that the proportion of cultivation to total area in these tracts was the same as in the remaining tracts. The production was valued at an all round rate of Rs. 50 per ton for food crops and Rs. 30 per acre for non-food crops. Similar estimates were again prepared by the Famine Commission of 1898 and the valuation was made at the same average rates. The estimates were further scrutinized by the Department of Revenue and Agriculture in 1900, in view of the fact that they left much to be desired in accuracy and completeness. In pursuance of the suggestions then made a further enquiry was undertaken by provinces in 1902, but although the estimates of production were prepared by districts and some improvements were made, the material, on which they were based, still remained very imperfect. A similar estimate was prepared in 1911-14. It goes without saying that although the estimates so prepared were of great use in furnishing Government with data which enabled them to take action for the purpose of combating famines, they were very far from representing the actual value of the agricultural production of the country.

42. The statistical information on agriculture in India is contained
 Agriculture. in the "Agricultural Statistics of India—Vol. I", the provincial "Season and Crop reports", the "Estimates of the Area and Yield of the Principal Crops" and the periodical settlement reports. The provinces of Bengal, Bihar and Orissa and the Central Provinces also have a minor publication called the "Agricultural Statistics" of the province. These publications give the usual details about the total area, cultivated area, area under various crops, area irrigated from various sources, area under forests, waste area, normal yields, estimated total yield in the case of the principal crops, rainfall, live-stock, ploughs, carts, etc. The value of crops is not always worked out but the harvest prices in each district are given. The incidence of land revenue on the area (fully assessed) and on population in each district is also noted.

Some of the special reports in the provinces (*e.g.*, in Bombay, Madras, the Central Provinces, the Punjab, and the United Provinces) give the value of produce of certain specified crops besides certain other information such as cost of cultivation, price of land, etc.

Useful data are collected during settlement operations, as to the value of agricultural production and other allied subjects like cost of cultivation, agricultural indebtedness, price of land, cost of living of agriculturists, temperature, rainfall, rent, holdings and tenures. Special reports on the consumption and various aspects of production of tea, coffee and rubber are published for the whole country as supplements to the "Indian Trade Journal". A provincial report on the outturn of tea is also published in Assam.

In connection with agriculture may be mentioned the canal irrigation statistics, which give detailed information about irrigation works, expenditure thereon, the area irrigated and the quantity and value of crops raised on lands irrigated from each canal system.

In spite of their bulk, the agricultural statistics published at present do not provide material for deducing either the quantity or value of the total agricultural production. While the total yield is estimated in respect of the principal crops, not even the area is given separately for minor and mixed crops. The value is worked out only for certain crops in some of the provinces, while in Madras and Bombay complete estimates of the value of agricultural production for a year have been prepared, through the enterprise of individual officers. Some witnesses consider the record of area to be unreliable; others hold that the yield has no reliable basis. In tracts under permanent settlement the estimates of area and yield are prepared from reports made by ignorant and low-paid police *choukidars*. The wholesale prices at which the value of agricultural outturn is calculated are considered in certain provinces to be untrustworthy. There can be no denying the fact that from the point of view of economic data, the agricultural statistics are defective. We shall discuss the various factors separately in dealing with proposals for their improvement.

Agricultural production is of prime importance in a country which is mainly agricultural. In the Dominions, agricultural production is ascertained by issuing schedules to farmers who return them duly filled. In the United Kingdom, estimators are employed who collect the information from farmers and check it by figures of export from each centre. This is done at the periodical censuses of production. The methods of ascertaining agricultural production employed in the more advanced countries are, however, unsuitable for India. The cultivators being generally illiterate, a great majority of them cannot be expected to fill up schedules. They are also suspicious by nature and unwilling by tradition to disclose their outturn.

43. Suggestions have been made in places that the actual production

Suggestions for ascer- should be obtained through the agency of crop
taining Agricultural Pro- estimators or by issuing forms to be filled up by
duction. headmen of villages in respect of every holding
in each village. Neither of the methods appears to be a practical one.
In the former case the estimators would have to go round every field and
see the outturn weighed, for the cultivator keeps no record of his outturn.
The cost of having estimators who could visit each village at harvest time,
and record the actual outturn of every field will be absolutely prohibitive.

Such procedure will moreover be greatly vexatious. The figures obtained from the village headmen would be far less reliable than those based upon the standard yields.

During the course of evidence we have heard comments on the inefficiency of the subordinate revenue agency and its want of capacity on the one hand and absence of interest on the other to collect any statistical information bearing on economic matters. This impression, however, seems to us to be due to lack of opportunity to study the work of the village accountant at close quarters. The officers who have been in daily touch with these officials and non-officials, who have had occasion to study their work, have been equally strong in impressing upon us the fact that in local knowledge of economic conditions in particular, and in elementary statistical work in general, the village accountant is hard to beat. The Director of Agriculture of one of the provinces went so far as to say : " He is a trained hand and his figures are usually more reliable than would be my own ". Irrespective of this, we think it would be most uneconomical to discard the widespread existing machinery and to introduce a new rival organization.

44. The best way to obtain complete information for agricultural production, therefore, seems to be by improving and amplifying the existing agricultural statistics. Agricultural Statistics afford the best basis. It goes without saying that, where a subordinate revenue agency exists, no other agency can be usefully substituted for it.

45. With the exception of the tracts under permanent settlement in the provinces of Bengal, Bihar and Orissa, Assam and also in parts of Madras and the United Provinces, which will be dealt with separately, the figures of area under crops are, in the opinion of revenue officers and others who are best able to judge, ' remarkably good ', and are we may safely say as perfect as they can be made. All that is needed is to improve the statistics of yield where necessary and to convert the quantities into values.

46. It is true that only the area under the main crops is published separately at present in most provinces and that Minor and Mixed Crops. the minor crops are lumped together. But the crop grown on every piece of land, howsoever small, is noted at the time of crop inspection and it is therefore not difficult to amplify the returns so as to include therein the area under every minor crop separately. The difficulty of valuing the outturn of mixed crops has also been brought to our notice, but it should not be difficult to estimate and record separately the area under each of the crops sown collectively in a field, or, where it is considered preferable to arrive at the outturn and value thereof, as a mixed crop *per se*. The area under such crops is at present apportioned at the provincial headquarters, to each of the constituent crops according to formulæ arrived at by each provincial Government.

47. There are other factors besides area which have to be considered before an estimate of the value of agricultural produce can be arrived at, on the basis of the returns of area under crops, *viz.*,

- (1) the condition of crops,
- (2) the yield, and
- (3) the prices.

48. The estimate of the condition of crops is intended to show whether the yield to be assumed is above or below the standards fixed and, in either case, in what proportion. In most provinces, the estimate of the condition of crops is arrived at on the basis of what is known as the *annawari* estimate, prepared by the village accountant, as a result of his inspection of each field. From the figures given by him, an arithmetical average is struck for the *tahsil* or *taluk*, the district and finally the province. This method is almost universally condemned as leading to fallacious conclusions. The system in vogue in the Punjab, which seems to be as good as any, can be further improved. The *tahsildar* should as a result of his personal observation during his crop inspection tour, and after consulting the inspectors (*kanungos*), a number of village accountants and also some reliable zemindars, report for each assessment or revenue circle, by how much the standard yield should be raised or lowered in respect of each crop on each class of soil, in order to arrive at the average yield for the particular harvest. These figures should be checked and, if necessary, corrected by the Revenue Assistant (Deputy Collector) and the Collector and then by the Director of Agriculture. The figures as finally corrected should be communicated to the *tahsildar*.

49. The standard yield is, it may be stated, based mainly upon the results of crop experiments. The objection sometimes taken is that the crop experiments made in any one year are not numerous enough and that the inferences drawn from them are fallacious. The standard yields are, however, not based on the results of one year's experiments. Where the system has been in force for several decades, the data have gone on multiplying and the standard yield of each crop has been built up, on a very large number of experiments, including those made during the settlement operations in each district under close supervision. These standard yields are modified, where necessary, every five years, with reference to the results of the experiments made during that period; and they have also been corrected in some places with the aid of information received from other sources. We were told in Bombay that the yields on the basis of which the Agricultural Department now works out its estimates of outturn are quite reliable. A Punjab official witness has told us that the estimates of yield in his province, though they cannot be called accurate, are better than in most countries. Dr. Gilbert Slater has stated* that "The Madras agricultural statistics have attained a high degree of perfection". Dr. Harold H. Mann, Director of Agriculture, Bombay, told the Committee: "We are better than the United States of America as regards statistics of area and better than Australia as regards values but we cannot say within 25 or 30 per cent. what was the absolute production". It may be noted here that in the Presidencies of Madras and Bombay, the value of agricultural production has been worked out by districts.

50. The crop experiments are, however, confined generally to the principal crops. In Bombay, a series of crop experiments on all minor crops appear to have been made several years ago, and the agricultural authorities consider that the results then arrived at are quite good enough for their purpose. In

*Dr. Gilbert Slater, "Some South Indian Villages, page 230.

other provinces also, it should not be difficult to arrange to have crop experiments made on minor crops.

During settlement operations, the settlement officer has crop experiments conducted on every class of soil in each assessment circle and has the outturn of every crop estimated. This is necessary for calculating the value of all crops with a view to determining the net (*i.e.*, assessable) assets of the landlord. The revenue authorities in each province can take advantage of the yields ascertained during settlement operations and at once add the yield of minor crops to their statement of standard yields. Enquiries from reliable landlords or cultivators would also help in arriving at correct estimates. The account given above reflects the procedure adopted in the Punjab. Conditions may be different in other provinces, but we believe it will be possible to adopt similar measures in them with necessary modifications.

The number of crop experiments should be considerably increased and they should cover the minor crops as well. Crop experiments should be conducted mainly by the agricultural department, but the revenue officers should also continue to make a certain number of experiments every year, even though a district is not under settlement. The work should be closely supervised by the higher revenue officers. When the number of crop experiments has been largely increased, the results can be used for checking the reports of *tahsildars* on the condition of crops. Mr. Hubback, Commissioner, Bhagalpur Division in Bihar and Orissa, is trying an interesting system of crop experiments on rice by means of a wooden equilateral triangle covering an area of $1/3200$ of an acre. He expects, with an expenditure of Rs. 20,000 to Rs. 30,000 a year, to be able to take some 1,500 samples in each sub-division. The system is not applicable to such crops as sugarcane or cotton, but may work well in the case of wheat. If successful, this new system may provide a convenient means of obtaining results of extensive crop experiments on some of the more important crops. It is for each Provincial Government to decide what methods its officers should adopt for increasing the number of crop experiments performed from year to year.

51. Stress has been laid by some witnesses on the difficulties of ascertaining the value of fruit and vegetable production. But it is quite easy for the district officer to ascertain what an acre of vegetables grown in the suburbs of towns and cities usually yields. Enquiries into a few individual cases will provide a reliable formula to be applied to the total area under vegetables in each village. In the rural tracts, vegetables have little value and are not grown on any extensive scale. The local revenue officer can assign a cash value per acre to the vegetables grown in each assessment circle and *tahsil*.

The production of fruit is usually ascertained at settlement. In any case, there should be no difficulty in finding out how much each fruit-garden was sold for during the year. This information can be ascertained by the village accountant.

In case of such fruit trees as date palm and jack fruit which grow largely outside gardens, the average production per tree can be easily ascertained. Indeed such averages have been worked out at all events in

the Punjab. In rural areas there should be no insuperable difficulty in ascertaining the production of scattered fruit trees. Fruit trees lying within the area of towns and cities, except those in gardens, may be excluded from agricultural production.

52. The conversion of total outturn into value is a mere arithmetical process. With a view to arrive at as accurate an estimate of the yield as possible, calculations should, we think, be made separately for each village. The process should be as follows :—

As soon as the condition of crops of a harvest has been determined for each *tahsil* and the crop abstracts containing the area under each crop have come in, the office *kanungo* for each *tahsil*, or by whatever name the official responsible for the compilation of the agricultural statistics in each *tahsil* is called, should take in hand the preparation of a statement of the value of agricultural production of each village in each of the assessment or revenue circles, in the attached form :—

Assessment Circle.	Village.	Class of soil.	Name of Crops.	Area under matured crops (less quantity used as fodder).	Yield per acre.	Out-turn.	Price per maund	Value.

It will be necessary to give the office *kanungo* the assistance of a clerk for this work. A selected village accountant should be able to do the work efficiently. It will take him a month or six weeks at the end of each harvest to do the compilation of the statistics of agricultural production. For the rest of the time he will be occupied in dealing with statistics of pastoral production and in sending copies to village accountants.

In the Punjab, it is believed that about two-thirds of the produce is either sold within three months of harvesting or consumed locally. The outturn should be evaluated at the average wholesale prices for the year prevailing at the market town in or near the assessment circle, or partly at the rates for the quarter immediately following harvesting operations and partly at the average for the remaining quarters of the year according to the proportion which may be fixed for each province with reference to local conditions.

The clerk should send an abstract giving the totals, by assessment circles, to the district office and, at his leisure, forward a copy relating to each village to the village accountant concerned, for being entered in the village note book and for publication in the village.

In the district office, the entries in the abstracts should be checked and the figures for all the *tahsils* added together. The totals for the district should then be forwarded to the Provincial Statistical Bureau. The statistics for districts will be published in the provincial statistical compilation along with the provincial totals. The figures for assessment circles and *tahsils* will be retained in the district while the record of production of villages will be kept in *tahsils*.

53. It has been suggested that a detailed census of agricultural production might be taken periodically. Agricultural statistics are however already collected and published in sufficient detail and, when supplemented by the value of production they will supply all the information which a periodical detailed census is designed to secure. We, therefore, consider a periodical census of agricultural production unnecessary. A review of agricultural production might however be made quinquennially on the basis of the annual returns.

54. In Bengal, Bihar and Orissa, about one-third of Madras, and in Tracts under permanent settlement. parts of the United Provinces and Assam, where the land is under permanent settlement, the collection of figures of agricultural production presents great difficulties. The information regarding the area under crops and the outturn is, so far as we have been able to ascertain, collected by the village policeman and supplied by him to the Collector through the police department. The Collector, we are told, alters the figures reported to him in the light of his own experience, and then forwards them to the Director of Agriculture, who makes as good a guess of the total figures as is possible under the circumstances. No witness has been able to suggest any method by which sufficiently reliable figures can be obtained. It was proposed by one witness that Government should enlist the assistance of zemindars, and estimate the outturn on the basis of the share of the produce received by them, but it is by no means certain that every zemindar will be prepared to show his books, or to supply the necessary information. Some witnesses have suggested that the assistance of local Unions may be obtained but a Union does not exist in every village, nor is it certain that the Unions will be able to obtain correct information from persons who are not connected with them. Another witness thought that a number of temporary surveyors should be appointed in one year to ascertain as approximately as possible the area under various crops in each *panchayat* circle, that the variation might be guessed in subsequent years and that the survey should be repeated every 15 years. In spite of the enormous cost of such a survey, the proposal would provide only approximate figures and in the following 14 years the estimates though, perhaps, somewhat better than the present ones, would be pure guess work. Yet another suggestion is to utilize the agency of *panchayats* for the purpose of reporting outturn of crops as is done in the case of jute crop forecasts. This procedure would also have a considerable element of uncertainty. A combination of these and other methods may, however, secure the desired result. The triangle system of crop experiments by Mr. Hubback, already referred to, may prove useful in estimating the outturn of rice which is an important crop in the provinces concerned and some other food crops, *e.g.*, wheat. We think that it is absolutely necessary to obtain reliable data regarding the agricultural production of these zemindari tracts.

We understand that the districts under permanent settlement are being gradually measured so that survey maps are becoming available for most of the districts and can be utilized if an agency were employed for the inspection of crops at each harvest. We also understand that, while there is no subordinate agency in these provinces for the inspection of crops, the superior revenue agency is more or less the same as in other provinces, so that the appointment of a subordinate revenue agency would not necessitate any addition to the superior revenue staff.

The ideal course would be to employ a subordinate revenue agency consisting of estimators (of the type of village accountants) and inspectors (who would correspond to *kanungos*). But the cost of such an agency would be prohibitive. As we were not able to confer with the representatives of the Governments of any of these provinces, we regret we are not in a position to offer any definite suggestions. We understand that steps have been taken by some of the Governments concerned to improve their crop forecasts and estimates of agricultural production. All we can say is that such improvements should be persisted in till the statistics of agricultural production are placed on a par with those of Ryotwari provinces as regards reliability of the outturn and values of the crops raised.

55. The statistics of pastoral and dairy farm production are altogether wanting. The only data available are those contained in the reports of censuses of cattle and other live-stock, which are taken quinquennially in most of the provinces, but annually in Burma and the Central Provinces, and are said to be sufficiently accurate. Some provinces give the prices of certain breeds of cattle in their provincial reports, but that affords no indication of the value of the annual production of cattle. The yield of milk has been estimated in special studies on milk supply in Bombay, Lahore, Mandalay and some other towns and villages.

The pastoral products consist of :—

1. Additions to cattle, sheep, goats, pigs, etc.,
2. Meat, tallow, sinews, hides and skins,
3. Bones, horns, hoofs, etc.,
4. Wool,
5. Bacon and ham,
6. Poultry and eggs,
7. Honey, bees-wax,
8. Game of all kinds.

Under dairy farming may be treated milk, butter, curd, *ghi* and cheese.

The cattle census takes stock of the number of cattle, sheep and goats. We think this census should, if possible, be held annually everywhere as in Burma and the Central Provinces and should also embrace pigs and poultry and distinguish between milch and dry cows and buffaloes and between bullocks used for ploughing and those engaged in transport. It would provide statistics regarding annual increase in the number of cattle, goats, sheep, pigs and poultry. The amount of meat consumed in towns can be ascertained from the slaughter houses, so also can the amount of by-products disposed of, and the number of hides and skins produced. The production of these articles in villages can be ascertained through the revenue agency. If, however, there is any difficulty in ascertaining the production, the quantity and value of the different products arising out of slaughter of animals can be roughly estimated by applying formulæ, which may be different for different areas, to the number of the live-stock enumerated in each area. As suggested by the late Mr. Sedgwick, the talented Director of the Labour Office of Bombay, whose untimely death we greatly deplore, such formulæ can be worked out by the Agricultural Department with the assistance of the Veterinary Department. Statistics

of the production of bones may be obtained from the returns of the railways and bone factories, while those of horns and hoofs may be ascertained, along with the production of cottage industries, from industrial works which utilize these as their raw material. Horns and hoofs which are neither sold with bones, nor used in these cottage industries are of no value.

The extent of bacon and ham curing and the amount of lard produced can be ascertained from the curing establishments. The statistics of production of honey and bees-wax should be obtained by the Forest Department. The production of game can be ascertained by making enquiries as to the catch of professional *shikaris* and the figures can be checked by the supply of game coming into towns. Game killed by sportsmen may be ignored. The production of butter, cream and cheese can be ascertained from dairies and dairy farms. Cream is not produced in rural areas and cheese is seldom manufactured. The consumption of butter is rare in rural tracts, it is almost invariably converted into *ghi*. The difference between the value of milk and curd (*dahi*) is not very considerable and the added value will be negligible. Moreover, the proportion of milk converted into *dahi* but not reconverted into *ghi*, is, in many places, insignificant. We, therefore, think that the production of *dahi* need not be estimated separately, but may be included in the production of milk. The quantity of milk, *ghi* and eggs produced should be ascertained every year by a special agency acting under the Revenue Department.

It has been suggested to us that *cowdung* cakes form an important industry. The milkmen living in and about the cities and towns no doubt manufacture *cowdung* cakes and sell them in the towns as fuel, but they usually form an insignificant proportion of the fuel consumed in urban areas. In rural tracts the cultivators use a certain amount of *cowdung* for making fuel cakes as they are supposed to be useful in providing slow and constant heat for thickening milk. But we have been told also by witnesses—a fact too well known,—that the *cowdung* so used would be infinitely more valuable if utilized as manure. Instead, therefore, of adding to the value of *cowdung*, which as manure, must be taken as part of the cost of agricultural production, its conversion into cakes involves a deterioration in value. In villages, where there are no trees and other fuel is not available, more *cowdung* is used as fuel, to the detriment of agriculture. We, therefore, think that the manufacture of *cowdung* cakes in agricultural villages should be neglected altogether. Stock may, however, be taken of the value added to *cowdung* by conversion into fuel cakes in and about cities and towns, where they are sold for profit or in non-agricultural villages. Other minor pastoral products, such as feathers of birds, can easily be ascertained for a whole province from inland trade figures or for British India as a whole from external trade returns.

56. The annual "Statistics relating to Forest Administration in British India" along with the quinquennial review, and the provincial reports of the Forest Department, give figures of the area under different kinds of Government forests, and the quantity and value of the outturn of timber, fuel, and minor forest produce.

We have been told by the Inspector-General of Forests that statistics of forest production are complete in respect of produce of all kinds, including minor products. The free gifts and sales at concession rates to right-

holders are also valued in full ; and the supplies of fuel received by villagers from unclassified forests are valued on the basis of their annual requirements. In Burma, where forests are very extensive and where, according to the Inspector-General of Forests, administration is still in its early stages, the minor forest products and the supply of timber to the villages adjoining the unclassified forests are apparently not valued at present. He is, however, of opinion that the methods employed in other provinces of British India can be applied equally well to the Province of Burma. The mere fact of the extensiveness of forest areas does not necessarily make the determination of the value of easements derived from them impossible. After all villagers depending upon unclassified forests cannot sell any of the produce in the market. They can take timber, fuel, etc., only for their local requirements, which are limited and can be accurately estimated by the forest officers who are constantly visiting such villages. A question has also been raised as to whether the forest produce should be valued at the price or royalty recovered by Government or at its market value. Other witnesses have made it clear that the value of forest produce is that on the spot and that it must be measured in terms of what Government actually realize for it, or, where timber is extracted by Government agency, the net saving to Government after defraying all expenses of extraction. The increase in the value of forest produce, when it comes to the market, is due to the services of middlemen and forms no part of forest production. We, therefore, think that complete statistics of forest production can be obtained from the Forest Department. No figures regarding production from private forests are available. Such production is comparatively small, but figures should be obtained, so far as possible, through the Revenue Department and published.

57. The Departments of Fisheries in Madras and Bengal publish some statistics relating to fisheries. The Madras report deals only with sea fishing, and gives the weight and value of the take of sea fish within certain areas, the average quantity of fish cured, the number of fish curing yards, ticket holders, market and boats ; and the wholesale prices at Tuticorin. The Bengal Fisheries Department publishes only the quantity of fish imported into Calcutta by road, rail or river. The information is quite incomplete. We should aim at ascertaining the amount and value of the total catch in both inland and sea fisheries. Figures should also be collected in respect of chank, pearl, cyster, and other special fisheries. Fish curing and other industries subsidiary to fishing should be dealt with under industries.

In Madras, the organization of the Fisheries Department can be utilized to secure reliable data of the production of sea fish in that presidency, so far as the main centres of fishing and fish-curing yards are concerned. The catch of fishing villages outside the areas of the curing yards, as well as the catch of fresh water fish in the inland villages, can be recorded by the revenue agency, with the help of inspectors who may be appointed for ascertaining the production of cottage industries and other forms of miscellaneous production. It may also be possible to secure, from municipalities and railways, details of the quantity consumed in large cities such as Calcutta, Bombay and Karachi. As regards the rest of India, the work of the collection of the information should be done by the inspectors above referred to, under the guidance of the Fisheries Department wherever one exists.

58. For mineral production in India, we have two sources of information, viz., the annual "Reports of the Chief Inspector of Mines" and the "Review of the Mineral Production in India" published annually in one of the issues of the Records of the Geological Survey. The information relating to mines dealt with by the Department of Mines includes the number of mines, employees, accidents, mineral concessions, licenses and leases and the estimated quantity and value of all kinds of mineral production. These statistics are complete, but information regarding indigenous mining and certain smaller quarries is wanting.

The production of minerals should be ascertained through the Chief Inspector of Mines. The Indian Mines Act of 1923 applies to all mines, howsoever small, except those exempted under Government of India (Department of Industries and Labour), notification No. 1051, dated the 26th of July, 1924. For such mines as are not dealt with by the Department of Mines, including indigenous mining, which is conducted on a very small scale, statistics can be collected by the Revenue Department, according to instructions which may be laid down by the Chief Inspector of Mines. The information supplied should be of quantity and value of minerals produced, number of persons employed and value of other material used up, including fuel consumed or power employed.

59. Large-scale industries may be defined as industries governed by the Indian Factories Act. No information about the production of manufactured goods, other than cotton and woollen goods, paper and beer, is published. The industrial census, taken along with the population census of 1921, gave the number of large industries and their employees, number, nature, and power of engines, and the number of looms in textile industries. The publication "Large Industrial Establishments" contains only a list of establishments, with the number of employees. The Department of Statistics publishes a small pamphlet called the "Monthly statistics of Cotton Spinning and Weaving in Indian Mills" which gives the quantity of yarn spun and of woven goods. The consumption of raw cotton and jute at the mills is also stated. It will be seen that, apart from cotton goods, data relating to manufactured articles are either scanty or are not collected at all. The recent reports of the Tariff Board, however, have made available an estimate of the production of iron and steel goods, paper, ink, sulphur, magnesium chloride and certain other minor manufactures. But, in no case are the values of outturn given and, even where the consumption of raw material is stated, it is impossible to arrive at the "added value of the production". Appendix F. (2) to our questionnaire, printed at the beginning of Vol. II of this report, will show that no statistics are collected for a large number of industries, some of which fall under the designation "Large-scale Industries". We consider it essential that, in respect of all large-scale industries, the following statistics should be collected through the Department of Industries and published annually:—

- (a) Quantity and value of manufactured goods,
- (b) Quantity and value of raw material used up in production,
- (c) Added value of manufactures,
- (d) Value of fuel or power used, and
- (e) Number of employees.

It was suggested by a competent witness that the quantity and grades of the outturn might be ascertained and that they should be evaluated by formulæ in the statistical bureau. This plan might be adopted if there is any opposition to the demand for values of outturn.

The Director of Industries should have no difficulty in securing the information. We have been told in some provinces that the Director can obtain it by persuasion, but legislation would remove any possible obstacles.

Some witnesses have objected to asking for the value of fuel used on the ground that the enquiry might be taken as an attempt to get at the profits. While we are very reluctant to recommend any measure which would savour of such an attempt, we think, following the example of the United Kingdom and the Dominions, that it is necessary to ascertain the value of coal or other fuel in order to arrive at net production.

In addition to collecting statistics of production every year, we think a regular census of production of large industries should be taken quinquennially. The census need not be as elaborate as in the United Kingdom, but particulars regarding the industries might be collected in some detail, including the salaries and wages paid to the staff and workmen, separately for each class of operatives, if the owners of the factories have no objection. The capital invested and the value of lands, buildings and machinery, less depreciation, may be ascertained for the purpose of being included in an estimate of wealth, if the establishments concerned are not opposed to such a course. Most factories will, we believe, give such information, if secrecy is ensured.

Details of the information to be collected should, we think, be settled by the Statistics Department in consultation with the Industries Department and the manufacturing establishments concerned. We are advised that legal powers will be necessary for the census of production from large-scale industries.

60. The material relating to production from cottage industries is exceedingly meagre. In India, cottage industries play a very important part in production. Nevertheless the information which is available is scanty and can be gleaned only from isolated industrial monographs and occasional industrial survey reports, like Latifi's "Industrial Punjab", and Chatterji's "Notes on the Industries in the United Provinces". In a few cases, bits of information relating to the output per man, per family, per day or per month, quantity of by-products, and the number of workers engaged in particular cottage industries can be picked up here and there. But, beyond localized spasmodic efforts, no attempt has been made to ascertain the total production of cottage industries. We consider it of great importance that an estimate of the quantity and value of the total annual production of cottage industries should be ascertained along with the estimated value of raw material used up. It would be interesting to ascertain, at the same time, the number of persons engaged wholly or partially in such industries, distinguishing dependents and hired workers from the owners. In weaving, the number and kind of looms might be ascertained and, similarly in cottage industries using machinery of one kind or another, the number of such machines might be recorded. Where the production varies in quality, the grades might also be noted.

CHAPTER VI.

Examination of Material—concl'd.

ESTIMATES OF INCOME, WEALTH, ETC.

61. As regards estimates of income, wealth, cost of living, indebtedness, etc., such official information as is available is very meagre. We have not been able to see any official record of estimates of income, etc. There are monographs published by officials and private persons at different times (a list of these is given in Appendices 3, 4 and 5). They relate chiefly to the study of some working class families in Bombay city and a number of labour class families in Assam and village studies in parts of the Bombay Presidency, Bengal, Madras and the Punjab. Some of the recent settlement reports, especially in Burma, also contain useful information concerning the income derived by typical families of agriculturists.

62. We have already explained that among the tests of economic efficiency, income is the most important. The income-tax statistics of British India give useful information regarding the earnings of Government servants, trading classes, persons engaged in industries and liberal professions, etc., with incomes of Rs. 2,000 or more, per annum. But, unlike in the Dominions, the statistics of income in this country cover a very limited field. Here, all agricultural incomes are excluded and this omission leaves out the most important source of income in an agricultural country. The number of persons paying the income-tax amounted, in the year 1922-23, to 238,242 showing that the income-tax statistics after all account for the incomes of a very small fraction of the population numerically, however important that fraction may be in other respects. It has been urged that the returns of income made by the trading classes are far from correct. This is no doubt true to some extent but, on the contrary, incomes are often over-assessed and the errors largely adjust themselves so far as the lower grades of income are concerned. Moreover, the understatement of incomes is not a feature peculiar to India. The difficulty is experienced in other countries as well. There can be no doubt that the creation of a separate Income-tax Department has resulted in great improvement in ascertaining the true incomes in the higher grades. We would suggest that in the income-tax returns greater details of the sources of income, *i.e.*, of the business, profession or occupation from which it is derived may be given in future.

Theoretically, the best method of ascertaining the income of any given province would be to take an income census from house to house, similar to that taken some years ago in Australia. But this must be rejected as impossible on account of the cost involved and the difficulty of obtaining reliable data by direct interrogation. We are therefore suggesting that general investigations as to income should be carried out every year for small typical areas, in both urban and rural tracts, so that the results may go on accumulating till their volume is sufficiently large for generalization, *i.e.*, to enable estimates of income of classes and administrative units to be framed with the aid of index numbers where necessary. The methods to be adopted will be explained in detail in the next two chapters.

63. In collecting data it should be borne in mind that they should be in sufficient detail for framing estimates of—

- (i) distribution of income according to occupations and classes, and
- (ii) distribution of income showing the percentage of population in the enjoyment of various grades of income.

Distribution of income.

After some experience, it should also be possible to prepare estimates showing distribution of income between production and services and between property and services. Such estimates of distribution of income are available for some of the more advanced countries. Similar figures are necessary for British India, if its economic condition is to be correctly understood.

64. No official estimates of the wealth of India, national or private, have been attempted in the past. Such figures

Wealth.

as are given by statisticians and others are rough guesses made on the basis of published statistical and other material relating to the country. The most satisfactory way of obtaining information concerning private wealth would no doubt be to take a regular house-to-house census throughout the country. But, the very heavy cost involved puts such a measure out of court. Moreover, under present circumstances, much difficulty will be experienced in obtaining reliable information regarding private wealth, particularly that relating to bullion, ornaments and other valuable property.

We are of opinion that in the course of intensive enquiries recommended in the sequel, investigators should endeavour to prepare, *wherever possible*, by a house-to-house enquiry, approximate estimates of individual wealth. But in view of the initial difficulties which have been brought to our notice, we are of opinion that estimates of local collective wealth should be prepared from the very start by what is known as the 'inventory method' for villages, towns and cities. Such estimates can be framed by evaluating the area of land, the number of houses and the number of cattle in each unit area. A rough estimate of the value of furniture and implements can be added. The average price of land in each village or group of villages can be worked out from the statistics of sales of land and the *tahsildar* assisted by a local committee of non-officials can ascertain the value of houses, etc. In cities and towns, the work would be heavy and more difficult. But, here again, the local bodies could be asked to supply the information partly from the register of rental values and partly with the help of local non-official committees under the advice of experts or municipal or public officials experienced in the valuation of properties. Estimates of national wealth will include private wealth and also public wealth or wealth under communal ownership, such as, railways, roads, tramways, public buildings, irrigation works, harbour works, telegraphs, telephones, defence works, military equipment and other similar material. Estimates of the public wealth may be obtained from the Government departments or officials who are custodians of such property.

65. The material available as regards cost of living in this country is mentioned in Appendix 4. It may be said to

Cost of Living.

fall under four groups. First, there are the cost of living index numbers for the working classes prepared by the Labour

Office, Bombay and by the Director of Industries, Bihar and Orissa. Secondly, there are records of special enquiries into conditions of well-defined classes, such as, "The Report of the Assam Labour Enquiry Committee", "Report on an enquiry into working class budgets, Bombay", "The Reports of the Patna College Chanakya Society", "Family budgets of clerks in Lahore", etc. In this class may also be included the family budgets embodied in the 1921 Census Reports of Bombay, Assam and Baluchistan. In the third place, we have several village studies (like those of Dr. Harold H. Mann in Bombay and Major J. C. Jack in Bengal) for the Presidencies or Provinces of Bengal, Bombay, Madras, the Punjab and Bihar and Orissa. Lastly, there is much valuable information relating to cost of living in some of the settlement reports, particularly those of Burma.

The results of these studies have, however, not been of much use so far, partly because they were not made in sufficient number for any one class of people in any particular locality, so as to form a basis for cost of living index numbers; and partly because, the sources of information were not reliable in consequence of the illiteracy and ignorance of the people, from whom the information was derived. The only two successful attempts at preparing cost of living index numbers have been made by the Labour Office, Bombay and the Director of Industries, Bihar and Orissa, although the reliability of, at all events, the former has been questioned. There is no reason why similar indices should not be prepared in other provinces or why they should be confined to the working classes only. We think the information on this subject should be supplemented by the preparation of cost of living index numbers for working classes in the principal industrial centres and index numbers based on family budgets (showing expenditure on various items, e.g., food and fuel, rent, clothing and other requirements) of typical families of other classes.

Two witnesses from Bombay, viz., the late Mr. L. J. Sedgwick and Prof. R. M. Joshi laid some stress on the importance of determining, (1) a normal subsistence level and (2) a minimum subsistence level as a starting point in all enquiries connected with the cost of living.

The minimum subsistence level, it has been suggested, may be arrived at by taking into account the three lowest standards officially fixed, viz., (1) the jail diet, (2) the hospital diet, and (3) the famine code rations. These suggestions may be taken into consideration by the Central Statistical Bureau if one is established in accordance with the suggestion made later in Chapter VIII.

66. A large number of studies on the indebtedness of particular

Indebtedness. classes of the population in selected localities are already available as may be seen from Appendix

5. Some of the publications, for example, Mr. Darling's "Punjab Peasant in Prosperity and Debt" are special studies on this subject; in others this topic forms only a part of the subject matter. The only official sources of information which may be of some value are the records of the Co-operative Societies and the reports of the Registration Department. The figures of mortgages and transfers are published in the Provincial Land Revenue Administration Reports. The subject of agricultural indebtedness also receives attention during settlement operations; and the assessment reports and some of the settlement reports of Burma contain valuable information in respect of the tracts dealt with.

Information regarding public debt is published in the Statistical Abstract and calls for no comment. As regards private indebtedness, the results of the intensive studies should be published in order to give an idea, to the public, of the extent of indebtedness of various classes or tracts, together with information regarding the causes of indebtedness, the rates of interest charged and the sources of the loans. In regard to the agricultural classes, this information coupled with statistics of debts secured by land mortgage, which are already published, will present a fairly complete picture.

67. Statistics of wages, to which so much prominence is given in other countries, have so far been very defective in India. Wage statistics used to be published in the annual issues of "Prices and Wages" but that publication has now been suspended as a result of retrenchment. The publication used to give the results of the quinquennial wage censuses (those of 1911 and 1916) in respect of a few urban and rural occupations. In the Central Provinces, the rates were reported annually but only for a few of these occupations. The same publication also used to give the rates of wages of certain operatives employed in selected cotton, woollen, jute, rice, and paper mills, in certain railway workshops, in one or two leather factories, in the Murree Brewery, in certain tea plantations, in the British India Steam Navigation Company, and on the Orissa canals. Special publications on wages have been referred to in Appendix 6.

The results of the provincial wage censuses of 1911 and 1916 were found to be so unsatisfactory that a third one proposed to be taken in 1921 was abandoned as an all-India project. In Madras and the Punjab alone was a general wage census taken in 1921-22; and a census of rural wages only was taken in Bihar and Orissa in 1924. But no regular official wage statistics are being, any longer, published for British India as a whole.

The chief defects of the wage census figures, as they used to be published, were briefly these :—

- (i) that they did not embrace a sufficiently large number of villages and towns, nor were the units selected sufficiently typical ones,
- (ii) that the rates were reported between too wide a range, and even where the averages were given, no uniform system was adopted, and the weighting of sub-district results was faulty in some cases,
- (iii) that the classification of rural and urban workers was not comprehensive enough in view of the great difference in the nature of and remuneration for work in different places,
- (iv) that the frequency of employment was not given, and
- (v) that the unit of time for which wages were recorded was not uniform.

The wage statistics so far as they go are said to be fairly accurate in some provinces, *e.g.*, the Punjab.

Our suggestions for a quinquennial wage census and for annual wage returns have been discussed at length in Appendix 7, and our scheme

relating to the subjects has been described in chapters VII, VIII and IX. But, we may mention here, in passing, that the information to be collected should, in our opinion, comprise rates of wages of various classes of operatives in industrial establishments, mines, docks, railways, workshops and municipalities; those in cottage industries; of domestic servants and artisans in towns; extra payments at harvest and supplementals; and the mode, range of wages, and frequency distribution for each class.

68. Mention may be made here of the fact that the "Large Industrial Establishments in India" which is an occasional publication of the Department of Statistics, gives figures of the average daily number of persons employed in each such establishment. The only other labour statistics available are the average daily number of persons employed in each kind of establishment ascertained at the Industrial Census held in 1921 as part of the population census operations. The annual reports of factory inspectors and of the Chief Inspector of Mines give like information. No investigation has however been made as to the hours of labour, except one by Mr. Findlay Shirras in regard to the cotton mill industry in Bombay.

69. In most places 'Prices' fall under 'Labour' statistics. As a matter of fact, however, wholesale prices are of use in evaluating 'production' and relate to statistics of production, while retail prices are necessary for measuring changes in 'the cost of living'.

The statistics of prices have also suffered from the recent retrenchment policy. The fortnightly wholesale and retail prices of certain staples, cereals, pulses, oil seeds, raw sugar, salt, etc., are no doubt still being collected in each district but the annual all-India publication "Prices and Wages" has unfortunately been suspended. This used to give not only the wholesale and retail prices of several commodities at many important places in India, with their index numbers, but also the export and import prices.

"The Index Numbers of Indian Prices, 1861-1918" had, since 1918, been kept up-to-date by the issue of an addendum every year. We understand that in spite of the suspension of "Prices and Wages" this addendum will be continued. Harvest prices embodied in the "Agricultural Statistics" have been referred to under agricultural production.

The collection of wholesale prices is only partial and exception has been taken to their reliability. The sources from which retail prices are collected are also said to be untrustworthy. We think the collection of prices should be placed on a comprehensive basis. Wholesale prices should be collected fortnightly in respect of all agricultural products in each district, at the principal market towns within or near each assessment or revenue circle. Retail prices may be collected weekly from the principal towns in each province and published as is done at present. Where a commodity has marked variations in quality, e.g., *desi* and American cotton, fine and coarse rice, the prices of the various grades should be stated. The agency for reporting both kinds of prices should be honorary correspondents so far as possible. In every market town there are dealers in agricultural products who will, we presume, be glad to report the prices fortnightly. In each selected market town more than one honorary correspondent should be appointed and formally entrusted with this duty.

As regards retail prices, the bazaar *choudhris* may be required to supply information under their signature or, if more convenient, some reliable honorary correspondent may be appointed. The *tahsil* officer should be made responsible for personally verifying the accuracy of the information in both cases and before he sends up the list of prices current, he should enter a certificate thereon to the effect that he has personally verified by inspection of books, or otherwise, that the rates entered in the list are correct. When the town reporting the prices is not the headquarters of the *tahsil* officer, the duty may be relegated to the inspector within whose circle the town lies. If these precautions are enforced, we are sure that the statistics regarding prices will attain a degree of accuracy, which will not be open to objection.

Both wholesale and retail prices should, we think, be published collectively for the year. In each province the weekly and fortnightly prices should be brought together and averages struck for each article in each town, and also for the province. In the central publication, provincial averages for each week and fortnight should be stated and the annual provincial averages should be published for the year.

CHAPTER VII.

Scheme of Economic Survey—General.

70. We shall now proceed to consider the second part of the terms of reference in which the Committee are enjoined to make recommendations as to "the lines on which a general economic survey should be carried out, with an estimate of the expenditure involved in giving effect to such recommendations".

Second part of Terms of reference.

In the terms of reference laid down by Government for our guidance, mention is made of the economic condition of the various classes of the people of British India. We also note that in the resolution of the Legislative Assembly, quoted in paragraph 1 at the beginning of the report, the very first matter mentioned for enquiry is "the economic condition of the various classes of the people of India". As the various classes of people do not live apart but are mixed together in their economic life, we presume that in both cases the real intention is that the proposed survey should deal with the economic condition not only of the various classes of the people but also collectively of specific geographical or administrative units, large or small, of which they are the residents, and of the country as a whole.

Moreover, there are certain statistics of economic significance, such as, finance, trade, transportation, etc., which can be collected only for a province or for the country as a whole. Their influence on the economic condition of individual classes can only follow from the results deducted for a province or for the whole country.

We have carefully studied the debates of the Legislative Assembly and of the Council of State pertaining to the resolutions which led to the appointment of this Committee and we also made it a point, at our conferences with the members of the two Houses of the Central Legislature, in April last, to ascertain the views of those who had taken part in the debates. We are confirmed in our belief that the interpretation we have put on the terms of reference is not only consistent with a scientific treatment of the subject but is also in consonance with the views of the Honourable Members who initiated the demand for an economic survey.

We have seen in the preceding chapters that the existing statistical material is not sufficient to enable an estimate to be framed regarding the economic condition of the various classes of the people or of any administrative unit or units. We have also made our recommendations under each head as to the extent to, and the manner in, which the existing material may be supplemented by improving the statistical data at present available or by collecting additional information by new methods.

In order to devise remedies or reforms on a comprehensive scale, the entire economic fabric of the country should be closely sifted by a survey. For carrying out such a survey an effective organization, a continuously functioning staff and rules and instructions based on foreign experience as adapted to local conditions, will have to be brought into existence and adequate funds provided for putting the proposals into practice. In what follows we shall briefly outline a scheme which embodies all these characteristics and which is designed to give a progressively correct estimate of the true economic condition of the country and its people.

71. The question of the classification of the population for purposes of an economic survey has next to be considered. A recognized classification is needed mainly for the presentation of the

Classification of the results of the proposed intensive studies. Various suggestions have been made by witnesses examined by us. Some have advocated the adoption of the occupational classification of the population census with certain specific modifications. Others have proposed classification with reference to income, while one witness has suggested a double classification based on both occupation and income. We consider that the statistics of income, wealth, cost of living, etc., should be collected for the twelve occupational classes, adopted at the last population census, which are based on a scientific scheme prepared by M. Jacques Bertillon in 1890. We do not recommend any modification in the grouping as that would clash with the occupational figures collected at the last two population censuses. The only alteration we would suggest in that classification is that the class "exploitation of animals and vegetation" should be sub-divided into two main classes, namely, (1) agriculture and (2) 'forms of exploitation of animals and vegetation other than agriculture'. We recommend that the distribution by occupations or callings should be further sub-divided according to income under seven standards or grades; in other words, that income should be ascertained under the 13 heads of occupation and under 7 classes of income, as shown in the following table :—

GROUPS OF OCCUPATIONS.

Grades.	EXPLOITATION OF ANIMALS AND VEGETATION.		Exploitation of minerals.	Industry.	Transport.	Trade.	Public Force.	Public Administration.	Professions and liberal arts.	Persons living principally on the incomes.	Domestic Service.	Insufficiently described occupations.	Unproductive.
	Agriculture.	Others.											
Wealthy— (With family income of Rs. 24,000 and over).													
Upper Middle— Rs. 6,000--24,000													
Lower Middle— Rs. 1,200—6,000.													
Rs. 600—1,200 { Labour— Upper classes. Others— Poor in comfort.													
Rs. 200—600 { Labour— In comfort. Others— Poor below comfort.													
Rs. 100—200 { Labour— Below comfort. Others— Very poor.													
Below Rs. 100 { Labour— Poor. Others— Very poor.													

Classification of the Population.

We have in this table classified the population into vertical divisions on the basis of occupational differences, and into horizontal ones according to economic well-being or status. We have suggested 7 grades of income but we have sub-divided the 4 lower grades into (1) labour and (2) classes of people other than labour. In the preliminary stages of the survey, it should be sufficient if this double classification is used for presenting the figures of income.

72. At the last population census, provinces were apportioned into certain large natural divisions based on their physical features, climate and rainfall. These divisions are not strictly economic. But considering that figures of population, occupation, etc., have been published for the divisions in question

at the last two censuses, we see no reason why statistics of economic condition should not be tabulated for such homogeneous tracts. In the ordinary course zones can be determined only after, and as a result of, an economic survey and, in view of varying industrial and agricultural opportunities, economic zones may not coincide with divisions which have similar physical characteristics. But we have been told by expert witnesses that, to enable generalizations to be made from intensive studies in limited areas, such studies must be made in parts of homogeneous tracts. Within a district there are tracts homogeneous with regard to conditions of rainfall, fertility, communications, etc. Variations in the outturn of land belonging to one class and the conditions of life in similar occupations within such a tract are more or less identical. These distinctions are brought out at the periodical settlements in what are known as assessment or revenue circles. In our opinion the revenue circles represent the smallest economic zones and the provincial natural divisions the larger ones. We therefore think that statistics should be collected originally for the village, town or city, and then successively for the assessment or revenue circle, the *tahsil* or *taluk*, the district, the larger economic zone and the province, the statistical data for rural and urban areas being kept quite distinct. We are of opinion that for our larger economic zones, the provincial natural divisions of the Census Report of 1921 may be adopted. The Provincial Governments concerned may make such modifications as they may consider necessary, provided that the utility of the figures tabulated at the last two population censuses is not impaired.

73. Before proceeding to describe the methods of survey, which we have foreshadowed in the preceding chapters, we consider it necessary to make a brief reference to certain suggestions put forward by some of the witnesses in this connection. There is a school of experts who do not believe in any extensive enquiries or the collection

of any data whatever for the provinces or the country as a whole. Their apprehension is that any collective data would be liable to misinterpretation. They advocate nothing but intensive studies on various subjects, in various tracts, with the sole object of ascertaining facts and without any immediate end or result in view. They would go on prosecuting these studies until such time as a repetition of similar results may lead to inferences. Some of these witnesses consider that it may take at least twenty years before it is found possible to obtain a reliable picture of the economic condition of the country. Others consider it impossible to measure certain forms of production accurately and would therefore not attempt to ascertain total production. They would content themselves with statistics of production where they could be recorded with perfect

accuracy. Their fear seems to be that comparisons with the figures of other countries might place the Indian conditions at a disadvantage.

There is another school of economists who want production to be ascertained by a central statistical organization but would like all intensive studies in regard to tests, such as, income and wealth, to be conducted under the guidance of a separate body of the type of the Punjab Board of Economic Enquiry without any connection or co-ordination between the two organizations. They want results of intensive studies to be published for each village separately, but do not wish the results to be put together or published, even in the provincial publications. We need hardly say that we do not agree with any of these suggestions. While we appreciate the importance of intensive studies and wish to aim at the maximum of accuracy, we think we should follow the example of the Dominions in preparing estimates and obtaining approximate figures by generalization where strict accuracy is not possible of attainment. We should not refuse the guidance which approximate figures may give, because we are unable to obtain strictly accurate figures for a long time. We are also strongly of opinion that all work connected with economic survey should be co-ordinated and guided by one central authority instead of being split up into two or more unconnected, water-tight compartments.

74. As remarked in paragraph 40, we do not propose to deal, in our scheme, with the collection of general statistics falling under Class I

The Committee's proposals for which the material already published is more or less complete. We shall confine our proposals to subjects falling under Classes II and III dealt with in Chapters V and VI respectively. These are :—

1. collecting statistics of production, and
2. preparing estimates of income, wealth, etc.

75. We have proposed in paragraph 41 that complete statistics of production of all kinds should, as far as possible, be collected under each of the following heads :—

- (a) Agriculture,
- (b) Pasture and Dairy Farming,
- (c) Forests,
- (d) Fisheries,
- (e) Mines,
- (f) Large Industries,
- (g) Cottage Industries.

So far as large industries are concerned, the annual statistics should be supplemented quinquennially by a detailed census of production.

Figures of production of all kinds will be obtained through Government departments by means of the existing agency or additional special staff to be entertained for the purpose, as will be explained in the next chapter. It would be idle to attempt absolute mathematical accuracy in obtaining the figures of production. In the words of Dr. Bowley.* “ There is not in existence a perfectly accurate measurement, physical or economical, just

*Elements of Statistics, Second Edition, page 199.

as there is no perfectly straight line or perfect fluid". Even in countries with much greater resources, where the population is literate and particulars of production in all branches are gathered by the issue of schedules to honorary correspondents, it is not found practicable to collect all the schedules issued and the figures of production are often based upon inferences drawn from as many schedules as are received in time—the number in some cases not exceeding 25 to 50 per cent. of the total. Wherever, therefore, it is not possible to obtain actual figures of production, we should try to arrive at as reliable an approximation to them as possible.

76. We attach great importance to intensive studies for the purpose of ascertaining the income, expenditure, wealth, indebtedness, etc., of the various classes of the population. Several such enquiries have been made in the past few years, (paragraph 61) and some valuable work has been done in this connection.

Estimate of income, wealth, cost of living, etc.

The publications on village studies, such as those of Mr. Bhalla and Dr. Lucas (Punjab), Major Jack (Bengal), and Dr. Gilbert Slater (Madras) are very elaborate and are more or less in the form of village gazetteers dealing not only with the economic and social life of the people, but also with the climatic conditions, natural resources, etc., of the villages dealt with. The minute information contained therein is most useful in ascertaining the detailed condition of each village. Such detailed enquiries may be necessary for other specific purposes but, in our opinion, they are somewhat too elaborate for our purpose, *i.e.*, for the purpose of ascertaining the general economic condition of the various classes of the people and the causes which contribute to their poverty or affluence. One of the witnesses (Professor H. Stanley Jevons of Burma) aptly remarked. "To be quite frank, my own feeling is that we have already had too many studies of an intensive character in India with a view to ascertaining the condition of people in certain isolated spots and a great elaboration of such enquiries would not, to my mind, serve any useful purpose".

77. In our opinion, the intensive studies should comprise enquiries into the following broad facts concerning every household (which should be taken as the unit) included in the survey:—

- Subjects for intensive study.
1. Income, from
 - (a) land,
 - (b) trade,
 - (c) industry, etc., and
 - (d) other sources.
 2. Expenditure
 - (a) food,
 - (b) other necessities, *e.g.*, clothing, rent, etc., and
 - (c) extraordinary expenses.
 3. Wealth
 - (a) value of landed property,
 - (b) value of house property,
 - (c) value of other property, including furniture, implements, tools, etc., and
 - (d) investments, cash, jewellery, etc., (if possible).

4. Indebtedness

- (a) debts secured by mortgage,
- (b) unsecured debts, and
- (c) causes of indebtedness.

The enquiries into expenditure should enable standards of living and the cost of living of various classes to be determined. In towns and industrial centres, the urban investigators might also devote attention to studying labour conditions in large industries.

Questions and instructions on the subjects can be prepared for each province, according to local conditions, on the lines of the excellent questionnaire drawn up by the Punjab Board of Economic Enquiry. The information will be collected with reference to the classification proposed in paragraph 71.

78. The intensive studies should be directed towards ascertaining the condition of the different classes in each village and of the village as a whole.

Judging from the opinions given by witnesses, we are inclined to think that, with only four subjects engaging his attention, an investigator should be able to collect information for five families in a day, *i.e.*, he should have no difficulty in dealing with an average village of a hundred families in 20 working days. Family budgets have been collected sometimes in even shorter periods, but after examining the publications and the evidence recorded on the subject, we are of opinion that, to secure reliable information, the investigator, if not himself a resident of the locality, must become quite familiar with the people of the village under study and win their confidence. We, therefore, think that he should, instead of completing his enquiries in one village in, say, a month, keep a group of 12 villages under observation and investigation for a whole year and, at the end of it, submit a brief report of the results. Similarly, in urban tracts, the number of houses to be dealt with in a year should remain under study throughout that period. The statistical conclusions should be embodied in an abstract appended to the report. From these abstracts it will be possible to compile statistical results, under the four heads mentioned above, for all the villages investigated. The statistical results so obtained from the enquiries should, we think, be published from year to year with the annual provincial statistics, and, in every succeeding year, the results of the previous year's investigations should be shown alongside for comparison. These results will, in course of time, afford a basis for generalization as to the distribution of income and wealth as also to the distribution of taxation, imperial, provincial and local and its relation to the income. The selection of villages for intensive study should be made every year in consultation with the Board of Economic Enquiry and the local officers. We would advise groups of adjoining villages to be selected by turn in the different *tahsils* of a district. Within the *tahsil* the groups should be taken by rotation from the different assessment (revenue) circles. Information should, however, be collected for whole villages. For purposes of intensive study, a town should, we think, be divided into homogeneous blocks, as far as possible and, within those blocks, houses should be selected by what is known as random sample. Information regarding indebtedness will not be required in towns and there will be some rural tracts which may be in too prosperous a condition to need this class of investigation. While, therefore, enquiries regarding income, expenditure and wealth should be included in the general programme, indebtedness need be added only in the case of special classes or tracts.

79. Another subject for special investigation is the fragmentation of holdings, the latter being often so minutely subdivided as to make it unprofitable for any one to cultivate the area.

Special Investigations.

A number of witnesses brought to our notice the fact that the question of unemployment among the lower middle classes demanded special investigation at the present time. The clerical classes are said to be suffering from lack of employment. The condition of depressed classes also needs investigation. A few important witnesses brought to our notice that there was perennial under-employment in rural areas on account of the too exclusive dependence of the population on agriculture and the uncertainties of the seasons. Each such matter may form the subject of special enquiry through the Statistical Department. Any special economic deficiencies in specific geographical areas, for example, areas subject to malarial fevers or any special disabilities from which particular classes of people, such as the weaver class, may be suffering, may also form the subject of special enquiry with a view to the adoption of suitable ameliorative measures.

Besides the intensive enquiries on the four general subjects mentioned in the preceding paragraphs, special enquiries into any subjects of local importance which the Provincial Government may prescribe from time to time, may be undertaken by the Provincial Statistical Department. For such special investigations, the investigating staff alone will have to be strengthened, the Provincial Government making additional financial provision for the purpose. Ordinarily, no increase in the supervising staff will be necessary.

80. Apart from investigations into wealth by intensive studies, we propose that estimates of the collective private wealth and national wealth may be prepared by the inventory method as far as practicable, as described in paragraph 64. We also recommend that statistics of income-tax should continue to be published with the details which we have suggested in paragraph 62.

Extensive surveys for income and wealth.

81. Wages and prices form a class by themselves. The methods by which they should be ascertained have been described at length in Chapter VI and need not be repeated here. Briefly stated, the statistics of wages for large industrial establishments should be collected by the Industries Department, those for mining establishments by the Chief Inspector of Mines and particulars relating to rural and other labour by the Revenue Department. Annual returns should be prepared, showing the rates of wages prevailing in each month. A census of wages should be taken quinquennially. Prices, both wholesale and retail, should be collected by the Revenue Department.

Wages and Prices.

82. In recent years, there has been a strong tendency towards centralization of statistics in all the Dominions of the British Empire. In Australia the Federal Bureau of Census and Statistics was created in 1906 and the Federal and State Governments have been in favour of a single statistical authority ever since. A census and statistics office was formed in New Zealand in 1915. A central statistics office was created in 1917 for the Union of South Africa. A Dominion

Centralization of Statistics.

Bureau of Statistics was established in Canada in 1918 constituting a comprehensive central statistical office, all purely statistical work being brought by transfer under its immediate direction.

'Statistics' is already a central subject in British India; a central statistical office has been in existence for several years, although as a result of the recent retrenchment policy, it was reduced in status and strength and subordinated to the Director-General of Commercial Intelligence. The statistics published by the central office are collected, for various objects, by the several departments of the Provincial and Central Governments, but there is no distinctive connecting link and no real co-ordination between them. What is more important for our purpose is that they are not designed to give an indication of the true economic trend of the people or of the status of British India as an economic unit.

If the statistics of British India are to be maintained in a satisfactory manner in future so as to form a basis for building up the economic policies of the country, all work in that connection should, as in the Dominions, be co-ordinated and centralized. The aim should be to provide a common purpose and a "central thinking office" on the subject of statistics and to bring the statistics of all the departments, both of the Central and of the Provincial Governments, under the supervision of one central authority who should be the adviser of Government in statistical matters.

Those statistics which are partly departmental and partly economic may continue to be compiled by the departments concerned but they should come under the technical guidance of the central statistical authority. The purely departmental publications which do not contain any material required for the economic purposes of the Central and Provincial Governments may be left to the departments concerned.

83. The proposed scheme of economic survey should, if it is to secure enduring success, have its organization defined by law. Legislation is necessary to bring into existence an all-India system of statistics. It has been said that there can be no statistics without legislation. The object of legislation connected with the proposed scheme should be two-fold, namely (1) to place the whole statistical organization on a legal basis, and (2) to ensure or facilitate the collection of correct economic data from individuals and firms. For the latter purpose, it would be necessary for officers to possess legal powers of compulsion howsoever mild. The data to be collected in most cases being such as cannot be obtained except from the individuals and firms concerned, it is necessary to legalise the demand. The exercise of the power of compulsion must be vested in certain officers and consequently the legislative measure to be adopted must recognize the whole organization, define the principal duties of the various officers and the subjects on which enquiries may be made or information refused. While arming the officers with the necessary powers to compel persons to supply information, it will be necessary to give guarantees to individuals and firms against any direct or indirect disclosure of the information obtained from them under the seal of official secrecy.

It has been suggested that the objects in view can be secured by an executive order without recourse to legislation. But an executive order cannot provide the powers of compulsion, nor can an organization resting on a mere executive order have any permanent foundation, for it would be open at all times to modification or termination by another similar executive order.

Legislative enactments relating to statistics have been passed in the United Kingdom, the Dominions and other foreign countries. In India, the Census Acts already invest officers with the powers of compulsion needed at the population censuses, even though the enquiries in that connection are not such as to rouse opposition or resentment.

We suggest that, among other things, the following provisions should find a place in the Bill which may be drawn up on the subject :—

- (1) Establishment of Central and Provincial Bureaux.
- (2) Appointment of officials of all grades.
- (3) Appointment and functions of Advisory Committees.
- (4) Powers of a Bureau to obtain information from individuals and firms and from the various departments of Government.
- (5) Matters concerning which information may be collected annually or periodically.
- (6) Obligations on the part of individuals and firms to make true returns, to answer relevant questions and to allow inspection of records containing relevant information.
- (7) Conditions under which information of a specified nature may be refused.
- (8) Guarantee of secrecy for returns and answers.
- (9) Penalties for failure to carry out the obligations imposed and for unauthorised disclosure by officials.
- (10) Publication of information collected.
- (11) Power of Central and Provincial Governments to make rules, etc.

The legislative measure we have proposed may also conveniently embody provisions relating to the decennial censuses of population, thereby obviating the necessity of passing an Indian Census Act every ten years. The new measure may, as in the Dominions, be called the Census and Statistics Act.

CHAPTER VIII.

Scheme of Economic Survey—Organization.

84. No great results can be achieved without organization. The proposal for centralization of statistics which we have emphasized in paragraph 82, will necessitate the creation of a central office, presided over by an officer who will be responsible for the collective presentation of statistical data for the whole of India, and for laying down the broad lines on which such material and data may be collected in the provinces so as to ensure a sound uniform system. This office may suitably be called the Central Statistical Bureau. The staff should, in our opinion, consist of a Director of Statistics with two Assistants, one of the latter being entrusted with economic statistics proper and the other with statistics of all other kinds. The office should have an establishment of one superintendent and some fifty clerks (including typists), with the requisite menial staff.

The duties of the Central Bureau would be :—

- (1) to arrange for, supervise and control the taking of periodical censuses, such as those of population and large industrial establishments, and industrial wages ;
- (2) to collect annually, or at shorter intervals, statistics relating to the economic condition of the people, such as, production, income, expenditure, wealth, prices, etc., either through Provincial Bureaux or direct from the departments concerned ;
- (3) to collate, scrutinize, tabulate and summarize the information collected and to publish it in a presentable form ;
- (4) to compile and publish a Year Book on the lines of the Dominion Year Books, with the co-operation of the Director of Public Information ;
- (5) to supply statistical information to Government and the public, when requested to do so ; and
- (6) to undertake special statistical enquiries for Government when necessary.

The Director of Statistics should be an officer of broad sympathies and outlook and should have had practical training in statistical methods. With a view to arouse public interest in the subject and to enlist public sympathy with the department, his appointment should, preferably, be subject to the vote of the Central Legislature. Each of his Assistants should be a trained statistician or economist and at least one of them must have sufficient experience of local conditions. In connection with the census of population which is taken decennially, the future Director of Statistics should be able to discharge the duties now performed by a Census Commissioner. At each such decennial census he might be given, for a period of about four years, a competent Assistant who would deal exclusively with the census work.

Before formulating our proposals for a Central Bureau and for the adoption of Centralization of Statistics as a definite policy for the future (paragraph 82), we had the advantage of discussing the problems of

statistical organization with the Hon'ble Mr. D. T. Chadwick and with Mr. C. G. Freke, to both of whom we are indebted for much useful advice. The information which has been kindly furnished by them is treated as a part of the confidential evidence recorded by the Committee.

85. Each province should have, for the collection and compilation of statistics, a similar office which may be termed the Provincial Statistical Bureau. It should be presided over by a Provincial Statistician with one Assistant for headquarters and a number of Assistants, usually one for every Revenue Division, for the supervision of work which will be carried on in the districts. We agree with Professor C. J. Hamilton of Patna in thinking that the Provincial Statistician should possess a high degree of local knowledge more than high statistical qualifications. The office establishment should consist of one Superintendent, and some thirty clerks with the usual menial staff. The headquarters Assistant, who may be called the Personal Assistant, should be a trained economist or statistician with a knowledge of local conditions.

All statistics relating to a province should be collected locally under instructions issued by the Provincial Bureau; but figures concerning mineral production may, as at present, be collected by the Chief Inspector of Mines, and those relating to individual factories may be submitted direct to the Central bureau, if the owner or manager of a factory prefers such a course.

When censuses of large industrial establishments and of wages are being taken with the help of the Department of Industries or the Provincial Labour Office, the Provincial Bureaux will probably require a few additional clerks to deal with the issue of the schedules and the compilation of the returns received from the factories through the Department of Industries. The census of population, which is a large enough subject in itself, must be dealt with by a separate establishment and separate financial provision as heretofore.

86. We think it would be a great advantage to associate advisory boards with the officers charged with the work of economic survey. This proposal is favoured by a number of high officials and university professors. It is proposed later (paragraph 102) to make the Director of Statistics and the Director of Public Information jointly responsible for the compilation and publication of the Year Book which will embody the results of the economic enquiries throughout the country. It may be convenient to utilize the existing Publicity Advisory Committee to serve at the same time as an advisory

The Publicity Advisory body for the proposed statistical organization. Committee. The committee, it is understood, consists of 16 members, including 4 officials and 12 non-officials, with the Home Member of the Government of India as its President. It should be possible to strengthen this Committee by the addition of four members—two officials and two non-officials—with economic or statistical experience. The Director of Statistics should be one of the two official members. The committee so enlarged would assist the Director with advice as to the details of the information to be collected, and the methods to be employed in collecting them. They might also be asked to offer their criticism on the Year Book, when ready, before it is submitted for the approval of Government.

87. A Provincial Board of Economic Enquiry should be established in every province. The Provincial Statistician should be a member of the Board and his Personal Assistant might act as its Secretary. The Board should consist of members, both official and non-official, and their functions should be to advise the Statistician as regards the details of his duties and, if necessary, to co-operate with him in the supervision of work connected with economic research. The non-official members should be paid a fee for attending the meetings, at all events, for the first few years.

Some witnesses have deprecated the division of the Boards of Economic Enquiry into rural and urban sections. We agree that the Board should give equal attention to matters rural and urban but, where a Board undertakes to supervise the intensive studies, there should be no objection to such an arrangement, if it is calculated to make the supervision more effective.

88. We have proposed that each Provincial Statistician should be given a Personal Assistant and in addition one Assistant for each Revenue Division (comprising 5 or 6 districts). These Assistants should be graduates in economics with some previous practical training in economic enquiries, if possible. They should be natives of the province, thoroughly conversant with the ways and manners of the local population. Each of these Assistants should have a senior and a junior clerk and two peons attached to him. He will have to supervise, as will be explained in the sequel, 15 to 18 investigators engaged on intensive enquiries and, at the beginning, some 20 or 25 inspectors employed in collecting production statistics. The number of the latter, *viz.*, inspectors, will be reduced to 10 or 12 after the first two years.

89. Two distinct agencies for collecting economic data will be employed in each district, *viz.*, (1) inspectors and *tahsil* clerks—the inspectors for collecting statistics of production other than those pertaining to agriculture, forests, mines and large industries, and the clerks for compiling the statistics of agricultural production—and (2) investigators who will collect, by intensive study, data relating to income, wages, cost of living, wealth, indebtedness, etc., in individual villages and for classes. The former additional staff will be under the Revenue Department subject to the guidance of Assistant Statisticians; while the latter, though forming part of the statistical department and acting entirely under the control of the Assistants, should nevertheless be associated in some degree with the Revenue Department.

90. The agencies for collecting production will be as follows:—

<p>Agencies for Production Statistics.</p>	<p>The statistics of agricultural and forest production will be supplied by the Revenue Department and the Forest Department, respectively.</p>
--	---

The production from Government monopolies, such as, opium and salt will be ascertained through the departments concerned. Similarly, the figures relating to production of large industries will be collected and furnished by the Industries Department, and those relating to mineral production by the Chief Inspector of Mines or the Director of Geological Survey. The principle to be observed is that the primary data should be collected by the department which has most to do with them.

91. Information relating to other forms of production, e.g., cottage industries, pastoral, dairy and fish production Agency in Districts. Inspectors. will be collected by a suitable number of inspectors appointed especially for the purpose, and working under the Revenue Department. To begin with, one inspector may be posted to each *tahsil* (or *taluka*), but the number will be reduced after the first two years to two inspectors per district. These inspectors will be drawn from the revenue inspector class known as the *Kanungo* in the Punjab, which has greater facilities for getting into touch with the people and is more likely to get reliable information from the masses than even trained economists on very much higher pay. These inspectors should be treated as an additional Revenue staff.

It will be necessary to associate local agencies with the inspectors for the purpose of ascertaining the total production of cottage industries, etc. A simple form will have to be devised on which a record of the production from various sources should be kept from month to month. The local agencies to be employed should be :—

- (1) the co-operative society, if any, in the village,
- (2) the *panchayat*, if any,
- (3) in villages owned by a single zemindar, the zemindar's agent, and
- (4) failing all these agencies, the village accountant.

The local agent, whoever he is, can, without difficulty, ascertain at the end of each month the production of the local cottage industries together with the different kinds of pastoral and other miscellaneous products. When the inspector goes round the villages, he will be able to check this record by personal interviews with the owners of cottage industries, and the persons concerned with the other products. In this manner, it should be quite easy for him to form a fairly correct estimate of production of various kinds, other than agricultural, in the village.

In the first year, when these records will be newly started, the inspector will not have the advantage of monthly records but will have to depend entirely upon personal enquiries. He may have to prepare an estimate of production by working out an average on the basis of figures for one or more months, or he may have to estimate the outturn merely with reference to information which he is able to collect during his interviews. For this purpose the staff of inspectors may be doubled for the first two years. The experience gained in the first year and the figures recorded by the local agency from month to month will greatly facilitate the work of the permanent staff, in future years.

92. The *tahsil* officer, whose duties have become somewhat lighter *àars.* supervision by *Tahsil* owing to the transfer of the income-tax work to the new Income-Tax Department and the district board work to the local bodies, and who may possibly be relieved of judicial work in the future, should not find it difficult to supervise the work of these inspectors. The work will not be of an intricate nature. On the contrary, it will involve the collection of information with which the *tahsildar* will be quite conversant. The fact, moreover, that the inspectors will be working under the supervision of the *tahsildars* will provide

the former with the backing of authority which they will need in persuading people to give reliable information. We do not think that any other agency will be half so successful in achieving the object as the one we have proposed. The staff will, however, need a certain amount of technical guidance, the success of their work depending upon the initial training given to them and the detail and lucidity of the instructions issued by the Provincial Statistician and his Assistants for their guidance. The compilation of statistics of agricultural and other miscellaneous production will be made in the *tahsil* office by a special assistant clerk (paragraph 52).

93. The intensive enquiries for ascertaining income, expenditure, wealth, indebtedness, etc., involve patient and intelligent observation.

Investigators.

They should be conducted by qualified investigators specially employed for the purpose. These investigators should ordinarily be graduates, under-graduates or retired revenue officers with special aptitude for economic investigation. Graduates in economics have done the work successfully and University students have made themselves useful under the guidance of their professors. We think that some of the retired revenue officers will, with a little preliminary training, prove equally useful. The co-operation of University professors and students should be enlisted as far as possible in economic research. For enquiries relating to indebtedness, the help of the co-operative societies will be most valuable.

94. For the rural tracts we have estimated (in paragraph 78) that one investigator will be able to deal with some 1,200 families in a year.

Intensive study in i.e., with a population of 5,000 to 6,000 souls.
urban tracts.

The enquiries in towns will be much more difficult and, even when the investigators are local men, they will not find it so easy to collect the necessary information concerning income or wealth. We are therefore of opinion that an investigator will not be able to secure data for more than 50 families in a month or 600 families in a year, i.e., a population of 3,000 souls a year. The total urban population of the Punjab was found at the recent census to be 22,12,191, and there being 146 towns in the province, the average population per town was 15,152. The average number of towns per district was five. We are of opinion that the survey in towns should be conducted on the basis of a random sample of one house in every five in each town. One investigator should therefore be able to deal on an average with one town in a year, i.e., with 20 per cent. of the urban population of an average district; but, since his studies relate to a sample of one in five, the results of his enquiry will really represent the condition of only 4 per cent. of the total population. In five years, a staff consisting of one investigator per district should be able to complete the survey of all the towns in the province and accumulate data for 20 per cent. of the town population. The urban population is however not equally distributed over the districts. While, therefore, two or three investigators may have to be employed in a city like Lahore, one investigator may be able to deal with the urban population of more districts than one, taking the towns in each district in alternate years. In this way a provision of one investigator per district for urban survey will enable the Provincial Bureau to make the necessary adjustment of staff needed for large towns and cities, requiring special treatment. We therefore, think that 29 investigators should suffice for intensive study in urban tracts in a province like the Punjab.

95. We have proposed in the preceding chapter that an investigator should deal with a dozen villages in a year. We propose that two investigators should be employed for dealing with rural areas in each district. Taking the average number of villages per district to be about 1,000, these two investigators should be able to deal every year with 24 or 25 villages, i.e., with about 2½ per cent. of the rural population.

96. We have been told by various witnesses that results pertaining to 5 per cent. of the total population can justify generalization as to the condition of the population as a whole. We have shown in paragraph 94 that one investigator per district will complete the collection, every year, of data relating to 4 per cent. of the urban population or 20 per cent. thereof if a random sample of one in five is presumed to present a reasonably reliable picture of the whole. We have also stated in the preceding paragraph that two investigators working in the rural areas of a district should be able to collect annually data relating to 2½ per cent. of the rural population. But, although we propose that from the second year onward, when statistics relating to 5 per cent. or more of the population will be available, the Provincial Statistician should begin to generalize from the figures, we think such conclusions should be taken for what they are worth. As the results of the investigation become available in each succeeding year, the inferences drawn as to the general condition of the classes, and tracts would become more and more reliable. The statistics should be reviewed every five years. In the course of ten years, we should have data relating to 25 per cent. of the population and although conditions may vary from year to year, and by the end of the tenth year the condition of the villages examined in the first year may have altered materially, yet the figures when taken for large tracts will afford a basis which will not be far removed from the reality, and the use of index numbers will enable the accumulated results to be reduced to a common denominator. There will be three investigators on the average in each district. It is of the utmost importance that their work should be closely supervised by the divisional assistants to the Provincial Statistician.

97. The inspectors for production statistics will, as stated in paragraph 91, make use of local co-operative societies or *panchayats* as far as possible. Where no such body exists and the services of the village accountant have to be requisitioned for keeping the record of miscellaneous production, it will be advantageous to nominate, for the purpose of assisting him in maintaining the record, a small committee consisting of the village headman, one or two leading and, if possible, literate zemindars and the local schoolmaster or, where there is no school, the local shopkeeper. The investigators engaged in economic research should, in our opinion, be invariably assisted by a small committee consisting of the village accountant, the village headman and a few leading residents of the village under survey. These committees can be easily brought into existence through the *tahsildar*.

98. Where the Industries Department has a Superintendent of Cottage Industries as in Burma or Divisional Superintendents (or Inspectors) as in the United Provinces, dealing with cottage industries, their services may be utilized for collecting information regarding production

from that source. In some provinces, grazing inspectors have been appointed. These could probably help in collecting information regarding pastoral products. Similar staff of other departments, *e.g.*, the Co-operative Credit Societies Department might, if available, be made use of on payment of small special allowances, where necessary.

99. The statistics of prices, both wholesale and retail, and of wages prevalent in rural and urban tracts, other than those of persons employed

in large industries, should continue to be collected by the Revenue Department. The method of collecting the information should however be improved, as suggested in paragraphs 67 and 69. Statistics of wages relating to large industrial and mining establishments will be collected by the Director of Industries and the Chief Inspector of Mines, respectively, as suggested in paragraph 81.

100. We have, in Bombay, a Labour Office with a Director at its head, which is said to be costing about Rs. 1,15,000 per annum. In the Madras Presidency, there is a Labour Commissioner with a large staff and, in Burma, a Labour Commissioner has just been appointed. In each of these provinces, the Labour Office may be amalgamated with the new Statistical Bureau. In these three provinces, an organization already exists to form the nucleus of a Provincial Bureau and the duties being cognate, the suggested amalgamation will result in considerable economy of expenditure.

101. In some provinces the post of Provincial Statistician may be usefully combined with that of the Director of Land Records whose work, we have been told, is by no means too heavy. Moreover, the bulk of the information to be collected in each province will relate to agricultural production. The tendency of recent years has been to transfer the work connected with the crop forecasts, etc., to the Agricultural Department, but we have found that the Director of Agriculture is generally a scientific man who is interested more in the development of agricultural processes and intensive cultivation than in the compilation of statistics. The compilation of agricultural statistics has in the past been in the hands of the Director of Land Records and, since the statistics relating to the area under crops still come to him from the districts and are compiled in his office, he would naturally be the proper person to superintend the compilation intended to give the value of crops. Indeed, both the Director of Land Records and the Director of Agriculture should participate in the collection of economic data pertaining to agriculture. The fixation of the standards of yield and the determination of the condition of crops each year should be done by the Director of Agriculture; while the Director of Land Records should be responsible for the work of compilation.

Wherever it is possible to combine the two posts, a substantial saving in expenditure can be effected, and in that case an addition of as many as thirty clerks to the existing staff may not be found necessary. We have been told by a Director of Land Records that he could undertake the additional work if he were given two or three assistants. With a Personal Assistant for statistical work and an assistant for each Revenue Division, he should find it easy to manage the double charge.

102. The Committee consider that an official India Year Book should be published after the model of those issued by the Dominion Governments. It should embody abstracts of all the principal statistics and form a compendium of official data and information concerning the general, social and economic conditions of the people. At present some of the descriptive matter which should go into a Year Book is already given, as required by the Government of India Act, in the publication known as "India" issued by the Director of Public Information. The new Year Book, if published, will form a handy companion volume to that publication. For this reason we would recommend that the proposed Year Book be brought out on the joint responsibility of the future Director of Statistics and the present Director of Public Information.

The Year Book should also contain an abstract giving production of all kinds under the following heads : agriculture, pasture and dairy farming, forests, fisheries, mines, large industries and cottage industries ; and another abstract giving the results of intensive enquiries in regard to income, wealth, consumption and indebtedness, with details of the number of villages, in each province, for which results are collected. Cost of living indices worked out in each province should be brought together and the standards of living which may have been ascertained should be given with the necessary explanations.

Besides the Year Book which we have proposed above, the Central Bureau of Statistics will continue to publish the usual statistical returns and tables and such other reports, etc., as may be considered necessary.

In some respects the statistics of British India have long since attained, both in range and quality, a high state of development. As already explained, they have not been hitherto designed to indicate the economic trend of the people. They require to be suitably altered to meet this need. Some additions have to be made, gaps in existing statistics filled and inequalities remedied, so that the whole may form a single thoroughly co-ordinated and harmonious system for the future.

103. The statistics collected from year to year should, we think, be reviewed once in five years and all doubtful points examined. So far as statistics of production are concerned, such a review will enable an examination to be made of the results of good and bad years collectively and make it possible to arrive at conclusions based upon the averages for the quinquennial period. In regard to wages and prices, the figures of five years can be put together and compared with those of the previous quinquennium with a view to observe the trend of wages and prices.

As regards statistics of income and wealth, generalizations might be made from the data collected during the quinquennial period. Similarly, the conditions of specific classes of the population brought to light by enquiries into other matters, such as, indebtedness, unemployment, etc., might also be reviewed.

These reviews will be prepared, in the first instance, by the provincial statistical authority and eventually by the Director of Statistics. The advisory bodies should have opportunities of recording their opinion on the reviews before they are taken into consideration by the respective Governments. Similarly, an annual review of the economic condition should

also be published. This may be done conveniently at the time of the discussion of the succeeding year's budget in the Legislature. Summaries of the budgets and the essential statistics indicating the economic condition of the people and the discussions thereon might be published in a convenient form for the use of the public.

104. In order to help the people to overcome their anti-economic habits and traditions, it will be necessary to undertake a certain amount of educative propaganda.

We have proposed that statistics of agricultural and miscellaneous production should be published in every village (paragraph 52). We think that statistics relating to all other forms of production in a village should be supplied to the village accountant to be published along with figures of agricultural production. A simple form showing production of all kinds from year to year may be prescribed. This form might be pasted on a small wooden board which should be hung up in some conspicuous place in the village, e.g., the village *chaupal* (meeting place). If the revenue officers and officers of the statistical department draw the attention of the villagers to these figures when they happen to visit a village and explain to them the significance of the statistics, they will doubtless arouse an interest among the people in the economic aspect of their own life. At the same time, the association of local committees, *panchayats*, etc., with the work of collecting statistical data (paragraphs 91 and 97) will have an educative value. On the other hand, the review of annual statistics by advisory bodies will enable them to direct the attention of the people, through the press and from the platform, to the more patent economic deficiencies and to measures which may be adopted for removing them.

Such propaganda will greatly help the country to obtain the fullest benefit derivable from the scheme of economic survey which we propose in this report.

105. Statistics of production are of as much importance for local Economic studies by improvement as they are for national development. We consider it desirable that the rural population, i.e., the population of villages which contain an appreciable number of literate inhabitants, should be instructed in the use of elementary statistical data relating to production, income and cost of living, so that they may gradually imbibe the practical lessons which such data convey. A suggestion has been made that the villages should, with their own agency and at their own cost, undertake the work of collecting economic data concerning production, income, wealth, expenditure and indebtedness and of maintaining a record of purchases and sales effected in the village with persons from outside the village. Such studies are maintained with beneficial results in some of the villages of Japan in which production figures calculated by the village officials are exhibited graphically on charts which are hung up in the village hall or school. Many of those villages have increased their production by mass-co-operation and by emulating the example of more favourably situated villages. We understand that there is a record in that country of villages which under the advice of experts have increased their production four-fold or more in a little over twenty years. The consensus of opinion, however, is that under present conditions the suggestion cannot be thought of in British India on any appreciable scale, and that any attempt to saddle the villages with a share of the cost of the enquiry is likely to jeopardize the whole scheme. But there will be no harm, in our opinion, if we aim at inducing villages to share the cost

when they begin to realize the benefits of the survey, or inviting them to take over the whole enquiry concerning their respective areas, when they feel they can do so. In the meantime, the proposals which we have already made for associating local committees with inspectors and investigators (paragraphs 91, 97) and the publication of the figures of production, etc., in the villages will go a long way to arouse interest in the subject and to educate the villagers in the benefits of a village economic survey. Such opportunities of self-improvement may bring to light many unsuspected sources of will and capacity in the rural population.

106. The Indian States, many of which do not maintain statistics according to any accepted standards, are so interspersed with British territory that they will prove a handicap in any effort at scientific measurement of the economic conditions of the country as a whole. These States contain two-fifths of the total area and between one-fourth and one-fifth of the total population of India. We are aware that some of the States maintain statistics almost as complete as those prepared in British India, but they are only notable exceptions. In their own interest and that of India as a whole, all the States might be invited, as they have been in the past in regard to the population census, to undertake similar economic surveys and join British India in a common organization for the collection of statistical data on an uniform basis for the country as a whole. We understand that the statistical department of the Government of India has been training officers for Indian States from time to time for statistical work. We hope that the States will be willing to co-operate.

107. We are of opinion that it is necessary to make an early beginning with the economic survey. It is recognized by economists that such investigations are not expected to give minutely accurate results and that the primary value of statistics is usually due to relative rather than to absolute accuracy. While always aiming at the greatest possible accuracy, we should be content, in the earlier stages of the survey, with approximate figures, in all cases in which it may not be possible to obtain a correct count. Naturally, the information collected at first will be somewhat imperfect, but from year to year the public will become familiar with the processes, interest in these investigations will be roused, the growth of public opinion will ensure a steady advance, and the data will become more and more accurate.

CHAPTER IX.

Scheme of Economic Survey—(concluded).

ESTIMATE OF COST.

108. An estimate of the cost of a new scheme of this character must be only approximate. The precise requirements as regards staff and contingent expenditure can only be determined in the light of actual experience. We have examined some of the figures which give the expenditure incurred on similar work in the Dominions and foreign countries but have found the conditions so different and the details available so meagre that we could derive no direct guidance from them. We attempted to collect some data in the course of our tour in the provinces but found that, except in the Bombay Presidency, the local officers were reluctant to commit themselves to any definite scheme or figures without the authority of their respective Governments. They in effect stated that unless the policy was first laid down and accepted, they could not enter into the question of costs. But notwithstanding this attitude, reasonable in the circumstances, several official witnesses gave us much helpful information. The question of cost is a matter of expediency. If more money can be found, a more satisfactory scheme can be evolved and the results we have in view can be achieved sooner. The estimates worked out in the following paragraphs, though admittedly rough, will, we hope, be found to be near enough to enable a satisfactory start to be made in the direction of a detailed economic survey.

109. The expenditure required for a Central Bureau of Statistics may be estimated as below :—

Designation.	Pay.	Average Pay.	Annual Cost.
	Rs.	Rs.	Rs.
Director of Statistics	2,500—50—3,000	2,725	32,700
1 Assistant Director	1,500—50—2,000	1,725	20,700
1 Assistant Director	1,000—50—1,500	1,225	14,700
1 Superintendent	500—25—700	590	7,080
20 Clerks	200—8—296	243	58,320
20 Clerks	100—6—196	143	34,320
10 Clerks	75—5—150	109	13,080
10 Peons	16 each	..	1,920
1 Daftari	25	..	300
1 Jamadar	20—1—25	22	264
Stationery and Printing .. ..	..	..	20,000
Travelling Allowances and Contingencies.	..	..	16,616
Total .. ..	..	..	2,20,000

An additional grant of Rs. 1,00,000 may be necessary for the initial equipment of the new Bureau, including a library and some time-saving appliances of the modern type used in the work of statistical compilation.

The existing office of Deputy Director of Statistics, which now forms a section of the office of the Director-General of Commercial Intelligence, will be absorbed into the new Central Bureau. Owing to the amalgamation of the Statistical Department with that of Commercial Intelligence under the retrenchment scheme, we have not been able to ascertain the actual cost of the former office, but we understand that the share of the cost debitable to the present Statistical section would be about Rs. 1,30,000 exclusive of the cost of printing. Moreover, the work of that office is said to occupy half the time of the Director-General of Commercial Intelligence and allowance has to be made for the share of the net cost of printing. With these additions, it would be safe to put down the total present expenditure at Rs. 1,75,000. This amount should be deducted from the cost of the new Central Bureau of Statistics given in the above estimate. The difference or net additional expenditure will probably be not much more than Rs. 50,000 per annum, or including the fees, etc., for members of the Central Advisory Board, say Rs. 75,000. As remarked above, a sum of Rs. 1,00,000 will be needed, in addition, for initial equipment, and, as will be explained later, a quinquennial outlay of about Rs. 25,000 will be required for periodical surveys; thus making a total initial outlay of Rs. 1,25,000 which should be available for expenditure in the first two years.

110. We give below an estimate of the probable cost of a Provincial Bureau of Statistics for a province of the size of the Punjab, which, according to the 1921 census, had a population of 20,678,393 souls :—

Designation.	Pay.	Average Pay.	Annual Cost.
	Rs.	Rs.	Rs.
Provincial Statistician	2,000—50—2,500	2,225	26,700
1 Personal Assistant	1,000—50—1,500	1,225	14,700
5 Divisional Assistants	300—25—500— 25—800.	525	31,500
1 Superintendent	200—10—350	268	3,216
30 Clerks	50—4—100	73½	26,460
10 Divisional Assistant's Clerks ..	50—4—100	73½	8,820
16 Peons	15 each	..	2,880
1 Jamadar	20	..	240
1 Daftri	20	..	240
Travelling Allowances .. ..	..	..	8,000
Stationery, Printing and Contingencies	..	..	27,244
Total .. ..	..	..	1,50,000

A provision of Rs. 50,000 should be made for a library and for card punching and electric tabulating machinery. The requirements will vary with the size and conditions of each province. This estimate does not take into account the possibility of the Labour offices in Bombay, Madras and Burma being absorbed in the proposed Provincial Bureau (paragraph 100) or of the amalgamation of the Office of Director of Land Records with the Bureau (paragraph 101). If such absorption or amalgamation be found feasible in any province, the cost will be reduced to a corresponding extent. The resulting saving in the latter case may amount to as much as Rs. 30,000 or Rs. 40,000 per annum. We have chosen for our illustration a concrete case, namely, the province of the Punjab, because one of the members of our Committee is intimately acquainted with the details of its revenue administration.

111. The additional staff needed in the districts for the compilation of statistics of agricultural production will be one Establishment in the districts — Agricultural Production. clerk on Rs. 40 per mensem in each *tahsil*. The cost for the 124 *tahsils* of the Punjab will be $40 \times 12 \times 124 = \text{Rs. } 59,520$. Our suggestion to increase the number of crop experiments may involve some additional expenditure. It is somewhat difficult to estimate this increase until the extent of the multiplication of crop experiments has been determined. It will vary from province to province. Assuming that the work necessitates the addition, according to the advice of Mr. C. A. H. Townsend, C.I.E., I.C.S., an expert Punjab witness, of one Deputy Director on Rs. 250 and some five Agricultural Assistants on Rs. 60 each, one operating in each Revenue Division, the total cost in a major province should not exceed Rs. 10,900 per annum. These assistants would be available for other duties when they are not performing crop experiments. Similarly as a result of the assistance which this new staff will render during the greater part of the year, the existing staff of the agricultural department might be called upon to carry out a larger number of crop experiments than they are now able to do.

112. We have stated in a preceding chapter that the staff needed for ascertaining annually the pastoral and fish production, Pastoral, Cottage Industries, etc. and the production from cottage industries will be one Inspector for every *tahsil* for the first two years and two for every district thereafter. The pay of this Inspector should, in our opinion, be Rs. 50 per mensem with a horse allowance of Rs. 25 or Rs. 75 in all. We have been told that young graduates will be available on this pay, but in any case a good selection can be made from among under-graduates who are working as revenue inspectors or from applicants of the type who seek enlistment for that post. The cost per annum would be—

for the first two years $75 \times 12 \times 124 = \text{Rs. } 1,11,600$ per annum ;
 for subsequent years $75 \times 12 \times 29 \times 2 = \text{Rs. } 52,200$ per annum.

The collection of the statistics of production from the Departments of Forests, Industries, Mines, Excise, Salt, etc., should not involve any additional expenditure. The additional cost to the Departments concerned, if any, will be amply compensated by the value of the information added for departmental purposes.

113. We have so far made provision for ascertaining annually the production from all sources. The questions of economic interest remaining to be investigated will be chiefly income, expenditure, wealth and indebtedness. The late Mr. L. J. Sedgwick, Director of the Labour Bureau, Bombay, suggested that information regarding income and expenditure might be collected by obtaining 100,000 family budgets through 1,000 honorary correspondents in a province of the size of Bombay. He thought that the out-of-pocket expenses of these honorary correspondents should be paid, and he estimated the amount at about Rs. 65,000. He would spread the work over a couple of years so that the yearly expenditure might not be more than about Rs. 32,500. We suggest that Provincial Governments should be allowed to employ this method wherever honorary correspondents are available in sufficient number and the Governments concerned are satisfied that the information derived from them would be fairly reliable. Other provinces will have to resort to intensive enquiries through paid investigators.

Intensive studies have been carried out on a fairly large scale and in great detail in the Punjab. The investigators are paid Rs. 150 per mensem and they are given travelling expenses to the place of investigation at the start and travelling expenses back to their headquarters on completion of the enquiry. The Punjab Board of Economic Enquiry has been able to obtain the services of promising graduates in economics at these rates of remuneration. The enquiries, so far as we can see, will require, in addition to general intelligence, a knowledge of the rudiments of economic survey. It is of much greater importance that the investigator should possess plenty of tact to win the confidence of the inhabitants of the tract where he conducts investigations than that he should possess highly scientific or technical knowledge. We think the scale of pay laid down by the Punjab Board of Economic Enquiry will easily enable the Provincial Statistical Bureaux to obtain the services of men qualified for the work. The investigators should, we think, be recruited from graduates or under-graduates who have distinguished themselves, either at college or outside, as regards their capacity and intelligence, or from retired revenue officials of the type of *tahsildars* or *naib tahsildars* who exhibited special aptitude for this kind of work during their service. The cost of the investigating staff will be :—

For rural tracts $29 \times 150 \times 2 \times 12 =$ Rs. 1,04,400

For urban tracts $29 \times 150 \times 12 =$ Rs. 52,200

Total Rs. 1,56,600

114. The collection of prices and wages other than those prevailing in large industrial establishments will be attended to by the existing revenue agency and will involve no additional expenditure, but a sum of Rs. 5,000 may be provided for contingencies, in connection with the statistics to be collected annually.

115. The quinquennial wage census and the regular census of the production of large industrial establishments should, we think, be taken in the first year of the survey when the office establishment will not be fully occupied. The

organization of the work of this quinquennial, or rather initial census will probably take up the first three months of the year. The census itself should not take more than three months and the compilation of statistics, say, six months. If this suggestion is adopted, the first initial census should not cost very much by way of additional establishment. It will only be necessary to provide a small amount for contingent expenditure. But if it is found that the establishments of the Central and Provincial Bureaux are fully occupied in the first year or if it is found necessary for other reasons to postpone the detailed census to a subsequent year of the quinquennium, the additional establishment needed will be comparatively small. Three or four additional clerks in each Provincial Bureau should be able to cope with the work of issuing schedules and compiling the information received from the Director of Industries. In some places, it may be found necessary to employ additional factory inspectors to assist the managers of factories in filling up the forms. Provision will also have to be made for stationery and printing. There are no data on which an estimate might be based, but we think that a provision of Rs. 25,000 in the Central Bureau and of about Rs. 10,000 in each province will probably meet the requirements. The industrially advanced provinces will of course have to spend proportionately more but others will be spending less.

The census of wages, other than those prevailing in large industrial establishments, will be taken through the Revenue Departments. Such periodical censuses of rural and other wages have been conducted in the past by the Directors of Land Records. About Rs. 10,000 may be provided for contingent expenditure. Altogether under all heads referred to in this paragraph, the total provision needed every five years may be taken to amount roughly to Rs. 25,000 in the Central Bureau and about Rs. 20,000 in a Bureau for a province of the size of the Punjab.

116. We are of opinion that before starting work, the Director of Training of Staff. Statistics should hold a conference with the officers appointed as Provincial Statisticians, for the purpose of determining the lines on which the work is to be conducted. The Provincial Statisticians should in their turn spend some time in explaining the methods to their Assistants in the respective provinces and the inspectors and investigators to be employed should undergo a course of training for a couple of months at the headquarters of the province, before they are called upon to begin the work. For this purpose we would recommend the provision of a sum of Rs. 50,000 in a province like the Punjab and we think that this training should be given in the year preceding that in which the work of the economic survey is to be started. Presuming that our proposals are accepted and that orders are passed by the month of December 1925, we would suggest that the training be undertaken and completed between January and March next and that regular work be started from the 1st of April, 1926. The financial provision for training should in that case be made during the current year.

117. We think it would be a great advantage if some of the Assistants Foreign Training for to Provincial Statisticians could be sent out to Assistant Statisticians. foreign countries, particularly the United States of America, to study the methods of enumeration and statistical work followed in those countries. We would suggest that two Assistants be deputed in this way from each province in the first two years. Nine months training would probably suffice. By this measure, every major

province will have provided itself with one or two trained Assistants by the beginning of the third year. The question whether any further batches should be sent out may be considered thereafter with reference to the experience gained in the interval. The cost of deputing one Assistant to America would be :—

	Rs.
Passage both ways	2,500
Pay and allowances of the Assistant for one year at Rs. 500 per mensem	6,000
Total ..	8,500

For two men the charge will be Rs. 17,000. This might be treated as part of the initial expenditure of the survey.

118. Allowance for stationery and contingencies will have to be made for the staff of inspectors employed for ascertaining production as well as for investigators engaged in intensive enquiries. Under contingencies, provision should be made also for the extra staff needed to replace men absent through sickness or leave. The total estimate under this head may be placed at Rs. 40,000 distributed as follows :—

	Rs.
Work connected with production	20,000
Work connected with intensive enquiries	20,000

119. The recurring yearly expenditure to be incurred in a typical Provincial province like the Punjab is summarised below :—

Particulars.	Cost.	Total.
	Rs.	Rs.
1. Provincial Bureau .. .. .	..	1,50,000
FOR PRODUCTION STATISTICS.		
2. <i>Tahsil</i> clerks for compiling agricultural and other statistics	59,520	..
3. Inspectors for collecting statistics of products of pastoral and cottage industries, etc.	52,200	..
4. Additional staff for crop experiments	10,000	..
5. Stationery and contingencies	20,000	..
Total for collection of production statistics ..		1,41,720
FOR INTENSIVE ENQUIRIES, ETC.		
1. Investigators	1,56,600	..
2. Stationery and contingencies	20,000	..
3. Annual prices and wages statistics	5,000	..
Total for intensive enquiries		1,81,600
Total yearly recurring expenditure		4,73,320

120. In the first quinquennium beginning with the detailed survey, the following extra expenditure would be necessary in addition to the yearly outlay just mentioned :—

Particulars.	Cost.	Total.
	Rs.	Rs.
1. Training of Staff	50,000	..
2. Deputing Assistants for training in foreign countries.	17,000	..
3. Quinquennial expenditure on a census of large industries and of wages.	20,000	..
4. Equipment	50,000	..
5. Extra annual expenditure for ascertaining production from pastoral and cottage industries, etc., for the first two years—Rs. 59,400 × 2 (para graph 112).	1,18,800	2,55,800
		o. say Rs. 2.5 lakhs.

Thus for a province of the size of the Punjab with a population of 20,678,393, the yearly recurring expenditure will be Rs. 4,73,320 and the initial expenditure, Rs. 2.5 lakhs practically spread over two years. This gives a rate of Rs. 23 per mille of population in the former case, and about Rs. 12.4 per mille for two years in the latter. The average expenditure per annum for the quinquennium may be taken at Rs. 25.5 or, say, in round figures, Rs. 25 per 1000 persons.

121. Taking the cost for other provinces at the same rate as for the Punjab, namely Rs. 23 per 1000 of population for yearly recurring expenditure and Rs. 12 per 1000 for equipment, training, etc., we arrive at the following figures for the several provinces of British India :—

Name of Province.	Recurring annual expenditure.	Additional initial expenditure.
	Rs. lakhs.	Rs. lakhs.
Bengal	10.74	5.79
United Provinces	10.44	5.62
Madras	9.73	5.25
Bihar and Orissa	7.82	4.21
Punjab	4.73	2.55
Bombay	4.45	2.49
Central Provinces and Berar	3.20	1.73
Burma	3.04	1.64
Assam	1.75	.94
North-West Frontier Province .. .. .	.52	.28
Other Minor Tracts —including Ajmer-Merwara, Delhi, Baluchistan, Coorg, and Andamans and Nicobars.	.37	.20
Total ..	56.79	30.81

These figures merely give a rough indication, but by no means an accurate one, of the expenditure to be incurred in each province. Our estimate is on the basis of population. Detailed estimates have to be worked out for each province separately. But the conditions in individual provinces will vary. In densely populated provinces like Bengal, the United Provinces, Madras and Bihar and Orissa, it may be possible to conduct the survey with a proportionately smaller staff. Moreover, local organizations in some of the provinces may afford facilities which do not exist in the Punjab. The total expenditure in these provinces may not go nearly so high as the amounts given in our estimate.

122. We have recommended in paragraph 54 that special arrangements will be necessary for ascertaining agricultural production in tracts which are under permanent settlement. For reasons stated there, it is impossible to estimate what additional cost the measures to be adopted may involve. It is possible that the staff of inspectors intended for ascertaining the production of cottage industries and miscellaneous pastoral production may, with some additions, be able to cope with this extra work. If this staff is doubled and no reduction is made in the agricultural production section after two years, it will mean a permanent addition of Rs. 1,11,600 per annum for 29 districts or about Rs. 88,500 a year for a province like Bengal where four-fifths of its 28 districts are under permanent settlement. Owing, however, to the uncertainty of the amount which will be needed in each of the provinces which fall under this class, we have made no provision in our estimates. But whatever additional expenditure may be found necessary in this connection must be treated as a local charge.

123. The cost of the Central Bureau, in addition to the expenditure now incurred (paragraph 109), will be as given below :—

	Rs.
Yearly recurring expenditure	75,000
Initial equipment	1,00,000
Quinquennial outlay	25,000

Total expenditure on equipment, etc., to be incurred
in the first two years of the quinquennium .. 1,25,000

Counting these figures with those given for the provinces in paragraph 121, the total estimated cost of the scheme, for British India as a whole, will be a yearly recurring outlay of Rs. 57.54 lakhs, and an initial outlay of Rs. 31.86 lakhs, the latter sum to be expended in the first two years. The yearly average of the total outlay, for British India as a whole, for the first quinquennium, will be Rs. 63.91 lakhs.

124. The cost of the Provincial Bureau and the expenditure on collecting statistical data in the districts should in the ordinary course be met by the Provincial Governments. The Central Statistical Bureau would of course be financed by the Central Government. In view, however, of the financial stringency

in the provinces, we venture to suggest that the Central Government may meet, for the first five years, half the expenditure to be incurred in the provinces under this scheme.

125. The following is a summary of the financial proposals under Abstract of Financial the scheme :—
Proposals.

	Rs. Lakhs.
Recurring yearly expenditure by the Central Government .. .. .	.75
Recurring yearly expenditure in the Provinces ..	56.79
<hr/>	
Total yearly recurring expenditure by both Central and Provincial Governments	57.54
<hr/>	
Additional expenditure for equipment, training, etc., in the first quinquennium to be expended practically in the first two years—	
Central Government	1.25
Provincial Governments	30.61
<hr/>	
Total ..	31.86
<hr/>	

If the Central Government bears half the cost of the Provincial Establishments and half of the initial additional expenditure, the share of the respective Governments will be as follows :—

	Rs. Lakhs.
By the Central Government :—	
(1) Total initial outlay in the first two years 1.25 + 15.31	16.56
(2) Recurring yearly outlay .75 + 28.40 ..	29.15
By the Provincial Governments collectively :—	
Total initial outlay in the first two years ..	15.31
Recurring yearly outlay	28.40
<hr/>	

126. We would have suggested that each municipal corporation or committee should bear, from the commencement, at least a portion of the cost of the economic survey carried out within its jurisdiction, had we not been faced with a universal lament that the local bodies were as a rule in financial difficulties and would be unable to make any immediate contribution. According to the existing law, an economic survey obviously comes within the scope of the objects on which municipal funds might be legitimately expended. The municipalities already bear a substantial share of the cost of the population census. We have had several witnesses before us who thought that it would not be unreasonable to ask the municipalities to share this expenditure. The District Boards might also be

Ultimate Transfer of
Cost to local bodies.

expected to bear at least a share of the burden, but in their case too we have been invariably confronted with representations that they were in financial straits. We think that the question of transferring a share of the cost of the survey to the local bodies should be kept in view. In course of time, villages may offer or may be induced to collect the necessary statistical data with their own agency and at their own cost (paragraph 104). And it is possible that some of the provinces might adopt the scheme of collecting family budgets through honorary correspondents, suggested by the late Mr. L. J. Sedgwick for Bombay. When any of these proposals begin to materialise, a portion or the whole of the local expenditure may be saved, and the burden on the Central and Provincial Governments correspondingly reduced.

CHAPTER X.

Summary of Views and Recommendations.

The following is a summary of our views and principal recommendations :—

Preliminary.

(i) There is a wide-spread desire in the country for an economic enquiry. (Para. 8).

Object of Economic Survey.

(ii) The object of an economic survey is to collect statistical data and information which would facilitate the shaping of the economic policies and the solution of current economic problems with a view to meet existing deficiencies, improve resources and increase the country's prosperity generally. (Paras. 9-11).

Tests of Economic Condition.

(iii) The chief tests of economic condition are income (including production), consumption (including cost of living), and wealth. An enquiry into the economic condition of the people should fall under two main heads, namely—

(a) Tests applicable to the provinces and the country as a whole :

Production, National Income and National Wealth.

(b) Tests applicable to classes of people or local areas :

Individual income,

Individual wealth,

Collective wealth,

Consumption,

Wages and prices,

Indebtedness, etc. (Paras. 12, 15, 17).

Existing Statistical Material.

(iv) In the circumstances of British India the existing statistical material may be considered under three main classes, *viz.* :—

A.—*General statistics other than production*, comprising finance, population, trade, transport and communications, education, vital statistics, migration, etc.

B.—*Statistics of production*, consisting of agriculture, pasture and dairy farming, forests, fisheries, minerals, large-scale industries, cottage and minor industries.

C.—*Estimates of income, wealth, etc.*, covering income, wealth, cost of living, indebtedness, wages and prices.

Statistics falling under class A are more or less complete, those under class B are satisfactory in some respects but incomplete or totally wanting in others, while no attempt has been made to collect those under class C on a comprehensive scale. (Para. 25).

(v) Statistics of class A have not been compiled hitherto with an eye specifically to shaping the economic policies of the country. Further improvements to bring them into line with up-to-date statistical systems abroad might be effected with the aid of statistical experts. (Para. 40).

(vi) Complete statistics of production including the total value of production should be collected. (Para. 41).

The existing agricultural statistics, amplified and improved, offer the best means of ascertaining agricultural production. Where a subordinate revenue agency exists for doing this work, no other agency can be usefully substituted for it. (Para. 44).

Detailed suggestions as regards the collection of data relating to agricultural production and the conversion of quantities into values are given. (Paras. 45-52).

In view of the correctness of areas and the detailed information already being collected, it is not considered necessary to have a periodical census of agricultural production; but in its stead a quinquennial review of the data collected from year to year is suggested. (Para. 53).

Detailed suggestions are given for obtaining the value of production from pastoral occupations, dairy farms, forests, fisheries, and cottage and minor industries. (Paras. 55-57, 60).

Departments of Mining and Industries should collect annually statistics of mineral and industrial production, respectively, including values.

A detailed quinquennial census of industrial production is also proposed. (Paras. 58, 59).

(vii) Intensive studies of villages have been carried out in various parts of the country and a large number of family budgets have been prepared but they have been too detached or fragmentary to lead to any appreciable conclusions. (Paras. 61-76).

It is suggested that intensive enquiries should be made every year in limited areas in every district for ascertaining income, wealth, cost of living, indebtedness, etc., of the people. (Paras. 62-66).

The income-tax returns should continue to be published with certain suggested improvements. Approximate estimates of the wealth of individuals should be made wherever possible by the investigators in the course of their intensive enquiries. In the meantime estimates of collective wealth should be prepared for villages, towns, etc., by the inventory method. (Paras. 62, 64).

Cost of living index numbers should be prepared for the principal industrial centres. (Para. 65).

Detailed proposals have been made for the collection of rates of wages of various classes of operatives in industrial establishments, mines, etc., also of persons employed in cottage industries, agricultural labour, domestic service, etc.

A comprehensive quinquennial wage census is also recommended. (Para. 67).

Suggestions are made for the collection of wholesale and retail prices. (Para. 69).

Scheme of Economic Survey.

(viii) For the presentation of results of intensive studies a double classification of the population based both on occupation and income, is suggested. These statistics should be tabulated by administrative units and also by economic zones where necessary. (Paras. 71-72).

(ix) Figures of production of all kinds should be obtained through the departments of Government by engaging additional staff where necessary. The total value of the entire production should be recorded. Wherever it is not possible to obtain actual figures of production, a near approximation may be attempted. (Para. 75).

(x) Every intensive study should as a rule extend over a whole year. Each investigator in rural areas should deal with a group of villages in one assessment or revenue circle. In towns, houses should be selected by a random sample of 1 in 5. Ordinarily these studies should embrace income, expenditure, wealth and indebtedness. (Paras. 77 and 78).

Special enquiries regarding particular phases of economic condition may be made (1) in local areas, or (2) concerning particular classes of people, whenever required by the Provincial Government. (Para. 79).

The staff under the Provincial Bureau will constitute a nucleus to undertake special investigations.

(xi) Data regarding wages in large industries and mines and prices of industrial and mineral production, will be collected by the Industries and Mining Departments, respectively, and similar particulars relating to rural and other wages and prices wholesale and retail by the Revenue Department. (Para. 81).

(xii) All statistical work should, as in the Dominions, be co-ordinated and centralized, the aim being to provide a common purpose and give the statistics an economic trend by means of a central thinking office. (Para. 82).

(xiii) The whole statistical organization requires legal sanction to stabilize it as well as to arm the officers of the departments with the necessary powers to compel people to supply any information which may be specified, while guaranteeing the maintenance of secrecy in respect of the information or particulars so supplied. (Para. 83).

(xiv) A Central Statistical Bureau should be established at the headquarters of the Central Government to take the place of the Statistical Section of the office of the Director-General of Commercial Intelligence for the purpose of centralization of statistics, particularly those of economic significance. It should be presided over by a Director of Statistics with the requisite staff. The Director should be able, in addition, to work as a Census Commissioner for the decennial population census. (Para. 84).

(xv) Every province should have a Provincial Statistical Bureau with a Provincial Statistician at its head and a staff of Assistants, usually one for every revenue division, to supervise the work in the districts. (Para. 85).

(xvi) An advisory body should be associated with each of these bureaux. The existing Publicity Advisory Committee might be strengthened by the addition of the Director of Statistics and three other members with statistical or economic experience, and utilized as an Advisory Body

to the Central Bureau. In every province there should be a Board of Economic Enquiry to advise the Provincial Statistician and, if necessary, to supervise the work connected with economic research. (Paras. 86 and 87).

(xvii) There will be two distinct agencies working in each district for collecting economic data : (1) a staff of inspectors to collect statistics of production other than those furnished by Government departments, and clerks for the compilation of statistics of agricultural production, etc. ; (2) qualified investigators for intensive enquiries.

The former staff will be under the supervision of the Revenue department but controlled in technical matters by the statistical department ; and the latter, while acting under the direct control of the Assistant Statistician will be associated with the Revenue Department in the matter of regulating their relations with the people. (Para. 89).

(xviii) On the scale provided the investigators will be able to collect every year data relating to about 2½ per cent. of the rural and 4 per cent. of the urban population. It is expected that as data continue to accumulate generalizations from them will become more and more reliable. (Para. 96).

(xix) Local agencies in villages, such as, Co-operative Credit Societies and local committees of zemindars, schoolmasters, shopkeepers, etc., should be associated with the inspectors and investigators as far as possible.

The services of superintendents of cottage industries, grazing inspectors, members of the staff of Co-operative Credit Societies and other departments may be utilized when available. (Paras. 91, 97 and 98).

(xx) It is suggested that the labour offices in Bombay, Madras and Burma be absorbed in the proposed Provincial Statistical Bureaux and that the posts of Director of Land Records and Provincial Statistician be amalgamated wherever possible. (Paras. 100 and 101).

(xxi) The publication of an Official Year Book for British India is recommended. The statistics collected should be reviewed quinquennially by the Provincial and Central Bureaux. The results of each year's work should be reviewed and discussed in the legislatures concerned at the time of the presentation of the annual budget. (Paras. 102 and 103).

(xxii) Statistics of production, etc., pertaining to a village should be published in the village and interpreted to the people by the officials of the Revenue and Statistical Departments.

The Advisory Bodies should also direct the attention of the public through the press and from the platform to deficiencies in the economic structure and to measures for removing such deficiencies. (Para. 104).

(xxiii) It is suggested that the Indian States be invited, in their own interests, as well as that of the country as a whole to undertake economic surveys on parallel lines and to join British India in a common organization for the collection of statistical data. (Para. 106).

Estimate of Cost.

(xxiv) The yearly expenditure required for the Central Bureau, over and above the present cost of the Statistical Section of the Commercial Intelligence Office, is estimated at Rs. 75,000. An initial expenditure

of Rs. 1,00,000 would be needed for equipment and a sum of Rs. 25,000 for quinquennial investigations. Rupees 75,000 will be the recurring yearly outlay, and the sum of Rs. 1,25,000 will represent the special outlay required in the first two years. (Para. 109).

(xxv) A Provincial Bureau for a province of the size of the Punjab (population 20,678,393) will require a yearly recurring outlay of Rs. 4,73,000 besides a sum of Rs. 2,55,800 for initial equipment, etc., the latter sum to be expended in the first two years. (Paras. 110-120).

(xxvi) The total estimated cost worked out, on the basis of population, for all the provinces of British India aggregates Rs. 56.79 lakhs recurring and Rs. 30.62 lakhs for expenditure on initial equipment, etc., in the first two years. This is exclusive of the expenditure of the Central Bureau mentioned above. (Para. 121).

(xxvii) The tracts under permanent settlement may require some further expenditure for securing reliable data concerning agricultural production. This will have to be determined for themselves by the Provincial Governments concerned. (Para. 122).

(xxviii) The Provincial Governments should ordinarily bear the entire provincial expenditure but, in view of financial stringency in the provinces, it is suggested that for a period of five years the Central Government may meet half of such expenditure. (Para. 124).

(xxix) If this suggestion is accepted, the cost of the scheme will be as distributed below :—

By the Central Government.

	Rs.
	Lakhs.
Initial outlay	16.56
Recurring yearly outlay	29.15

By all the Provincial Governments collectively.

	Rs.
	Lakhs.
Initial outlay	15.31
Recurring yearly outlay	28.40

(Para. 125).

(xxx) It is suggested that an endeavour should be made to transfer gradually a share of the cost to local bodies and to such villages as may come forward to participate in the work and the financial burden. (Para. 126).

M. VISVESVARAYA,

Chairman.

HARI KISHAN KAUL.

A. R. BURNETT-HURST.

SIMLA,

Dated the 10th August, 1925.

APPENDIX 1.

Material usually collected and published in Foreign countries regarding the Economic Condition of the people.

The material as collected and published in the Dominions may be examined under :—I.—Production—(a) agricultural, pastoral and dairy and farm produce, (b) fisheries, (c) forests, (d) minerals, (e) industries and manufactures ; II.—Labour and Wages ; III.—Trade and Commerce ; IV.—Transportation and Communication ; V.—Finance ; VI.—Education ; VII.—Vital Statistics ; VIII.—Incomes ; IX.—Prices and Cost of Living ; X.—Wealth ; XI.—Indebtedness.

The following details are available :—

I.—PRODUCTION.

(a) *Agricultural, pastoral, dairy and farm produce.*—Agricultural revenue, tenure, number and size of holdings ; area, yield, quality and value of crops (food, commercial, minor, fruits, etc.) ; labour on fields and farms ; wages ; and machinery. Livestock and pastoral products ; value and quantity of flesh, hides, skins, etc. ; fur farming ; number and value of dairy cattle ; quantity and value of all dairy products. Poultry and bees : number of small animals and hives—value of honey, eggs, &c.

(Note.—In South Africa and Canada an annual census of production is carried out. Schedules are distributed in the former by the Police Force under the supervision of the Production Section of the Office of Census and Statistics, while in the latter country they are distributed through rural schools and crop correspondents. In New Zealand and Australia, statistics of agricultural and pastoral production are collected by means of schedules through the agency of the Police Force and Special officers. In New Zealand practically every holding of one acre and over is canvassed personally.)

(b) *Fisheries.*—Total catch of inland and sea fisheries ; value, number and kind of vessels used ; number and capital value of fishing vessels, boats, nets and traps, etc., used ; number of fish canning and curing establishments ; number and sex of persons employed ; salaries and wages in fish canning and curing establishments ; value of exports and imports of fish and fish products.

(Note.—In New Zealand, owners of boats and vessels, employed in fishing are required to furnish returns of the catch. In Canada, statistics are collected by the local officers of the Fisheries Branch, and are checked in the Department of Marine and Fisheries.)

(c) *Forests.*—Area under various kinds of forests ; quantity and value of all forest products ; trade in forest products ; revenue and expenditure of forest departments.

(Note.—Statistics are furnished by the Forest Departments.)

(d) *Minerals.*—Number of working mines and quarries ; total output and its value ; number of employees and their wages ; accidents ; number, kind and power of machinery used ; capital employed ; dividends declared.

(Note.—Departments of Mines and Quarries furnish the statistical information.)

(e) *Industries and Manufactures.*—Capital : value of land, buildings, machinery, implements, tools, etc. ; capital invested. Labour : number, race, adult and child labour, sex of employees, wages and salaries. Establishments : number with details regarding proprietorships and hands employed. Cost of production : quantity and value of raw-materials, etc. Outturn : value and quantity. Fuel and light : quantity consumed, cost of fuel and light. Power : number of engines, horse-power, and kind of power used.

(Note.—Statistics are collected annually in all the Dominions, by means of schedules distributed either by post or through the Police Force and Factory Inspectors.)

II.—LABOUR, WAGES AND PRICES.

(a) *Labour*.—Occupations of the people : number, nativity, sex, distinguishing productive employes in each industry. Trade Unions : number, memberships. Employment and unemployment : applications for employment, demand from employers, persons provided with employment. Trade disputes : strikes and lockouts.

(b) *Wages*.—Index numbers of rates of wages for various classes of labour ; averages of nominal and effective weekly wage rates ; hours of work. Overtime in various industries.

(*Note*.—In South Africa, statistics of wages are collected by the Statistics Department from Trade Unions and Associations and from the Labour Department and employers' associations ; while, in New Zealand and Australia, data are obtained also from the awards of Arbitration Courts. The Labour Department also supplies predominant ruling wages in Agricultural and Pastoral occupations for which no awards are available.)

III.—TRADE AND COMMERCE.

External Trade.—Exports and Imports of merchandise, total trade : movements of coins and bullion ; imports of merchandise and raw-materials used in manufacture entered for home consumption ; exports to and imports from all countries by classes of merchandise, by values, and percentage. Average *ad valorem* rates of duties collected. Exports to and imports from all countries in quantities and values by classes of home produce. Imports (dutiable and free), and exports of home and foreign produce by main classes. External trade by main groups, and degree of manufacture according to origin. Quantities and values of animal and agricultural products.

Internal trade.—Number and storage capacity of grain elevators, shipments of grain by vessels ; trade in livestock and meat ; retail trade in coal.

IV.—TRANSPORTATION AND COMMUNICATION.

Railways—Electric and Steam.—Mileage, capital liability, earnings and operating expenses. Number, and amount of salaries and wages, of Railway employes, and the ratios of the latter to gross earnings and operating expenses. Rolling stock. Commodities hauled as freight : areas of land subsidised or granted to Railways. Railway bonds guaranteed. Cost of construction, working expenses and revenue and capital expenditure on Government Railways. Accidents. Train traffic statistics.

Roads.—Classification of highway and road mileage. Motor vehicles : number, types, revenue from the taxation of the sale, distribution and operation, imports and exports of motor vehicles.

Air Navigation.—Number of firms ; passengers, express and mail, carried ; accidents and injuries.

Canals.—Length ; traffic, tonnage ; expenditure and revenue ; capital expenditure.

Shipping and Navigation.—Sea-going vessels—entered inwards and outwards and cleared. Foreign vessels employed in Coasting trade, etc. Total number and tonnage of all vessels. Vessels built and registered. Revenue and expenditure of the Department of Marine. Number of seamen shipped. Wrecks and casualties.

Posts, Telegraphs and Telephones.—Revenue ; expenses ; pole, line and wire mileage ; employes ; officers ; messages ; amount of money transferred. Radio stations, number, business and cost of maintenance. Operation of money order system, number and total values of postal notes ; issue of postage stamps.

V.—FINANCE.

(1) *Public Finance.*

(I) *Dominion.*—Detailed receipts and expenditure. Inland Revenue. Provincial subsidies. National debt : details of the assets of public debts and gross liabilities ; funded debt payable outside country ; public debt.

(II) *Provincial.*—Revenues and expenditure of the provincial governments, itemized receipts and expenditure ; assets and liabilities.

(III) *Municipal.*—Municipal statistics of principal interest for cities, urban municipalities of 1,000 or 1,000 to 3,000 population. Receipts and Expenditure, (ordinary and extraordinary), assets and liabilities.

(2) *Currency and Banking, Loan and Trust Companies.*

Coinage, composition of gold coinage, circulation of silver and bronze coin. Notes circulation and reserves ; bank note circulation ; circulating medium in hands of public. Development of Banking business : liabilities and assets ; deposits, loans, bank reserves with liabilities ; number and branches of banks ; amount of exchange of the Clearing Houses of Chartered Banks ; Bank amalgamations and insolvencies. Deposits with Government and other Savings Banks. Liabilities and Assets of Trust Companies.

(3) *Insurance.*

Fire insurance in force ; premia received, losses paid, and percentage of losses to premia. Business transacted : cash income and expenditure ; assets and liabilities. Life insurance in force and effected ; assets and liabilities ; cash income and expenditure : life insurance on the assessment plan. Miscellaneous insurance other than fire and life : income, expenditure, assets and liabilities. Government annuities fund ; valuation of annuity ; contracts issued pursuant to the Government Annuities Act.

(4) *Commercial Failures.*

Number, assets, liabilities, causes of failures.

VI.—EDUCATION.

Number of Schools, teachers, attendance, and pupils in various kinds of colleges and schools. (State and private). Vocational and Technical Schools. Teachers and pupils. Receipts and expenditure for Public Education, Public Libraries, Societies, Museums and Art galleries.

VII.—VITAL STATISTICS.

Births, marriages, deaths, and natural increase by sex and age. Illegitimate births ; still births ; marriages, and marriage rates ; conjugal condition of brides and grooms. Nativity of persons married. Deaths and death rates by province and by sex ; infantile mortality by place, sex and age ; maternal mortality by causes of death. Deaths from special causes.

VIII.—INCOME.

In all Dominions, Income-tax returns are available and contain information regarding the number of tax-payers, the total income assessed and the number of tax-payers, according to various grades of income.

IX.—PRICES AND COST OF LIVING.

Index numbers of wholesale and retail prices of commodities usually consumed and other necessities of life, such as food, grocery, rent, fuel, light, sundries, including clothing and boots, etc., are published. Index numbers of the cost of living based upon weighted retail prices are worked out, and the changes in it are

shown with the variations in purchasing power of money. In Canada prices and index numbers of a family budget of staple food, fuel, lighting and rent, in sixty cities, are separately worked out and published.

(*Note.*—Price returns are collected from representative dealers in selected towns ; in New Zealand and Canada also through local factory inspectors and crop correspondents, respectively.

As regards cost of living, a standard regimen is adopted from the various family budgets collected for the purpose and retail price quotations are used in framing the index numbers of the cost of living. Data for house-rents, light and fuel and clothing, etc., are also collected by means of returns.)

X.—WEALTH.

In Dominions the nature of information on wealth varies. Australia and South Africa give little or no information. In New Zealand, the estimates of the private wealth of the Dominion are arrived at on the assumption that the wealth per head of the living population is approximately equal to the average of that left by persons dying. The actual average wealth of deceased persons is obtained by a consideration of the estates certified for stamp duty.

In Canada and Australia, the National wealth is worked out by the 'Inventory method', the basis of which is the valuation of assets item by item, *e.g.*, land and improvements ; live stock ; agricultural, dairying and pastoral implements, and machinery ; manufacturing plant and machinery ; mining properties (including plant and machinery) ; coin and bullion ; private railways and tramways ; shipping ; agricultural and pastoral products ; locally manufactured products ; mining products ; imported merchandise ; clothing and personal adornment ; furniture and fittings, books, etc., and motor vehicles.

XI.—INDEBTEDNESS.

None of the Dominions publishes information regarding private indebtedness. Figures of public debts are available, and have been dealt with under Finance.

APPENDIX 2.

List of publications on production with the nature of information contained in each.

AGRICULTURE.

<i>Publications.</i>	<i>Nature of information.</i>
Quinquennial Report on the Average yield per acre of Principal Crops in India, Commercial Intelligence Department. (Quinquennial.)	Average yield (lbs. per acre) of principal crops—irrigated and un-irrigated—in each province and district of British India.
Estimates of the Area and Yield of the Principal Crops in India—Department of Commercial Intelligence and Statistics. (Annual.)	Area and yield per acre of principal crops in each province during each of the previous ten years; standard or normal yields per acre of crops for which forecasts are prepared.
Report on the Production of Tea in India.	These publications are issued annually as a supplement to the Indian Trade Journal by the Department of Commercial Intelligence and Statistics. The information contained in them is of the following nature :—area; number and area of plantations; production; production (in lbs.) also of cured coffee and dry rubber; persons employed in all three industries in each province or district of British India; quantity of tea available for consumption in India during the previous five years; stock of dry rubber (in lbs.) held in each province; quantity of rubber (raw) exported by sea; import and export of tea, coffee and rubber; prices and wages relating to the tea industry.
Statement relating to area, production, imports and exports of Coffee in India.	
Statement relating to area, production, imports and exports of Rubber in India.	
Agricultural Statistics of India—Commercial Intelligence Department. (Annual.)	<i>Vol. I.</i> —Total area (in acres), classification of the area (in acres), area irrigated and crops irrigated, area under crops and specification of crops in each province; live-stock, ploughs and carts; land-revenue assessments on the area, and population of each province; harvest prices of certain important crops per maund (for five years); average yield (lbs. per acre) of principal crops in each province of British India.
Season and Crop reports, published by the Provincial Departments of Agriculture or Land Records. (Annual.)	<i>Vol. II</i> relates to Indian States. The information available in the Season and Crop reports is as given below :— Average rainfall (in inches) according to season, month or year; total area—cultivated, uncultivated, irrigated, unirrigated, sown, cropped or matured, assessed; areas under different crops, with areas irrigated; classification of area in each district under

Publications.

Agricultural Statistics, published by the Department of Agriculture in Bihar and Orissa and by the Department of Land Records in the Central Provinces. (Annual.)

Tea culture in Assam—Department of Agriculture. (Annual.)

The Economic Progress of the Rural Areas of the Bombay Presidency, (1911-22), by Harold Mann, D.Sc., Director of Agriculture, Bombay Presidency—Poona, Government Central Press, 1924.

The produce of rice land, cost of cultivation, land values and other statistics for calculating the revenue demand, compiled by Maung Tun Myint, B.A., and Maung Say Yen, B.A., (Burma).

Fodder crops of the Punjab.

Nature of information.

forests, etc., area under food grain crops in each district of the Bombay Presidency and its estimated outturn; estimated outturn of "kharif and rabi" crops in parts of 100; total produce of the principal crops; estimated yield of main cereals in cleaned grain (in Bombay reports only); yield per acre (food and non-food crops); normal rates of yield per acre of different crops for each district; average estimate of the actual weight of the total produce in tons; number and sources of water-supply (in Bombay reports only); total number of oil engines, tanks, channels and wells actually used in each district for the purpose of irrigation (in Madras reports only); seasonal factor or condition figures of crops in ryotwari (including minor 'inam') areas as well as non-ryotwari areas, so far as information is available, in parts of 100 (100 denoting the normal crop); harvest prices of staple articles and fodder; agricultural stock, ploughs and carts.

Statistics of area, live-stock, and incidence of land-revenue, statement of transfers of land (Bihar and Orissa only).

Number of plantations; area, yield, persons employed (daily average), for each district.

Special Reports.

Changes in the rural population: area occupied under crop in different seasons, the double cropped area, irrigated area (whatever be the source from which the land is watered); character of crops grown; total amount of produce obtained; money value of the produce from the land in the purchasing power of the population.

Produce of rice land; cost of cultivation; land values and other statistics for calculating the Revenue demand.

Classification of the food of cattle so far as it is derived from crops; quantity of grain, cotton seed, oilcake and fodder given to cattle in the various districts of the Punjab; areas of grazing land, etc., number of live-stock; area (in acres) of fodder crops.

Publications.

Names of field crops grown in Madras, Central Provinces, Burma—(published by the Department of Agriculture as Bulletins. In the United Provinces of Agra and Oudh it is published by the Department of Land Records).

Nature of information.

A complete list of field crops grown in all the four provinces; area and statistics of outturn.

PASTORAL.

Agricultural statistics—Commercial Intelligence Department. (Annual.)

Report on the census of Live-Stock, Ploughs and Carts in India—Department of Statistics. (Quinquennial.)

Cattle Census—Director of Land Records and Agriculture. (Quinquennial.)

Notes on the cattle of the Bombay Presidency, by Rao Sahib G. K. Kelkar—Department of Agriculture, Bulletin No. 75.

A cattle survey for the Nagpur and Berar Divisions.

Notes on wool in India, by A. H. Silver and J. K. Mehta—Government of India.

Number of live-stock divided into bovine, ovine and others, for each province, in the last census and as compared with the preceding census.

Number of live-stock, etc., in each province in British India as ascertained by a census held quinquennially.

Statistics of agricultural stock, ploughs and carts.

Fluctuations in prices of agricultural cattle; quantity of bye-products of food grain crops available for fodder; area in acres under fodder, average outturn of dry fodder per acre, total fodder available for consumption, fodder available per head of cattle per year and per day; prices of various breeds of cattle in different tracts.

Area open for grazing and the number of cattle therein; composition of the fodders and other feeding stuffs grown in Nagpur and Berar divisions, number of agricultural stock.

Estimate of total production of wool in India; yield per sheep for each province; average price for East Indian wool in the Liverpool market from 1911 to 1917; particulars of imports and exports of raw wool into India by sea and land from 1912 to 1918; import value of manufactured woollen goods into India by land; imports and exports of manufactured woollen and worsted goods into India by sea (quantity and value); number of sheep in each province of British India.

DAIRY AND FARM PRODUCTION.

Mandalay Milk Supply by F. J. Warth, M.Sc.—Department of Agriculture, Burma, Bulletin No. 15.

Yield per day and per milking cow of some herds in Mandalay; total cows; milch cows; yield (in lbs.)—total—per cow in Mandalay town (herd samples); yield per day from India half bred and Burma cows in Mandalay town; rate and average quantity sold.

Publications.

Report of the Committee appointed to consider measures for the improvement of the milk supply in large cities in the Bombay Presidency (1916).

Quinquennial Review of Forest Administration in British India—Department of Revenue and Agriculture, Government of India. (Quinquennial.)

Annual Return of Statistics relating to Forest Administration in British India—Department of Revenue and Agriculture, Government of India. (Annual.)

Progress Report on Forest Administration—Department of Forests. (All provinces.) (Annual.)

India's Forest Wealth, by E. A. Smythies.

Nature of information.

Quantity of milk available in large towns (daily supply) ; retail price of milk (lbs.) per rupee ; estimates of other sources of demand of milk apart from the demand for domestic consumption ; annual yield of milk, butter, fat ; total cost of feeding and feed cost to produce 100 lbs. of milk and butter.

FORESTS.

Area (reserved, protected, unclassed, state) ; area closed and open to grazing ; area of plantation and the cost of the year's work ; outturn of forest production (timber, fuel, and minor produce) ; exports of forest produce (quantity and value) and estimated value of forest produce given away free or at reduced rates, for each province for quinquennium.

It contains the same information as is given in the quinquennial report with the difference that the statistics relate to the year under report only.

Area (reserved, protected, unclassed, leased, etc.) ; area closed and open to grazing ; areas of artificial production and afforestation ; outturn (in thousands of cubic feet, solid) of timber and fuel ; outturn of minor forest produce ; abstract showing the value of live-stock and dead-stock ; imports of timber, firewood and bamboo ; estimated value of forest produce given away free or at reduced rates ; account of timber, fuel, bamboos and minor forest produce cut or collected by Government agency and brought to depots, sold locally or otherwise disposed of. The information usually relates to each district of the province concerned.

Special publications.

Area, output and value of forest produce (major and minor) for various provinces ; produce given away in concession or free grants (quantity and value) ; imports into and production in India of rosin and turpentine since 1907 ; exports of rosin and turpentine from India ; exports of myrabolams, and of lemon grass, citronella and other oils, from Indian ports (quantity and value).

Publications.

The Indian Forest Records, Vol. VI, Part II, Statistics compiled in the office of the Sylviculturist, Forest Research Institute, Dehra Dun, during 1915-16—Government of India.

Indian Forest Records—A note on some statistical and other information regarding the teak forests of Burma, by R. S. Troup, I.F.S., F.S.I., Imperial Sylviculturist (1911).

Report on Madras Fisheries by G. F. S. Christie, I.C.S.

A statistical analysis of the Fishing industry of Tuticorin (South India) by James Hornell, F.L.S., Report No. 3—Madras Fisheries Bulletin, Vol. XI, 1917—Department of Fisheries, Madras.

Statistics and information, West and East Coast Fisheries, Madras—Bulletin No. 9, Department of Fisheries, Madras.

Annual Report of the Department of Fisheries, Bengal. (Annual.)

Statistics of Fish imported into Calcutta—Bulletin No. 13, Department of Fisheries, Calcutta.

Report on Fisheries of Eastern Bengal and Assam, by K. C. De.

Nature of information.

Rate of growth and average outturn per tree; average outturn (in cubic feet) of different sizes of deodar. Similar statistical data were compiled in the Indian Forest Records, Vol. VI, Part V, 1918.

Area in square miles of teak-bearing forests, number of teak trees per 100 acres of teak-bearing forests; statistics regarding rate of growth in girth; average teak growing and dead trees per 100 acres of teak-bearing forests; statements showing rate of growth of teak in natural forests—exploitable age, size and other particulars; statistics regarding yield and outturn of Burma teak forests.

FISHERIES.

A statement showing the principal fish found in the waters of the Madras coast. Wholesale prices of some species of fish.

Average yearly weight and value of the 36 most important local fishes; average monthly catches during 4 years (1911-15); off-shore and in-shore lining at Tuticorin; average wholesale prices ruling at Tuticorin for forty-one species of fish; number and distribution of fishermen. List of the principal food fishes caught at Tuticorin. Average monthly and annual quantity of the produce obtained by the chief fishing methods employed at Tuticorin.

Fish curing yards; number of ticket holders; markets; average quantity of fish cured; number of boats engaged in fishing.

Fish traffic (imported into Calcutta in maunds or lbs.).

Total imports of fish into Calcutta via all routes.

Statistics relating to inland fish traffic; table comparing the average prices of the better varieties of fish with the prices 20 years ago and with the prices of goats meat.

MINERALS.

Publications.

Report of the Chief Inspector of Mines in India—Department of Mines, India. (Annual.)

Mineral production of India—Department of Geological Survey of India. Records of Geological Survey of India, Part II. (Annual.)

Quinquennial review of the Mineral production of India, published by the Director, Geological Survey of India. (Quinquennial.)

Statistics relating to the Production and Consumption of Salt in India—Commercial Intelligence Department (now published as a supplement to the Indian Trade Journal). (Annual.)

Nature of information.

Number of mines regulated by the Indian Mines Act ; average number of persons employed daily ; output of minerals during the year under report. Analysis of figures relating to output of coal and coke. Number of mines opened and closed during the year under report. Fluctuations in the output of the principal minerals raised from mines classed under the Indian Mines Act.

Total value of minerals (forty) for which returns of production are available ; quantity and value of various minerals ; building materials, etc., for various provinces of India ; special statement regarding output, prices, export and import of coal and average number of persons employed in coal-fields ; export of manganese, saltpetre ; import of kerosene oil ; mineral concessions granted ; classification of licenses and leases.

Output and value of minerals for which returns of production are available ; amount and value of imports of minerals and of products obtained directly from minerals ; value of imports of products of a more finished nature manufactured almost entirely from minerals or mineral products ; production of chromite and coal. Average pit's mouth value (per ton) of coal extracted from the mines in each province ; comparison of the Indian and Japanese coal statistics ; relation of consumption to production of coal ; coal consumed on Indian Railways ; coal carried for foreign railways ; imports and exports of coal ; output of Indian coal by provinces ; accidents in coal-fields ; number of persons employed in coal industry ; output of coal per person employed at Indian mines, and below ground ; output of copper ; exports and imports of copper and brass ; production of diamond, etc.

Manufactures, issues, imports, exports, and movements of salt in India.

Publications.

Report on the Production and consumption of coal in India—Commercial Intelligence Department, (Supplements to the Indian Trade Journal). (Annual.)

A Bibliography of Indian Geology and Physical Geography, with an Annotated Index of Minerals of Economic value, by T. H. De La Touche, published by Order of the Government of India, 1918.

Sketch of the Mineral Resources of India, by T. H. Holland, D.Sc., F.R.G.S., Director, Geological Survey of India, 1908.

India's Mineral Wealth, by J. Coggin Brown (Oxford University Press, Bombay), 1925.

Note on the mineral production of Burma, compiled by the Financial Commissioner, Burma, and published each year.

Nature of information.

Production of coal in each province and State of India, and at each time; total production and consumption of coal in India; average price of Indian, Welsh and Natal Coal at Calcutta, Bombay and Karachi; average number of persons employed daily in the coal mining industry in India; quantity and value of foreign coal imported into British India, and of Indian coal exported, and the supply available for India; quantity of coal, wood and oil fuel consumed on Indian Railways; list of Joint-Stock coal companies at work in India with their financial position; comparative statement of the production and consumption of coal in India and Japan.

Value of twenty-five minerals extracted in India. A detailed catalogue of all the minerals in various provinces. The note under each mineral gives the output, but not in all cases. The minerals included are those for which approximately trustworthy returns are furnished.

Total value of minerals for which regular returns of production are available. The work gives much information regarding the production, or imports and exports, of coal (Gondwana and Tertiary), chromite, gold, manganese, tin ore, mica, salt, rock-salt, salt-petre, jadestone, petroleum, kerosene, etc.

Number of mineral concessions granted. Average annual value of certain Indian minerals produced during the periods 1898-1903, 1904-1908, 1909-1913, 1914-1918 and in 1919, 1920 and 1921. The value represents either export values or is based on prices without duty.

Details of the production of coal (Gondwana and Tertiary), iron-ore, manganese, petroleum, salt, tin; and exports of mica, manganese, etc., are given for the years 1917-1922.

This publication gives the figures for non-Act mines, as well as those coming under the Indian Mines Act.

Statement showing the quantity and value of amber, building materials and road metal, china clay, gold, iron-ore, petroleum, platinum, etc., and statistics of labour employed in production of the above minerals are given.

Publications.

The mineral resources of Burma, by N. M. Penzer—(George Routledge and Sons, 1922).

Nature of information.

The average annual output (for 1915-1918) in respect of precious stones, lead and silver ore, tin, tungsten ore, salt, antimony and petroleum are given, together with imports and exports of precious stones, tin, etc., and an estimate of the consumption of minerals in Burma, compared with production.

LARGE SCALE INDUSTRIES.

Large Industrial Establishments in India—Commercial Intelligence Department. (Annual.)

Number of establishments and persons employed in the principal industries in each province and in the Indian States; list of factories which come under the Indian Factories Act in each district of the different provinces of India, and the average number of persons employed by them.

Joint Stock Companies in British India and in the Indian States.

It gives only a complete list of industrial establishments.

Statistical Abstract for British India—Commercial Intelligence Department. (Annual.)

The information available in this publication is only about cotton, jute, woollen and paper mills and breweries, and relates to the following items:—

Cotton Pressing Factories and Cotton Spinning Mills in India—Commercial Intelligence Department. (Annual.)

Number—capital—looms—spindles, persons employed—production (quantity), value of production is also given for paper and woollen mills. For jute mills no production statistics are given and additional information on mill consumption in bales of 400 lbs. each, is published. Figures relating to breweries are all the same except in regard to capital, which is not recorded.

Monthly Statistics of Cotton Spinning and Weaving in Indian Mills—Commercial Intelligence Department. (Monthly.)

Number of pressing factories and spinning mills in each district. Names of factories, situation and owners or agents.

Quantity (in lbs.) of yarn spun and woven goods produced; detailed statements of the quantity (in lbs.) and the count of yarn; description, value and quantity (in lbs. and their equivalent in yards) of woven goods are also given.

Report on the working of the Indian Factories Act in the Provinces.

Enumeration of factories.

COTTAGE INDUSTRIES.

Industrial Survey Reports of each district of the United Provinces of Agra and Oudh (1922-24).

The statistical information as available in the publications in connection with this important survey is noted below:—

Production per man, firm or family; daily, monthly or annual outturn per firm, of various cottage industries

Publications.

Notes on the Industries of the United Provinces, by A. C. Chatterjee, (1908).

Industrial Survey of the Central Provinces and Berar, (1908-09).

A survey of the Industries and Resources of Eastern Bengal and Assam for 1907-08, by G. N. Gupta, M.A., I.C.S.

(a) Report on the Survey of Cottage Industries in Bengal—Department of Industries, Bengal, 1924.

LeIIIEC

Nature of information.

in a district. Total outturn from some industries in a district; the quantity and value of production of important cottage industries are also given in a few cases. Number of turnovers, quantity and value of bye-products; percentage of the wastage of raw-material in production, the quantity of finished articles produced in relation to raw-materials used, and the cost of production, are very seldom and imperfectly dealt with. Machinery, number of works, number of working days, number of men engaged, wages, sometimes the total annual wages paid in a factory, are also available in some cases. Profits are given per head or per family or per article manufactured, but sometimes the daily or monthly or annual profits are given. Prices of the raw-material imported or the finished articles sold or exported are also noted.

This work discusses the trade returns and local consumption, and sometimes the number of employees engaged with regard to the cotton, silk, woollen, oil and oil-seed, dyeing and printing, leather, iron and steel, brass and copper industries, flour, *ghi*, sugar, tobacco and other produce.

Information relating to the number of persons engaged, imports and exports, production, rate of production, cost of raw-material and of production, prices of finished goods, and profits, or to some of these items, is available with regard to the cotton, woollen, silk and lace, pottery, tanning and leather, dyeing and calico printing, and brass and copper industries.

The statistical information given about textile and connected industries, leather, fish industry, iron and steel work, oil industry, and production of raw silk, relates to the following items :—

Population supported by the industries, exports and imports, available raw-material, capital invested, number of gas, forges, etc., estimates of cloth consumption and prices of leather.

Statistical information is available on the following items for the various districts of Bengal :—

Publications.

(b) **Supplementary Report on the Survey of Cottage Industries in Bengal, for the districts of Mymensingh, Nadia and Faridpur—Department of Industries, Bengal.**

A Summary of the Cottage Industries in the districts of Bengal—Co-operative Societies, Bengal.

Handbook of Commercial Information, Madras, by M. E. Couchman, I.C.S.—Department of Industries.

Monographs on the various industries issued between 1895 and 1910 by the various Provincial Governments.

(These relate to cotton and woollen fabrics, silk, dyes and dyeing, gold and silver, wire and tinsel, leather and tanning, paper, pottery, glass, stone, wood and ivory carving, iron and steel, brass and copper, and manufactures from wood.)

Nature of information.

Number of people or families, and of firms, shops or factories engaged in the different cottage industries. Yearly consumption of raw-materials, prices of raw-materials, appliances, finished goods. Cost of their repairs and cost of production. Rates of production and total yearly outturn. Average earnings of a worker (monthly or daily), hours of work and trade statistics.

It is a reprint of the summary of the cottage industries in the districts of Bengal compiled from the Industrial reports of Messrs. Collins, Cunning, Gupta and Swain. The information relates to the distribution of persons engaged in important industries, the percentages of industrial to total population, annual production (not in all cases), etc.

Production in the various industries, including fisheries, (quantity and value), prices and foreign trade (quantity and value).

The nature of statistical information available in these monographs is as given below :—

Cost of raw-material, total cost of production, prices of articles sold, rates of profits (per article, family or worker), wholesale or retail prices of finished goods, estimated outturn for some industries. Information about population and wages of cottage workers, and export and import trade in raw-materials used for manufacture and in finished articles, is also given.

APPENDIX 3.

List of selected recent books, monographs, etc., which contain some information as to the income of the various classes of people in India.

Bombay.—

- Dr. H. H. Mann : Land and Labour in a Deccan Village, No. I (1917).
 Dr. H. H. Mann : Land and Labour in a Deccan Village, No. II (1921).
 Mr. A. R. Burnett-Hurst : Labour and Housing in Bombay, (1925).
 Mr. Findlay Shirras : Report of an Enquiry into Working-class budgets in Bombay, (Labour Office, Bombay), (1923).
 Report on the Investigation of the Economic Condition of two villages in Sholapur and East Khandesh Districts.
 Bombay Census Report, 1921. (Appendix W).

Madras.—

- Dr. Gilbert Slater : Some South Indian Villages, (1918).
 Sir A. P. Patro : Studies in Village Economics.
 Report of the Salaries Committee, Madras, (1920).

Bengal.—

- Major J. C. Jack : Economic Life of a Bengal District, (1916).

Bihar and Orissa.—

- Annual Reports of the Chanakya Society, Patna College.

Punjab.—

- Dr. E. D. Lucas : The Economic Life of a Punjab Village, (1920).
 Mr. R. L. Bhalla : Economic Survey of Bairampur in Hoshiarpur District, (1922).
 Mr. H. Calvert : Wealth and Welfare of the Punjab.
 Mrs. Caleb : Family Budgets of Clerks in Lahore.

Burma.—

- Mr. T. Couper : Report on an Enquiry into the conditions of Agricultural Tenants and Labourers, (1924).
 Burma Settlement Reports.

Assam.—

- Report of the Assam Labour Enquiry Committee, (1922).
 Assam Census Report, 1921. (Appendix F).

Baluchistan.—

- Census Report, 1921. (Appendix III).

General.—

- Income-tax Administration Reports of all provinces.

For a list of Estimates of the National Income of India, *vide* Appendix "I" of questionnaire.

APPENDIX 4.

List of selected Books and other publications on the Cost of Living of various classes of people in India.

I.—Cost of Living Index Numbers :—

1. Mr. B. A. Collins, I.C.S. : Index Numbers showing the rise and fall in the cost of living of the working classes at six centres in Bihar and Orissa. (Published monthly by the Director of Industries.)
2. Labour Office, Bombay : Cost of Living Index Numbers. (Published monthly in the *Labour Gazette*.)

II.—Inquiries relating to special classes, and Census Reports :—

1. Report of the Assam Labour Enquiry Committee, 1921-22.
2. Mr. G. F. Shirras : Report on an Enquiry into working-class budgets in Bombay, 1923.
3. Mr. J. L. MacCallum, I.C.S. : Report on local allowances and special rates of travelling allowances in Burma, 1920.
4. Annual Reports of the Chanakya Society, Patna College.
5. Mr. A. R. Burnett-Hurst : Labour and Housing in Bombay. (1925).
6. Mrs. Caleb : Family Budgets of Clerks, (Lahore).
7. Dr. H. H. Mann : Note on the Diet of Tea garden coolies in Upper Assam and its Nutritive Value. (Journal and Proceedings of Asiatic Society, Bengal).
8. Dr. H. H. Mann : Note on the increase in the cost of living in the Deccan. (Journal of the Indian Economic Society).
9. Captain D. McCay : Bengal Jail Dietaries.
10. Mr. L. J. Sedgwick : Family Budgets, Appendix W to Census of India, 1921, Vol. VIII. (Bombay).
11. Mr. G. T. Lloyd : Family Budgets, Appendix F to Census of India, 1921, Vol. III. (Assam).
12. Mr. T. C. Fowler, and
R. B. Dewan Jaimal Rai : Family Budgets, Appendix III to the Census of India, 1921, Vol. IV. (Baluchistan).

III.—Village Studies :—

1. Major J. C. Jack : The Economic Life of a Bengal District (1916).
2. Dr. E. D. Lucas : The Economic Life of a Punjab Village.
3. Dr. H. H. Mann : Land and Labour in a Deccan Village, Studies I and II.
4. Dr. G. Slater : Some South Indian Villages.
5. Sir A. P. Patro : Rural Economics, (Madras).
6. Mr. R. L. Bhalla : An Economic Survey of Bairampur Village. (Hoshiarpur District) Punjab.

IV.—Settlement Reports :—

District Settlement Reports in Burma : Kyaukpyu, Shwebo, Myaungmya, Segaing, Thayetmyo, Sandoway, Subyugun tract, Myingyan, Tarang and Kyaukse.

APPENDIX 5.

List of selected recent Books, Monographs, Reports, etc., containing some information on the indebtedness of various classes.

Bengal.—

Calcutta University (Special study section) : Agricultural Indebtedness.
Major J. C. Jaek : The Economic Life of a Bengal District, (1916).

Punjab.—

Mr. M. L. Darling : The Punjab Peasant in Prosperity and Debt, (1925).
Mr. R. L. Bhalla : Economic Survey of Bairampur, (1922).
Mr. H. Calvert : The Wealth and Welfare of the Punjab, (1922).
Dr. E. D. Lucas : The Economic Life of a Punjab Village, (1920).
Mr. S. S. Thornburn : Peasant Indebtedness and Land Alienation to Money-lenders in Rawalpindi Division, (1896).

Bombay.—

Dr. H. H. Mann : Land and Labour in a Deccan Village, No. I, (1917).
Dr. H. H. Mann : Land and Labour in a Deccan Village, No. II, (1921).
Mr. G. Keatinge : Rural Economy in the Bombay Deccan, (1921).
Mr. G. Findlay Shirras : Report on an Enquiry into Working-class Budgets in Bombay, (1923).

Madras.—

Dr. Gilbert Slater : Some South Indian Villages, (1918).
Settlement Reports : Bellary and Anantapur Districts, (1922).

Baroda.—

Report on Agricultural Indebtedness in the Baroda State, (1913).

United Provinces.—

Sir Theodore Morrison : The Industrial Organization of an Indian Province, (1906).

Assam.—

Report of the Assam Labour Enquiry Committee, (1922).

Burma.—

Settlement Reports.
Mr. T. Couper : Report on an Enquiry into the conditions of Agricultural Tenants and Labourers, (1924).
Mr. H. Clayton : Report on Indebtedness in the Irrawaddy Division, (1910).

General.—

Dadabhai Naoroji : Poverty and Un-British Rule in India.
Mr. William Digby : Prosperous British India, (1902).
Sir Ganga Ram : Agricultural Problems of India, (1916).
Sir Frederick Nicholson : Report on the possibility of introducing Land and Agricultural Banks in India, (1897).
Note on Land Transfers and Agricultural Indebtedness, (Government of India), (1895).
Report of the Famine Commission, 1901.
Reports of the Co-operative Societies in the various provinces, Ajmer-Merwara, Mysore State, etc.
Statement of Objects and Reasons for the Deccan Agriculturist's Relief Act, Punjab Land Alienation Acts, and other like measures.

APPENDIX 6.

Note on some Publications on Wages.

The official statistics of wages used to be published in the annual issues of *Prices and Wages* which has now been suspended as a result of retrenchment. This publication used to give the results of the quinquennial wage-censuses (of 1911 and 1916) in respect of certain urban occupations, [viz., of (1) common labourer, (2) worker in iron and hardware, (3) brass, copper and bell-metal worker, (4) carpenter, (5) mason and builder, (6) cotton weaver in hand industry, (7) fireman, and (8) fitter] ; and certain rural occupations, [viz., (9) agricultural labourer, (10) village carpenter, (11) village mason, (12) village blacksmith, (13) thatcher, (14) station cooly and (15) ploughman]. In the Central Provinces the rates were reported annually, but for Nos. (1) to (6) and (9) to (11) only.

2. The same publication used also to give the rates of certain operatives in selected particular cotton, woollen, jute, rice, or paper mills, in certain railway workshops, in the Orissa canals, in one or two leather factories, in certain tea-plantations, in the Murree brewery, and in the British India Steam Navigation Company.

3. As noted in the text of the report, the results of these censuses were found to be so unsatisfactory that a third one proposed to be taken in 1921 was abandoned as an all-India project. Madras and the Punjab alone took a census in 1921-22, and Bihar and Orissa (for rural wages only) in 1924. But no regular official wages-statistics are being published any more for India as a whole.

4. It may be mentioned here that Mr. K. L. Datta's *Report on an Enquiry into the Rise of Prices in India*, contains some valuable statistics of wages ; but these are now too old and have not been brought up to date, except in the case of the occupations included in the *Prices and Wages* referred to above.

5. Among special investigations on Wages may be mentioned Mr. Findlay Shirras' *Report on an Enquiry into Agricultural Wages in the Bombay Presidency, 1924*, which gives the rates of daily wages of (1) field labourers, (2) ordinary labourers, and (3) skilled labourers (village craftsmen), for each district, from 1900 to 1922 ; and the same author's *Report on an Enquiry into the Wages and Hours of Labour in the Cotton Mill Industry, (Bombay Presidency), 1923*, which gives the rates of wages of each and every class of operatives in this industry in the month of May 1921.

6. The investigation of Mr. Findlay Shirras into the wages in the cotton mill industry in Bombay is good ; but it would not be possible to keep up the investigation every year on such an elaborate scale. In his other work on Agricultural wages there is one serious defect : he has taken the wages as prevalent at "the district headquarters town, and another town more representative of the rural areas". But it is apparent that wages in and near towns cannot be said to be truly representative of rural areas.

APPENDIX 7.

Detailed proposals regarding Wage Census and Wage Returns.

1. Wage statistics serve a double purpose, (1) they provide material for determining periodical fluctuations in the standard rate of wages in particular tracts, occupations, or industries ; and (2) they supply information regarding the income of certain classes of wage earners, which can be used as a check on the figures of income of those classes which may be ascertained by other methods. For the former object it is sufficient to know (a) the predominant rate of wages in each occupation in different tracts, and (b) the hours of labour. For the latter, the points to be ascertained are (c) the range of wages, (d) the number of earners at each rate, from which may be deduced the weighted arithmetical average of the rates, and (e) the frequency of employment. As regards rates, it is necessary to ascertain (f) the value of supplementals, if any, given at harvest or other times.

2. In the Dominions and other foreign countries wage statistics are usually compiled very exhaustively for all the principal industries every year, invariably giving the hours of labour and other allied information. In countries where trade unions are very strong they also usually have a publication called " Union scale of wages and hours of labour ", or some similar publication.

3. In India, however, owing to paucity of organized industries and to the necessity of embracing rural occupations in a wage survey, the difficulties of the task are somewhat greater. It is, therefore, proposed that a comprehensive wage census should be taken quinquennially in respect of agricultural labourers and artisans, and cottage industry workers in rural areas, domestic servants, artisans and general skilled and unskilled labourers in organized industries, railways, tramways, shipping and other transport companies, mines, docks, factories, canal systems, power works, and municipalities, and in large plantations. This means that the number of classes for which rates are reported will have to be increased many times.

4. While a quinquennial wage census should be very comprehensive and should embrace all classes of workers, and all establishments, and should ascertain all the particulars mentioned in paragraph 1 above, it is proposed that *sample rates* of wages should be ascertained every year, from typical establishments in each organized industry, and for agricultural labourers and craftsmen in typical rural areas.

5. The latter, *viz.*, the *wage returns*, need only report the mode or predominant rate, and in industrial concerns the hours of labour also. The number of workers in each class for which the mode is given in each tract, should also be ascertained approximately. The rates should be noted monthly, and the return made annually to the Bureau.

6. With regard to the classes of wage earners, it is proposed that the rates of wages in certain occupations should be reported uniformly by all provinces ; and that each province may then show in additional columns the wage rates of any other classes of local importance (*e.g.*, tea garden coolies in Assam). The Director of Statistics at the Central Government may decide in consultation with the provincial Statisticians and local Governments for what classes wages should be ascertained in each province. In this connection the classes mentioned in paragraph 3 are suggested for consideration.

7. The existing returns usually give a very wide range of rates, *e.g.*, " between annas 8 and Rs. 2 ". For the purpose of annual statistics, it will be more useful to give one predominant rate for each tract. Moreover, a uniform system should be adopted

in all provinces. If one province gives the median (*e.g.*, Bengal in 1916), and another the mode (*e.g.*, the Punjab in 1922) strict comparison will not be possible. It is suggested that the mode may be adopted in ascertaining wage rates in selected tracts in each district, but that the figure adopted for the district and for the province should be the arithmetical average of the modes for the tracts or districts comprised therein, weighted on the basis—not of the total population as was wrongly done in Bengal in 1916, in connection with the “district medians”—but the approximate number of persons engaged in the occupation in question.

8. The unit of time to be adopted for reporting wages need not be uniform, but it should be uniform for any one class throughout India; and if, in any case, the practice in respect of payments varies in the different provinces, instructions should be given for converting them to one unit, *i.e.*, per diem or per mensem.

9. In all the industrial countries of the West, labour statistics invariably include the hours of labour. In this country it will be useless to ascertain the hours of labour in rural tracts. These are limited by day-light. In fact the hours of labour need be ascertained annually only in the case of the organized manufacturing, mining, and transport industries.

10. If wage returns are to be used for ascertaining or, at any rate, checking the figures of the income of various classes of wage earners, it will be necessary to determine the frequency distribution. For this again it is necessary to know the number of wage earners at each rate within each wage group, *e.g.*, the two anna groups as adopted for the rural unskilled labour in the Punjab wages survey of 1922.

11. Another point of which any wage census must needs take account (for the object mentioned in the last paragraph) is the frequency of employment. Its importance need hardly be emphasized. The real position of a wage earner in a specified period of time cannot be gauged unless the period of time for which he was not in employment is also taken into account.

12. In this connection the following suggestions are made :—

(a) With regard to agricultural labourers a study should be made of the employment factor in each district for some years until basic figures for a “good year”, a “normal year” and a “bad year” are arrived at, after which it will not be necessary to continue it.

(b) With regard to many of the village and town artisans, the question is not one of getting work on some days and not getting it on other days, but of getting more work one day and less work on another (*i.e.*, “under employment” as it has been called). Statistics regarding frequency of employment will therefore not have their full utility. An attempt may nevertheless be made to ascertain it.

(c) With regard to operatives in the organized industries, docks, mines, railways, etc., it is comparatively simple to get annually the figures of employment from the heads of the firms or establishments. From this source may also be determined the periodical migration of certain industrial workers to their villages during particular seasons.

13. Lastly, there is the question of extra payments which agricultural and other labourers usually get at harvest time, and other accessories and supplements in the shape of free housing, food, clothing, etc., which domestic or farm servants usually receive. These should, of course, be added, so as to get a true idea of the *real wages*. It is proposed that these should be evaluated at the prevalent local prices, and shown in a separate column, without any attempt to work out an equivalent rate for a day or a month.

14. The rural wages and wages of work-people in towns other than those engaged in organized industries will have to be ascertained by local enquiries in a large number of typical villages and in the towns of each district.

Mode of collection of data.

15. The wage rates in organized industries, railways, mines, docks, etc., will be ascertained by the issue of schedules or forms to the heads of sample concerns every year ; and, the other particulars needed for the wage census, by issuing similar forms quinquennially to all such establishments and concerns.

16. The difficulty of ascertaining wages in the case of miners and other workers in industrial establishments who are engaged in such industries for only part of the year but go home and work on agriculture or otherwise during the rest of the year has been raised in the course of the evidence taken by the Committee. In such cases it would be sufficient to ascertain wage statistics for the time such persons work in mining or other organized industries. The total annual earnings of partly agricultural and partly industrial labourers must be left to be determined by intensive study when their residential village comes under observation. The same remarks apply to rural labourers or artisans who are partially agriculturists.

17. Another difficulty which has been brought to notice is in connection with piece workers (particularly miners) who work in family parties. An easy solution of the difficulty would be to divide the earnings over the members of the party, reckoning children under a certain age as half operatives.

Price-wages.

18. The annual figures of wage rates may be published in the Year Book, the Provincial Statistical Abstracts, and in periodicals like the Bombay Labour Gazette. The quinquennial wage census report should be a separate publication in each province, a collective report being published for the whole country. The all-India publication need not give any details (*e.g.*, the range of wages and frequency distribution), but may give the averages only. Abstracts of the figures should also be published in the Year Book.

Publication.

NOTE OF DISSENT

BY

Professor A. R. Burnett-Hurst.

NOTE OF DISSENT

BY

Professor A. R. Burnett-Hurst.

The exchange of views which preceded the drafting of the Report revealed fundamental differences of opinion between my colleagues and myself. However, with a view to presenting a single report, if possible, it was subsequently arranged that the draft Report prepared by my colleagues and that a note embodying my views should be exchanged. This arrangement was duly carried out but we found that our differences still remained considerable, both on principles and in details. Accordingly, I have considered it my duty to write this Note of dissent to the draft Report handed to me by my colleagues.

As a statistician and economist, I regret I am unable to share the opinions of my colleagues on many views expressed in the draft Report—views which do not command my assent, some indeed which provoke my strong dissent. Some of the principles and most of the details of their recommendations, together with the arguments advanced in support, do not meet with my approval. Were I to record my opinion upon the details contained in the draft Report as well as, state my own recommendations in full, it would necessitate the writing of an entirely separate report. As there is a general desire that the publication of the Report should not be delayed; I accordingly content myself in this Note of dissent with discussing a few main principles.

India and the Dominion Standards of Statistics.

2. It should be the desire of all interested in the welfare of India that the country should raise the standard of its statistical work, both in scope and in efficiency, to the level reached in other parts of the Empire and in certain foreign countries. On the other hand, there is a tendency to disregard the fundamental differences between India and the Dominions in the collection of statistics. It is necessary to draw attention to these differences lest they be overlooked.

In the first place, the expenditure and the difficulties of a statistical enquiry grow *ceteris paribus* with every increase in the units to be enumerated. In 1921 the population of Great Britain was 43 millions; Canada, 9 millions; South Africa, 7 millions; Australia, 5½ millions and New Zealand, 1 million. Contrast these figures with 247 million inhabitants of British India—a population more than twice that of the United States of America and exceeded only by that of China. The magnitude and difficulties of a statistical investigation¹ embracing the entire population of British India can, to some extent, be gathered from such figures but may be more definitely realised by the following statement:—

“The largest (province) in extent, Burma, is in area rather smaller than Germany and rather larger than France and has a population about one-third as numerous as that of the latter country.

¹R. J. Thompson, *An Agricultural Census*. Paper read before the Royal Statistical Society, January, 1925. “Even in a small country like England and Wales, the difficulties in the way of attaining a complete knowledge of agricultural conditions are considerable and not easily overcome, while in larger countries and under less favourable conditions the magnitude of the task can be imagined.”

The United Provinces is about the same size as Italy but has a rather larger population. Bombay resembles Spain in area and has a population equal to that of Spain and Portugal together, while Assam, the smallest of the major provinces, has an area rather larger than that of England and Wales and a population which compares with that of Switzerland.¹ ”

An investigation comprising the whole of British India within its scope would correspond to an enquiry covering the greater part of Europe.

3. Besides, statistics can be collected more easily where population is concentrated (*i.e.*, in cities and towns) than where it is scattered (*i.e.*, in rural areas). In England and Wales about four-fifths of the people are urban residents, while in Australia over three-fifths of the inhabitants are classed as “urban” and in each of the other Dominions about one-half of the population is so classed; on the other hand, only about one-fifth of the inhabitants of British India reside in towns.² The wages of industrial workers (especially in countries where there is State regulation of wages, *e.g.*, in Australia, New Zealand, South Africa and Great Britain) can be ascertained with greater facility than the earnings of agriculturists. The latter form about three-quarters of the total population of British India, whereas in Great Britain only one-tenth are dependent upon agriculture, in Canada the proportion is about one-third and in Australia about one-quarter.

4. The statistics of production (agriculture, pasture, dairy, industry, mining, etc.), of wages and prices, etc., in Great Britain and the Dominions are usually collected through the distribution of schedules by post or hand to the persons concerned who are required to complete and return them within a specified time—a more accurate and cheaper method than that of employing a paid staff of investigators. The former method cannot be followed in India, except in special cases,³ because approximately ninety per cent. of the population is stated to be illiterate.⁴ Where it is impossible or inadvisable to employ the schedule method for any specific purpose, other countries usually engage a special staff of trained and skilled persons who possess the necessary technical knowledge, *e.g.*, estimates of crop output in Great Britain are made by crop estimators, fishery statistics in Canada are collected by inspectors and overseers of the Fisheries Department.

Associations in Great Britain and the Dominions co-operate and assist in the collection of statistics. For example, the Ministry of Agriculture, Great Britain, receives considerable support and assistance from the National Farmers’ Union, the Federation of British Growers, the Horticultural Trades’ Association, the Glass House Growers’ Association, the British Bee-keepers’ Association and many others.⁵ There is almost an

¹Report on the *Census of India, 1921*, Vol. I, Part I.

²“While any comparison of the total figures of the Indian continent with those of other countries is of little value, we may note that, as compared with 23 per cent. in the most urbanized unit of the Indian Empire, the proportion of the population of England classed as urban is 79 per cent.” *Census of India, 1921*, Vol. I, Part I, page 64.

³Statistics from factories and mines are collected by schedules.

⁴*Census of India, 1921*, Vol. I, Part I, page 177.

⁵R. J. Thompson, *An Agricultural Census*.

entire absence of such organisations in India, except for a few Chambers of Commerce and trade associations.

5. Industry (in the broad sense of the term) in Great Britain and the Dominions is highly organised and is, to a large extent, on a capitalistic basis. Such conditions enable statistics to be collected with facility and with a degree of accuracy which cannot at present be achieved in India. There is an entire absence of organised and capitalistic enterprise in this country, excluding mines and large industrial and mercantile establishments. The large number of scattered unorganised undertakings, mostly carried on by persons working on their own account, make statistical measurement not only extremely difficult but impossible to achieve without the employment of a large staff. Sir Frederick Nicholson, the leading authority on Indian Fisheries, gives a striking description of the unorganised condition of the Indian fishing industry and the difficulties of collecting complete fishery statistics.

“ Moreover, it requires but slight thought to show that the collection of statistics and even of facts in this country is very difficult and very different from the same duty in Western countries.”

“ In Great Britain the Fishery Departments are chiefly statistical and regulative and not industrial (except in the one matter of crown brands for Scotch herring), just because the men engaged in the direct fishing and allied industries not only know their own business and interests most thoroughly but have initiative in the highest possible degree, and are infinitely better acquainted with their own industries and interests than any Government or Board can be. Moreover, in consequence of the fishery organization, the gathering of statistics is a simple matter; the boats are large and chiefly issue, often under the fleet system, from a few large ports, and are owned and run by intelligent businessmen, who moreover know that statistics are gathered not for fiscal but for public purposes. Hence all that has to be done is to appoint an Inspector at each port—in England often a businessman himself—who simply receives from the various owners notes of their catches which he compiles into a daily report; the fish markets, moreover, are perfectly organized and it is easy to ascertain every pound of fish landed.”

“ Now here in India everything is exactly the opposite. First, our fishing industry is in the most primitive condition quite undeveloped in any of the modern methods and allied industries, bound by custom and ignorance, and entirely without initiative in new departures. . . . Secondly, the collection of statistics except of almost fixed and of readily visible and ascertainable matters (such as the population, number of boats, etc.) is almost impossible here, and the statistics, if collected, would be of little value and probably misleading, while the collection, costly in itself, would cause the worst suspicions among the fisher-folk who have never yet been taxed. We have some 1,700 miles of sea-coast exclusive of estuaries and indentations, and every mile, so to say, has its fishing village or hamlet with few or many canoes, catamarans, etc., which go out by night or day catching sometimes a few, sometimes a good load, of one fish or another, which they bring to shore and sell off on the beach at once to local purchasers who consume or run the fish inland as soon as possible before it is further decomposed. The fishermen themselves, moreover, have no idea of weights; they speak generally in terms of baskets or divisions of boats

(of greatly varying local sizes) where fish are abundant or in numbers where the fish are large or few. Moreover, in addition to the boats, there are very numerous shore-seins, casting nets, etc., the produce of which comes in at any time. Hence it is clear that even an official in each hamlet could not get trustworthy or even approximate statistics, since he could not be always on the spot; and an official in each village is unthinkable. Moreover, owing to ignorance in part, but far more owing to suspicion and fear of taxation, the returns of quantities caught would be absolutely misleading and mischievous. These difficulties may gradually be overcome, but meanwhile they exist and tend to render statistical work both difficult and inaccurate.¹

The Madras fish-curing yards were transferred to the Madras Fisheries Department last year (1924) and the staff in charge can now be utilised to collect statistics of the quantity and value of fish production in the yard areas. Outside the sphere of yards and in other provinces, it will not be possible to gather information without the employment of a large and special staff.

Cottage or small-scale industries are another example of unorganised production in India. "In no other country, except perhaps China, are there anything like the home industries existing in India."² They are to be found in almost every Indian village and according to the Report of the Indian Industrial Commission the number of the workers in the various cottage industries "are still vastly larger than those of the operatives employed in organized industries."³ The difficulties of collecting statistics from these scattered craftsmen are very great. Almost all the workers are illiterate and keep no records. It is difficult to assess the bulk of the production which is repair work. Moreover, some of the industries are seasonal (*e.g.*, hand ginning). Further, domestic industries form the subsidiary occupation of many persons and their production is consequently irregular. The goods produced are not only for sale but also for exchange and home consumption. No attempt is made in the Censuses of Production in Great Britain, the United States and the Dominions to collect statistics of domestic industries from persons working on their own account or on a small scale owing to the difficulties of the enquiry, the great expense involved, the impossibility of securing reliable data and the inability of many people to give the required information.⁴ It is said that if only partial statistics of cottage production, of fisheries,⁵ etc., are secured, it will not be possible to obtain complete production statistics for India. This is true. In the present stage of India's development it will

¹*Fishery Statistics and Information, West and East Coasts, Madras Presidency.*—Bulletin No. 9, Madras Fisheries Bureau, 1916.

²Annual Report of the Director of Industries, Bihar and Orissa, for 1922-23.

³Report of the Indian Industrial Commission, 1916-18, page 163.

⁴"It is no use making the answering of a census question compulsory and assigning heavy penalties for misstatements when it is impossible for a producer, with the best will in the world, to be sure that he is telling you the truth." G. Udny Yule, *Statistics of Production and the Census of Production Act (1906)*. Paper read before the Royal Statistical Society, 1907.

⁵*Fishery Statistics and Information, West and East Coasts, Madras Presidency.*—chiefly in Bengal, Bihar and Orissa and Assam, no organisation exists for collecting information. The bulk of the fish caught is consumed locally and even with the employment of a special agency it is doubtful whether the amount caught by villagers in *sheels*, tanks and fields for home or local consumption could be ascertained.

not be possible to obtain complete statistics of production. As Mr. Yule has stated with reference to production statistics in Great Britain, "he agreed with Mr. (now Sir Henry) Rew that a complete census of production in the full economical sense of the word was an impossibility; you could not do it, simply from the expense, apart from the practical difficulties."¹ It is useless to recommend that India should attempt what is impossible.

Moreover, if India desires statistical information as comprehensive and as reliable as that published by other countries, she must be prepared to incur the necessary expenditure.

6. Because certain statistical methods are employed in the Dominions, it must not be argued that they are necessarily applicable to India. The "aggregate expenditure" method, utilized for constructing index numbers of the cost of living, has been adopted in several countries (including Australia, New Zealand and South Africa). An attempt to introduce this method in Bombay has not proved a success and Mr. Collins, Director of Industries, Bihar and Orissa, found that it did not suit the conditions in that province. "Indices based on all-India mass units must presume that average consumption is the same throughout India; that differences between provinces are not such as to vitiate their application and that the modes of living of the industrial classes and of the population of India as a whole are not materially different. Any one who is familiar with Indian conditions will admit that the facts are otherwise and the mode of living in India differs not only between classes and classes but between provinces also and that, too, in the most marked degree."²

7. It is seen, therefore, that one cannot argue that, because certain statistics are collected in the Dominions, they must *ipso facto* be collected in India. By all means, let India set for herself the standards both of quality and quantity of statistical information which these countries have established but, at the same time, it should be remembered that any attempt to secure figures of doubtful value by "short cut" methods may lead to the statistics of the country being discredited.

Criteria of Economic Conditions.

8. There are differences of opinion as to the measure which should serve as the criterion of the "economic conditions of the various classes of the people". The following so-called "tests" have been suggested:— (i) Income (as ascertained by general investigation in typical areas), (ii) National Income (aggregate or *per capita*), (iii) Individual Wealth, (iv) National Wealth.

*Income*³.

9. The unit of economic life in India, as in other countries, is the family. Hence enquiries should be directed into ascertaining *family* income. The difficulties in determining the *money* value of *real* income are

¹Discussion on Mr. Yule's paper on *Statistics of Production*.

²*Index Numbers showing the Rise and Fall in the Cost of Living in Bihar and Orissa*.—Bulletin No. 7, Department of Industries, Bihar and Orissa, 1923.

³This includes not only earnings in cash, rents, interest on capital, annuities, pensions, allowances, etc., but also the *money* value of earnings in kind (grain and other food, uniform or other clothing, dwellings, etc.), of services, of perquisites, of the free gifts of nature (*e.g.*, firewood, etc.).

described in Appendix B to this Note. Assuming that fairly accurate statistics can be secured, figures of income alone do not serve as the sole criterion of the economic status of the family. Obviously, the larger the family, the greater the income required to maintain it. The variation in the purchasing power of money at different times and in different places must also be taken into consideration ; a family in receipt of an income of Rs. 70 per mensem in a village may be relatively more prosperous than if it obtained an income of Rs. 100 per mensem in a town where the expenses of living are greater. Moreover, a person may be receiving a respectable income, yet his economic condition may be deplorable if he has to pay heavy interest charges for debts which he has incurred. Besides, conventions may necessitate the expenditure of a large proportion of income on the maintenance of social position or on unproductive objects and may result in the income proving inadequate. These instances suffice to show that the money value of the income of a family is no true index of its economic condition.

National Income or National Dividend.

10. The generally accepted view of statisticians and economists, including Sir Josiah Stamp, Dr. Marshall, Dr. Bowley and Sir Leo Chiozza Money, is that the National Income or National Dividend, of a country is the aggregate of all the incomes of its inhabitants in a year.¹ Sir Leo Chiozza Money who uses the two terms as synonymous states : " It will be realised that the National Income is very much bigger than the value at places of production of the nation's material output, for it covers the incomes drawn both for the making of goods and for the rendering of services."²

There is a demand that a figure of National Income should be compiled for India on the ground that similar estimates have been made in other countries. These estimates have been framed by non-officials except in the United States and Australia. A figure of National Income in no way throws light upon " the economic condition of the various classes of the people ". Its compilation is very largely an academic exercise which should continue to be left to statisticians, economists and other non-officials. There are only two methods which can be used in India for estimating National Income, *viz.*, the Census of Production method and the Occupational Census method. The valuation of repair work, of the production of fisheries, cottage industries, etc., of transportation charges (other than rail), of merchants' and retailers' charges and profits, of personal services, etc., are among some of the difficulties which confront the estimator employing the Census of Production method. The inaccuracies of the statistics of subsidiary or secondary occupations³,

¹It is the money value of all goods produced, all services rendered and all utilities created by the people of the country during the year. It would include the value of the services rendered by the large number of persons in the wholesale and retail distributive, trades, by middlemen and transport workers, by professional men and officials, by domestic servants, by all who contribute to social pleasure and amusement—in other words, all services rendered by the people which are generally exchanged for money or produce.

²Sir Leo Chiozza Money, *The Nation's Wealth*. Collins, 1914.

³Mr. Marten, the Census Commissioner, writes " Mr. Sedgwick considered the present figures so entirely untrustworthy that he abandoned the tables altogether while other provincial Superintendents treat the statistics obtained with undisguised suspicion." *Census of India, 1921*, Vol. I, Part I.

coupled with the difficulties of ascertaining with accuracy the income of the bulk of the inhabitants, make any estimates based on the Occupational Census method liable to a considerable margin of error. Assuming it were possible to secure satisfactory estimates, they would still have to be studied in relation to the purchasing power of money, both from the point of view of time and of place. Finally, as Dr. Bowley states, in reference to the measurement of aggregate or national income, "the trouble from the point of view of scientific measurement is that we cannot always estimate any limit to the margin of error, so that an element of complete uncertainty or guesswork may remain."¹

Income per Capita.

11. Several witnesses have advocated that a figure of income per head (*i.e.*, the estimate of aggregate or national income divided by the number of the enumerated population to give *per capita* results) should be obtained for the purpose of making international comparisons.

Dr. Bowley has drawn attention to two valid criticisms to which such averages are open. "The first, that neither the numerator nor denominator are homogeneous, and that the relationship between items in numerator and items in denominator varies enormously; the second, that for nearly all practical purposes the distribution about the average is as important as the average itself. As already emphasized, it is in the analysis of the change of these averages from time to time that their use is found."² Moreover, the qualifications and limitations to be attached to the figures would very largely negative and vitiate international comparisons. The late Sir Robert Giffen drew attention to the difficulties and dangers of such comparisons and stated that to take statistics "haphazard from statistical abstracts and dictionaries, and assume that figures called by the same names in different countries have exactly the same values, is either foolish or dishonest."³ Dr. Bowley has also called attention to the limitations of such a figure: "As we extend our view to include the whole population or a large group of trades, more and more caution is needed in the use of the average. . . . the average income per head of the population can only be used for arithmetical purposes, not (except in a few cases) for comparison of one population with another."⁴

Comparisons between India and, say, European countries based upon figures per head are vitiated by the entirely different economic conditions—differences in the purchasing power of money, differences in customs, habits and standards of living. It is even doubtful whether any but the roughest comparisons can be made between India and other Asiatic countries, for example, Japan and China where the standards of living are more in keeping with those prevailing in India. It may be possible to compare *per capita* figures for communities with similar characteristics within the country but, before such comparisons are instituted, the figures must be correlated with the standards of living of the respective communities.

¹A. L. Bowley, *The Nature and Purpose of the Measurement of Social Phenomena*. P. S. King and Sons, 1915.

²*Ibid.*

³Sir Robert Giffen, *Economic Inquiries and Studies*, Bell and Sons, 1904.

⁴A. L. Bowley, *An Elementary Manual of Statistics*, Macdonald and Evans, 1915.

Individual Wealth.

12. Approximately seventy-five per cent. of the population of the country are agriculturists and their individual wealth includes land, cattle, agricultural implements, household goods, jewellery and coin. Trade statistics show a continual absorption of the precious metals by India but the proportion hoarded is difficult to state.

Witnesses frequently expressed the opinion that enquiries regarding the personal wealth of the people would be greatly resented, probably viewed with suspicion and lead to no fruitful results. Any attempt to ascertain the wealth of individuals and families may prejudice the results of the enquiry as a whole. Some witnesses take the view that, in certain parts of the country, the investigators would meet with a very hostile reception. Moreover, it would be extremely difficult to estimate the value of jewellery, even if families were prepared to disclose their holdings. Many a person would refuse to reveal his buried wealth for fear of dacoity, apart from likelihood of taxation. In the present stage of India's social progress it would appear advisable to abandon the idea of carrying out enquiries into individual wealth.

National Wealth.

13. Estimates of the National Wealth of countries have in most cases been made by non-officials. Several of the methods adopted by them cannot be followed in India as there are no statistics of the taxation of capital, no estate duty statistics, while the figures of income-tax are not only incomplete but also refer to a small section of the population. Even the "inventory" method will be extremely difficult, if at all possible, to carry out. The problem of valuating "clothing and personal adornment (including jewellery)" as well as the quantity of hoarded wealth and household goods will still remain to be faced. The valuation of land and buildings will need a large staff and, if it is to be carried out with any pretence to accuracy, will require trained men to make it.

Even the valuation of public wealth is beset with difficulties. How will it be possible to place a value upon the national forests? Only a fraction are at present developed and the capitalization of their present annual income would in no way indicate their immense potential value. Without entering into unnecessary details, the above examples should suffice to show that even by the "inventory" method any estimate will be subject to so many qualifications that its calculation is unlikely to be of much utility. As Professor Hamilton has stated, "The difficulties of making an enquiry in this country are very great. It seems to me to be better to make no attempt than to make an attempt which would leave a very large margin of error."

The figure of National Wealth (aggregate or *per capita*) is required for purposes of international comparisons. Sir Josiah Stamp has, however, pointed out that "in the countries to be compared men must care for the same objects in a similar way, and their scale of relative values must be akin. To the extent to which countries diverge in this respect, the comparisons will be invalid.¹" The late Sir Robert Giffen also dwelt on "the dangers of comparisons between nations as to their aggregate wealth". He stated that "it is hardly possible to obtain an account of

¹Sir Josiah Stamp, *The Wealth and Income of the Chief Powers*. A paper read before the Royal Statistical Society, May 20th, 1919.

the wealth of any country on any basis that can give a minutely accurate result, and it is the more difficult to obtain such accounts for any two nations made up in exactly the same way. Before any comparisons can be made at all, then, the methods observed in each case must be carefully followed.¹ Further, as Sir Felix Schuster² has observed, it is necessary to have a statement of the comparative cost of living in various countries in order to arrive at a true test of National Wealth.

14. It would appear that, with the exception of "Family Income", none of the above "tests" constitutes a suitable criterion for measuring the "economic condition of various classes of the people" and that even figures of family income require to be correlated with other factors before they can be of any utility.

15. The best criterion of the economic condition of a family is its "standard of living". This is determined not only by the *money* value of the *real* income but also by the size and composition of the family, the cost of living, indebtedness (if any), customs (social and religious), conventions, habits, etc. This view is confirmed by the opinion of Dr. Bowley who states that "the measurement of the economic condition of a society is completed when the number of its members (classified by age, sex, and civil condition) is known, and the standard of living³ of the selected families (together with their constitution and the nature of the occupation of their earners) is fully described."⁴ For these reasons it is best, in order to gauge the economic condition of the various classes of the people, to select families representative of each class and to ascertain their standards of living. At the same time, there are other subjects which require investigation, because they throw considerable light on the economic well-being of the community, e.g., production⁵, indebtedness, wages, prices, etc.

Production should be studied in relation to the factors influencing it. The production of the agriculturist should be correlated with the nature of the soil, climate, rainfall, irrigation facilities, size and distribution of holdings, amount and nature of capital invested (oxen, implements, machinery, manure), etc. Similarly, the production of the industrial worker should be studied in relation to his personal efficiency (which in turn is affected by diet, housing conditions, sanitation, prevalence of disease, climate, general conditions of work such as hours of labour, regularity or irregularity of employment, etc.) and the nature of machinery and power employed.

¹Sir Robert Giffen, *Economic Enquiries and Studies*.

²Discussion on Sir Josiah Stamp's paper, May 20th, 1919.

³"By the standard of living, then, I understand a composite of the goods and services obtained in nearly the same quantities by normal families whose general mode of life is similar." A. L. Bowley, *The Measurement of Social Phenomena*.

⁴A. L. Bowley, *The Measurement of Social Phenomena*.

⁵It is stated in the draft Report "For purposes of this report we have taken the term as not including the various activities comprised under transportation, exchange of goods, etc., nor those under other 'service utilities', although both these are, in a strictly economic sense, no less productive." I dissociate myself from this narrow and incomplete interpretation of "production" adopted for the purpose of the Report. If the valuation of goods is made at the place of production, one must add the cost of transport, middlemen's and retailers' charges and profits, etc., before arriving at the total value of production. Moreover, domestic, personal and professional services, civil and municipal government, etc., also constitute "production". Any attempt to exclude "service utilities" will give statistics of *only part* of the production of the country.

Examination of Available Material.

16. In the comparatively short time at the disposal of the Committee it has only been possible to make a cursory examination of the material relating to the economic conditions of the people. A careful and detailed examination of the material would require considerable time but, if carried out, would reveal a wealth of valuable information. A careful piecing together of the data would throw considerable light on the economic conditions of the country generally. Little information is available regarding the condition of families and households but this is not surprising as such particulars are usually collected by private investigators in other countries, (e.g., in Great Britain, by Booth, Rowntree, Bowley and others).

Scope and Method of the Economic Survey.

17. We have seen that the central feature of an economic survey should be a full and detailed description of the standard of living of different classes of the people. These standards are measured by collecting and analysing a large number of family budgets.

The collection of a number of detailed budgets sufficiently representative of the various classes and communities in the country will be an immense undertaking. Even a random sample of one in twenty families would mean two and one-half million budgets for British India. Apart from the size of the undertaking, the accumulation of trustworthy information regarding the income and expenditure of families is an exceedingly delicate task which requires patient and careful investigation.¹ Some of the difficulties which arise are described in Appendix B to this note.

Attempts were made by the late Mr. Sedgwick for the Bombay Presidency² and by Mr. Lloyd for Assam³ to secure budgets on an *extensive* scale but the results are admittedly not as satisfactory as those obtained by *intensive* methods. The late Mr. Sedgwick stated that he did not suggest that the figures for any individual family were as accurate as the results attained by the more detailed method employed by the Bombay Labour Office, while Mr. Lloyd found that the four hundred budgets collected from different classes of workers in all districts revealed such great variations that "they are of little use for the formation of any estimate of the extent of poverty and the standard of life. . . . Any attempt at averaging or calculating proportions of income spent on different objects by different classes is out of the question: for such work, much more intensive enquiries over smaller areas would be necessary".⁴

The material amassed in general enquiries of the above nature may afford, at the best, rough conclusions regarding the percentage expenditure on food, rent, etc., but one cannot rely on it for figures of income. If more reliable data are required, then detailed and careful studies of the income and expenditure of "selected" families representative of the various classes into which the population can be grouped must be carried out. I recommend the collection of budgets by the *intensive* method as part of the scheme of economic studies outlined below.

¹"The statistical measure of the standard of living of the Indian population demands enquiries of an exact and difficult nature." J. T. Marten, *Census of India, 1921*, Vol. I, Part I, page 54.

²*Census of India, 1921*, Vol. VIII, Bombay Presidency, Part I.

³*Census of India, 1921*, Vol. III, Assam, Part I.

⁴*Ibid.*

A full description of the size and composition (sex and age) of the family, the occupations and earnings of the individual members, housing conditions (number and size of rooms, light and ventilation, construction, etc.), furniture (if any) and fittings, sanitation, etc., should be attached to each family budget. Moreover, in the case of agriculturists, particulars of the holdings (size, distribution, nature of soil, etc.) and of the produce yielded, methods of marketing, etc., should be added, while for urban workers their hours of labour, a detailed description of their work, the name of the employer (so that their statements may be verified), etc., should be given. Enquiries into indebtedness (e.g., amount of borrowings, rate of interest, terms and method of repayment, security, etc.) should be made both in urban and rural areas, since indebtedness in towns is as great an evil as in villages.

If a village is made the unit of an economic study, a full and detailed description of its economic and social life should be given. The study should embrace general physical conditions, agricultural methods, cost of cultivation, irrigation facilities, village industries, social customs, prevalence of disease, sanitation, education, credit facilities, local administration and transport facilities. It should be as detailed and as thorough as the studies made by Drs. Mann, Slater and Lucas.¹

If the information collected in the economic survey is to be used for the eradication of the economic ills from which the country is or may be suffering, it is very essential that a thorough and detailed examination of the root facts and root causes should be made and those facts laid bare for the guidance of Government and the public. It is only after a thorough diagnosis has been made of the economic ills of the country and the causes of those ills ascertained, that the remedies can be prescribed. A mere investigation into income, wealth, expenditure and indebtedness will never enable us to ascertain the *causes* which produce the canker in the economic life of a country.

Unfortunately, there is a tendency in some quarters to confine the term "economic" within very narrow limits and to associate it too closely with "money" and "material things". Dr. Gilbert Slater observed this tendency when he was in India. "Another warning I would like to utter is that you should not, in your search for economic truth, whether by statistical enquiry or otherwise, put too narrow an interpretation upon the word "economic". Everything that relates to ordinary human life is to some extent within the scope of economic science, nor can any hard and fast rule be drawn between economic and non-economic aspects of life. Recently, Lord Ronaldshay drew attention to certain alarming assertions with regard to the prevalence of hook-worm in Bengal. This perhaps you will regard as more a medical than an economic question. But, as a matter of fact, prevalence of hook-worm is a very important economic fact not only because the vigor and vitality of the population is one of the most important factors in wealth production, but also because the production of wealth itself is only a means to an end, that end being the maintenance and advance of human life, physically, mentally and morally to as high a plane as can be reached."²

¹H. H. Mann, *Land and Labour in a Deccan Village*. Studies Nos. 1 and 2, Humphrey Milford.

G. Slater, *Some South Indian Villages*, Humphrey Milford, 1918.

E. D. Lucas, *The Economic Life of a Punjab Village*, Civil and Military Gazette, Lahore.

²Dr. Gilbert Slater, *The Value of Economic Statistics in India*. Mysore Economic Journal, February, 1919.

18. For the above reasons it is very necessary to emphasize that the term "economic" should be interpreted in its widest sense and the enquiries to be made should not be confined primarily to income, wealth, etc. Hence, I recommend that, in addition to intensive studies of families, classes and areas (e.g., villages), there should also be a series of *intensive* and *extensive* enquiries into such subjects as the influence of disease (e.g., hook-worm and malaria) on physical efficiency, the economic effects of restrictive social customs, the sub-division and fragmentation of land holdings, intensive labour v. light work for longer periods, adulteration of the food supply and other fraudulent practices, sanitation in villages and towns, unemployment among the middle classes, industrial fatigue, welfare work, conditions of employment of shop-assistants, industrial hygiene, absenteeism and its causes, housing and overcrowding, intemperance and the drug habit, women's labour and employment, child labour, economic effects of the regulation of grain exports, labour and housing in hill stations, etc. These intensive studies should form as important a part of the economic survey as the enquiries into the standard of living.

19. The *intensive* method—the method of the microscope—is invaluable for diagnosis. At the same time it is very necessary to take a broader view of the economic situation, to use the *extensive* method—the method of the telescope. The statistical departments of the State are the best means of acquiring information for this purpose. The various administrative departments (agriculture, industries, forests, etc.), should continue to collect statistical returns relating to the subjects which they administer but the statistics should be compiled, not so much for administrative purposes as hitherto but for the general information of the public and for economic analysis.

20. All-India statistics of production (including repair work and services rendered in exchange for a consideration) should be collected by the *extensive* method. Agricultural returns should include, as far as is feasible and consistent with accuracy, the minor crops (excluding vegetables, for which I doubt whether it is possible to secure trustworthy figures). Such statistics of pastoral and dairy production as can be secured with a fair degree of accuracy or to which the degree of error can be assigned, should be collected. It would appear that there are no means of securing this information for permanently settled areas without the employment of a special staff. We have also seen that any attempt to collect comprehensive and approximately accurate statistics of sea fisheries (elsewhere than in Madras), of inland fisheries and of cottage industries would require the services of a large staff of investigators with the requisite technical knowledge. Statistics of forest products should be compiled in as detailed and accurate a manner as possible but reference to the oral evidence of the Inspector-General of Forests and the written and oral evidence of the provincial Forest officers will show that it is not possible to obtain complete statistics of the produce of State Forests. The general opinion of Forest officers is that it is not possible, even with compulsory powers, to secure reliable information regarding the production of *private* forests which cover 78,000 square miles, i.e., one-quarter of the total forest area of British India.¹ Annual statistics of the value of the total production (including repair work) of factories and large-scale establishments should be compiled and

¹British Empire Forestry Conference, Canada, 1923, *Supplementary Statement of Forest Conditions in British India*. Report of Forest Authority in India.

as soon as employers have become accustomed to returns and the Central Bureau of Statistics¹ is fully equipped for the work, a detailed Census of Production of large industrial establishments should be instituted and repeated quinquennially. These establishments should also furnish quarterly the rates of wages and hours of labour of different classes of workers while a quinquennial Wage Census should be instituted by the Central Bureau of Statistics with the co-operation of the factory inspecting staff. The necessary powers of compulsion can be granted to the Bureau by amending the Factories Act instead of introducing special legislation. Intensive studies of wages in rural areas should be carried out quinquennially by provincial bureaux of statistics.² These departments should also be responsible for collecting and checking the returns of retail prices obtained from dealers in cities, chief towns and large industrial centres ; the returns being utilized for framing index numbers of the cost of living in the respective places. Wholesale prices of the chief commodities of commerce (internal and external) should continue to be collected by the Central Bureau of Statistics from the principal wholesale merchants and dealers and should be utilised for framing index numbers to show the variations in the purchasing power of money.

Organization and Agency.

21. The Department of Statistics, now part of the Commercial Intelligence Department, should be enlarged and reconstituted by administrative act to form a Central Bureau of Statistics. The Bureau should be responsible for the Census of Production and Census of Wages of large industrial establishments, wholesale prices, annual statistics of industrial, pastoral and dairy production (so far as they are available), in addition to the present publications of the Department of Statistics. The Bureau should also utilize such of the statistics compiled by provincial bureau of statistics and provincial departments as are reliable and suitable for the construction of all-India figures. The salary of the Director-General in charge of the Bureau should not be subject to the vote of the Legislature as it is very desirable that statistical appointments should not be made the subject of party politics.

22. The Labour Office, Bombay, and the Labour Statistics Bureau, Burma, should be expanded into Provincial Bureau of Statistics. In each of the other provinces there should be a bureau of statistics. The bureaux should collect the provincial returns made by the administrative departments and publish the statistics of production (as far as available), retail prices, rents, wages of agriculturists and craftsmen, trade unions, industrial disputes, etc., and construct and publish cost of living index numbers for the chief towns and industrial centres. The Directors of the Bureaux should be recruited from the senior officers of the Imperial Services, preference being given to a settlement officer, a member of the agricultural service or a senior officer of the co-operative or industries departments.

23. The Central and Provincial bureaux should be responsible for the statistics collected by the *extensive* method.

24. The *intensive* enquiries should be supervised by provincial Boards of Economic Enquiry, composed of non-officials and officials, and consti-

¹Vide Section "Organization and Agency".

²Ibid.

tuted on the lines of the existing Punjab Board.¹ The Board should be quite distinct from the organisation created for the *extensive* study, *viz.*, the departments of statistics, which would be *official* bodies. Co-ordination between the Bureau and the Board should be secured by the appointment of the provincial Director of Statistics as an *ex-officio* member of the Board. The Secretary of a Provincial Board should have the status of a fairly senior Collector and, if his services are required for part-time only, he could be given a special pay of Rs. 500 per mensem.

Agency.

25. The success of the enquiries and the value of the information collected will depend to a large extent upon the efficiency of the agency employed in the collection of the primary data. The most elaborate organisation may be set up but unless the investigators responsible for collecting the facts are intelligent, trustworthy, conscientious, tactful, possessed of common sense and in every way efficient, the information obtained may not be worth the paper upon which it is printed. Too much emphasis cannot be laid upon the paramount importance of securing the right type of persons as investigators.

Unfortunately, little attention has been given hitherto to this aspect of the collection of statistics, while owing to persistent inaccuracies the confidence of the commercial community, economists and the public has been shaken in many of the figures secured through the existing agency.

Dr. Gilbert Slater, late University Professor of Economics, Madras, drew attention to this subject in an article upon "The Value of Economic Statistics in India" contributed to the Mysore Economic Journal February, 1919. "I do not think that I need elaborate my contentions that an active economic policy is the duty of the State, that such a policy should be guided by accurate knowledge, and that the knowledge must be gathered largely in a statistical form. But I should like to utter two warnings. The first is that in statistics quality is of great deal more importance than quantity. You can gather together statistical information on a vast scale, and then hand the facts and figures collected to a body of experts who will collate them and draw the inferences from them which they are capable of yielding; and then you can have economic experts to advise on policy which the results indicate as advisable. But the whole of this work is vitiated if the clerks or village officials, who in the first place gather the information, fail to put down what is actually the fact. It appears to me that in India it generally happens that the first collector of statistical information has very little appreciation of the object for which the statistics are required and very little conscientiousness in the matter of accuracy." After citing one or two examples of gross misstatements of fact, Dr. Slater states: "I am inclined to think that this weakness is very widely prevalent". I endorse this opinion.

It has been said "Let us collect some rough figures; even though at first they may not be accurate; in the course of time they will improve."² This is a very plausible argument and at first sight seems

¹W. H. Myles, *The Board of Economic Enquiry, Punjab*. Article in the *Indian Journal of Economics*, January, 1925.

²On the contrary, it happens very frequently that when new statistical work is undertaken, strict attention is paid to it by the subordinate reporting agency, and superior officers show an interest in the work of supervision; in the course of time, the supervision frequently slackens owing to additional duties, while the work of the subordinates becomes routine and frequently more careless.

reasonable. Any one acquainted with the collection of statistics in this country, however, knows that so long as an ill-qualified agency is responsible for the collection of primary data, no appreciable improvement in the accuracy of the returns is likely to result. The agricultural statistics of the permanently settled areas and vital statistics in a great part of the country are standing examples of the inadvisability of entrusting the collection of statistics to inefficient persons—although the existing agency has been engaged upon the work of collection for decades there has been no appreciable improvement nor will the statistics ever improve until efficient machinery is instituted.

26. It has been suggested, especially by a few revenue officers, that the collection of statistics of production (agricultural, dairy and pastoral, etc.) wages, prices, etc., by the *extensive* method should be entrusted to the subordinate revenue staff, (*patwaris, kanungos, tahsildars, etc.*), or to the supervision of persons of the rank of *kanungo* or *tahsildar* working under the Revenue Department.

It is natural that revenue officers should place great confidence in the work of their subordinate staff. The latter may be most successful in collecting information regarding revenue. There are, however, great objections to their being employed as one of the main agencies in the economic enquiry. In the first place, it is common knowledge that one of the chief functions of the local revenue officer is to collect information for revenue purposes. The employment of such an agency for enquiries in connection with the economic survey will immediately lead people to believe that the additional information is required for the purpose of taxation and they will accordingly hesitate to give correct information. The *patwari* may secure figures but it is doubtful whether they would be of value.

The recommendation made in the draft Report that the statistics of production of minor crops, of vegetables (value), of fruit (quantity sold), of live-stock, meat, hides and skins, of private forests, of sea fish (outside the area of the curing yards), of fresh-water fish and of mining on a small scale should be ascertained by the local revenue agency, supervised in some cases by a special staff of inspectors (of the rank of *kanungo*) working under the Revenue Department; that the valuation of agricultural produce should be made by an office *kanungo*, the valuation of land by *tahsildars* and that prices and wages (other than in factories) should be collected by the Revenue Department. I dissociate myself entirely from these recommendations. It is generally recognised that the fewer statistics the local revenue agency is called upon to prepare and the simpler the information required, the more accurate his figures are likely to be. The *patwari* can be relied upon to make observations of things that are daily under his eyes, *e.g.*, the number of cattle or the number of fruit trees in the village, but I should not place any confidence in figures he may supply of, say, the *value* of vegetables produced, of the quantity of fish caught or the quantity of minerals produced on a small scale.

Moreover, there is no subordinate revenue agency in the permanently settled areas. Suitable and efficient machinery could only be employed at a prohibitive expenditure.

The agency for the collection of statistics in the *extensive* survey (*i.e.*, statistics of production, wages, prices, etc.), should be persons belonging to or working under the direct supervision of the department or branch of administration with which the statistics are associated. For example, the work of collecting and compiling agricultural statistics should be taken over gradually from the Revenue Departments by the Departments of Agriculture. The latter could gradually increase the number of agricultural assistants (on a salary of Rs. 100—10—300) who would carry out their ordinary duties, (*viz.*, propaganda work, distribution of improved seed, etc.) and during harvest operations would carry out crop-cutting experiments and furnish crop reports, through the Deputy Director of Agriculture, to the Director of Agriculture. The valuation of agricultural production and the responsibility for the statistics connected with agriculture, should rest with the latter. Similarly, statistics of the production of small-scale industry (so far as it is possible to collect them) and of the wages of craftsmen, etc., should be collected by the subordinate staffs of the provincial departments of Industries or the Co-operative departments or by a special staff of investigators¹ working under these departments. Forest statistics should in the same way continue to be collected by the officers of the Forest Department, etc.

27. The late Mr. Sedgwick suggested that honorary correspondents should be employed for the collection of a large number of family budgets ; *e.g.*, not less than 100,000 budgets for the Bombay Presidency, which would require the services of about one thousand honorary correspondents. There are certain obvious objections to the employment of such persons. It would not be possible to give them any training and they would have to act on written instructions. They would probably resent interference and supervision unless it was that of the Director in charge of the enquiry. A correspondent may undertake the work and give it to less efficient persons to carry out. Even though the correspondents may be carefully selected, the character of the returns would depend on the interest taken in the enquiry and on the efficiency of their work. It is suggested that the hundred budgets to be furnished by each correspondent should be collected within three months. With regard to this it is obvious that it would not be possible to place the families under observation for any length of time and it is probable that the budgets would be collected by questioning families, recording their answers and accepting them for what they are worth—a most unsatisfactory method. Further, while it may be possible to obtain a thousand honorary correspondents in some of the progressive provinces, it is doubtful whether they would be forthcoming in others and it is unlikely that the distribution of correspondents will be so wide as to give a representative sample of the country. The material collected in a general enquiry of this nature may be able at the best to afford rough conclusions regarding the percentage expenditure on food, rent, etc., but one could not rely on some of the figures given ; for example, those of income.

28. Much of the success of the *intensive* enquiries will depend on the person selected as Secretary of the Provincial Board of Economic

¹They should be of the rank and status of the circle officers contemplated in the scheme of the Industrial Commission—persons engaged on Rs. 200—20—300—25—500. The investigators should be selected not only for their ability but also for their knowledge of the practical side of small-scale industrial production.

Enquiry and on the investigators. The latter should possess tact, ability and common-sense; preference should be given to those who have practical experience in work which brings them into touch with the economic life of the people and who have been trained in statistical and economic research. It is obvious that for an enquiry into health, disease and sanitation, the persons selected should be recruited, as far as possible, from the sanitary department and the medical service. Members of the Punjab Board have admitted the unsatisfactory nature of some of the work carried out and they agreed that, with increased remuneration, a better type of investigator could be secured. Accordingly, I recommend that the scale of salaries to the investigators should be at least the same as that paid in the recent industrial survey of the United Provinces, viz., Rs. 200—20—300—25—450. One cannot emphasize too greatly the importance of securing well-qualified persons as Secretary and investigators, as the value to be attached to the studies will depend entirely upon the efficiency of the work.

General observations on the employment of Statistical Methods.

29. I find it essential to make certain general observations on the employment of statistical methods. In this Note it has been necessary to emphasise the importance of accuracy in collecting data. Accuracy in statistical science does not mean that the data collected should be accurate to the last integer; on the contrary, statistics deal with large numbers and, unlike accountancy, "statistical results are very generally estimates rather than exact statements" but "it is a matter of the very greatest importance to learn to what degree of accuracy statements can be trusted."¹ There is a great difference between a statistical estimate framed on a scientific basis and a guess. Estimates founded on more or less shrewd guesses have no authority unless their degree of accuracy can be ascertained. Sir George Knibbs has stated that "some so-called estimates are little better than examples of statistical charlatanism."

For the above reasons and in order to minimise the incorrect use of statistics, the definition, meaning and limitation of all statistics and estimates should be clearly given. Estimates, as distinct from more or less exact figures, should be printed in italics and, as far as possible, the margin of error should be stated.

The employment of "formulae" for estimating the production of vegetables, meat, etc., has been suggested in the draft Report. Great care should be exercised in handling estimates based on formulæ; however slight the variation may be from actual facts, the differences are multiplied by the total number of observations. For example, in the United Provinces Industrial Survey (1924), the investigators have endeavoured to "estimate" the supply of hides and skins by assuming that, of the number of cattle, sheep and goats recorded in the Cattle Census, a certain percentage die every year. One investigator has assumed two per cent., while another has assumed four per cent., as the annual mortality; the latter would credit India with twice the number of hides and skins than the former.

¹A. L. Bowley, *Elementary Manual of Statistics*.

Witnesses were generally of opinion that in the economic survey it would be better to collect fairly accurate data or statistics to which the degree of accuracy can be assigned, even on a limited scale, rather than a mass of data of varying degrees of accuracy, extending over a wider area. By all means, let us have quantity as well as quality but if there is a choice between quantity and quality, the latter is the more essential in statistical measurement.

Dr. Bowley has made some remarks regarding "the collection of data in connection with some social inquiry—for example, the amount of unemployment, the physique of children, the condition of a district as to overcrowding, or the more elaborate investigations that have been made as to general social conditions in London, York, Dundee, West Ham and Birmingham.....It is well not to draw a single definite line, and say above this line is health, below it weakness, or above this mark competence, below poverty, but to remember that health, poverty, unemployment, overcrowding, etc., are relative.....*All statistics which cannot bear full criticism should be put aside, even if the inquiry has to be given up; imperfect statistics on such questions are often only productive of harm.*¹ In publication, the whole method of inquiry should be clearly and frankly shown, the tabulations should be perfectly clear, and the statistics of the inquiry be definitely separated from other parts, which deal (for example) with supposed causes and suggested remedies."²

Finally, he says, "even if statistics were complete and perfect, their use would be definitely limited to one aspect of a problem, that is, the numerical aspect. Statistical results are essential, when judgment is to be formed on any questions that involve numbers, quantities or values, but they must always be brought into relation with the personal, political, aesthetic or other non-quantitative considerations that may be of greater importance in deciding on a course of action. Statistics only furnish a tool, necessary though imperfect, which is dangerous in the hands of those who do not know its use and deficiencies. A knowledge of methods and limitations is necessary, if only to avoid being misled by unscrupulous or unscientific arguments."³

¹My italics.

²A. L. Bowley, *Elementary Manual of Statistics*.

³*Ibid.*

Summary of Conclusions and Recommendations.

My principal conclusions and recommendations are :—

(i) That the central feature of an economic survey of the various classes of the people should be a full and detailed description of their standard of living which should be measured by analysing a large number of family budgets collected by *intensive* investigation. (Paras. 15 and 17).

(ii) That the *money* value of *real* income of a family is no true index of its economic condition and that such a figure requires to be correlated with the size and composition of the family, the relative cost of living, indebtedness, etc., before conclusions can be drawn regarding the economic position of the family. (Para. 9).

(iii) That, in the present stage of India's social and economic development, it would be inadvisable to conduct enquiries into individual wealth. (Para. 12).

(iv) That estimates of National Wealth and National Income, whether aggregate or *per capita*, would be subject to many qualifications and limitations, that they would not throw light upon the economic condition of the various classes and that comparisons between India and Western countries based upon such figures would be vitiated by the entirely different economic conditions prevailing in the countries compared. (Paras. 10, 11 and 13).

(v) That, in addition to intensive studies of families, classes and areas (e.g., villages), there should also be a series of *intensive* and *extensive* enquiries into factors affecting the economic well-being of the community, e.g., studies of the influence of disease on physical efficiency, unemployment among the middle classes, etc. (Para. 18).

(vi) That statistics of production (including repair work), prices, wages, rents, etc., should be collected by the *extensive* method. (Para. 20).

(vii) That so long as the existing method of crop reporting is employed, India must not expect returns comparable in accuracy with those of countries where either direct returns are made or estimates are framed by experts.

(viii) That, in order to bring about an improvement in agricultural statistics, the following measures should be taken :—

(a) the responsibility for the collection and publication of agricultural, pastoral and dairy statistics should be transferred gradually from the provincial Revenue Departments to the provincial Departments of Agriculture,

(b) the number of crop-cutting experiments should be increased as much as possible, and, as soon as a suitable machine is invented, machinery should be employed for crop-cutting.

(c) the number of agricultural assistants (monthly pay, Rs. 100—10—300) should be increased by two or more in each district (except in permanently settled areas where there should be an addition of eight assistants to a district) ; they should engage in the ordinary duties of an agricultural assistant, (*viz.*, propaganda work, the distribution of improved seed, etc.) and during harvest operations should carry out crop-

cutting experiments and furnish crop reports, through the Deputy Director of Agriculture, to the Director of Agriculture,

(d) the returns of the condition of crops should be submitted by the village revenue officials through their superior officers to the Director of Agriculture and the returns should *not* be expressed in " *annas* " but as estimates of the actual quantities yielded per acre,

(e) the crop-cutting experiments should be utilised for framing *not* a normal yield but a quinquennial " moving average " ,

(f) the statistical work of the local revenue officers should be more closely and carefully supervised.

(ix) That such statistics of pastoral and dairy production as can be secured with a fair degree of accuracy should be collected. (Para. 20).

(x) That statistics of sea fisheries should be collected in Madras. (Para. 20).

(xi) That special *intensive* enquiries into the production of cottage industries should be made as far as possible by a special staff of circle officers attached to the Industries or Co-operative Departments. (Para. 26).

(xii) That it is not possible to secure complete statistics of the produce of State Forests and reliable information regarding the production of *private* forests. (Para. 20).

(xiii) That annual statistics of the value of the total production (including repair work) of factories and large-scale establishments should be compiled and eventually a detailed Census of Production should be instituted and repeated quinquennially. (Para. 20).

(xiv) That returns of rates of wages and hours of labour should be secured quarterly from factories, etc., that a quinquennial Wage Census should be undertaken by the Central Bureau of Statistics and that *intensive* studies of wages in rural areas should be carried out quinquennially by provincial bureaux. (Para. 20).

(xv) That the provincial bureaux should be responsible for the collection of retail prices and the Central Bureau for the collection of wholesale prices of the chief commodities of commerce. (Para. 20).

(xvi) That index numbers of the cost of living should be prepared for cities, towns and industrial centres. (Para. 20).

(xvii) That the Department of Statistics should be enlarged and reconstituted by administrative act to form a Central Bureau of Statistics. (Para. 21).

(xviii) That the salary of the Director-General should not be subject to the vote of the Legislature. (Para. 21).

(xix) That a statistical advisory council consisting of not less than four and not more than eight honorary members should be appointed by the Governor-General in Council.

(xx) That the Labour Office, Bombay, and the Labour Statistics Bureau, Burma, should be expanded into Provincial Bureaux of Statistics and that in each of the other provinces a bureau of statistics should be formed. (Para. 22).

(xxi) That the central and provincial bureaux should be responsible for the statistics collected by the *extensive* method. (Para. 23).

(xxii) That the *intensive* studies should be supervised by provincial Boards of Economic Enquiry constituted on the lines of the existing Punjab Board. (Para. 24).

(xxiii) That the status of a Secretary of a provincial Board should be that of a fairly senior Collector. (Para. 24).

(xxiv) That the provincial Director of Statistics should be an *ex-officio* member of the Board in order to secure co-ordination between the Board and the Bureau. (Para. 24).

(xxv) That great care should be exercised in securing the right type of person as investigator as the success of the enquiries will depend upon the efficiency of the agency employed. (Para. 25).

(xxvi) That the subordinate revenue agency is unsuitable for enquiries in connection with an economic survey and that the agency for the collection of statistics in the *extensive* survey (*i.e.*, statistics of production, wages, prices, etc.) should, as far as possible, be persons belonging to or working under the direct supervision of the department or branch of administration with which the statistics are associated. (Para. 26).

(xxvii) That an Official Year Book for British India should be published by the Central Bureau of Statistics ; joint responsibility for the production is inadvisable.

(xxviii) That a Census and Statistics Act is unnecessary as the departments of statistics can be established by executive act and that the necessary compulsory powers for securing returns from factories and large industrial establishments can be furnished by amending the Factories Act. (Paras. 20 and 21).

A. R. BURNETT-HURST.

Since the above dissenting Note was written and presented to my colleagues, I have received their Final Report which contains a few additions, alterations and omissions as compared with the draft. I am unable at this late stage to deal with the points now raised, with the exception of the recommendation that the establishment of a subsistence level by the Central Bureau of Statistics should be considered. Perusal of the oral evidence will show that witnesses regard this as undesirable. Moreover, no country has published *official* figures of a subsistence level.

A. R. BURNETT-HURST.

Dated Simla, the 10th August 1925.

APPENDIX A.

Classification of the Population.

The terms of reference suggest the adoption of some *a priori* method of grouping the population in its economic activities. There are many lines of division which can be drawn according to the point of view taken. In an agricultural country classification is by no means easy. In India, religion and race are important vertical divisions but they are of little use in a general economic enquiry.

Occupation enables clear lines of demarcation to be drawn but with occupation the function and economic status of individuals vary and difficulties arise through an individual exercising two or more functions, *e.g.*, an agriculturist may be both a rent receiver and a rent payer.

An alternative classification is to grade individuals or families according to their income. Classification by income alone may be misleading. There are skilled artisans in cities in receipt of higher money incomes than clerks or teachers, yet in social status the latter would rank higher and their standard of living would be entirely different. Again, grading by family income would have to recognise the differences in the sex and age composition of the household.

It would appear that none of these methods of classification is satisfactory but by a judicious combination of occupation, economic functions and status, with a sub-classification by incomes, it may be possible to arrive at a fairly acceptable basis of division. It should, however, be recognised that when one is dealing with the inhabitants of a sub-continent, lines of demarcation are not sharp and that classes merge into each other until lines become blurred.

The classification which I recommend for an economic survey is one framed very largely on the suggestions of Mr. E. A. H. Blunt and is as follows :—

RURAL AND SEMI-RURAL AREAS.

I.—*Agricultural and Pastoral pursuits.*—A.—*Ordinary cultivation.*—

- (a) Non-cultivating landlords.
- (b) Cultivating landlords and tenants holding favoured tenures.
- (c) Ordinary tenants.
- (d) Estate servants.
- (e) Farm servants and field labourers.

B.—*Plantations (tea, coffee, etc.).*—

- (a) Supervising staff.
- (b) Clerical staff.
- (c) Skilled workmen.
- (d) Unskilled labourers.

II.—*Trade.*—

- (a) Owners.
- (b) Conservators.
- (c) Rangers.
- (d) Guards.
- (e) Contractors.
- (f) Wood-cutters and exploiters.

D.—*Raising of Live-Stock.*—

- (a) Herdsman proprietors, breeders and owners.
- (b) Servants, *i.e.*, herdsmen, shepherds, goatherds.

II.—*Fishing and Hunting.*—

- (a) Fishermen.—
 - (i) Marine.
 - (ii) Fresh water.
- (b) Hunting.

III.—*Mining.*—

- (a) Supervising staff.
- (b) Clerical staff.
- (c) Skilled workmen.
- (d) Unskilled labourers.

IV.—*Petty Occupations in villages.*—

- (a) Schoolmasters, accountants and postmasters.
- (b) Traders and dealers in money.
- (c) Craftsmen :—potters, basket-makers, workers in wood, metal, etc.
- (d) Washermen, barbers, etc.
- (e) Carters, boatmen, pack animal owners and drivers.
- (f) Rice pounders and flour grinders.
- (g) Watchmen.
- (h) Sweepers and scavengers.
- (i) Miscellaneous unskilled workers.

V.—*Jungle Tribes.*VI.—*Wandering Tribes.*

URBAN AREAS.

I.—*Industry.*—

- (a) Supervising staff.
- (b) Clerical staff.
- (c) Skilled workmen.
- (d) Unskilled labourers.

II.—*Trade.*—

- (a) Employees of banks, commercial and mercantile houses—
 - (i) Supervising staff.
 - (ii) Clerical staff.
 - (iii) Skilled workmen.
 - (iv) Unskilled workmen.
- (b) Dealers and commission agents.
- (c) Employees of large retail establishments—
 - (i) Supervising staff.
 - (ii) Assistants.
- (d) Petty shopkeepers.

III.—*Public Administration* (State and Municipal, Army, Navy, Police and Transport).—

- (a) Gazetted officers.
- (b) Non-gazetted officers.
- (c) Clerical staff.
- (d) Menials.

IV.—*Professions and Liberal Arts*.—

- (a) Superior :—priests, ministers, lawyers, medical practitioners, professors, etc.
- (b) Subordinate :—temple or church servants, lawyers, clerks, midwives, etc.

V.—*Domestic Servants*.—

- (a) Superior :—cooks, chauffeurs, etc.
- (b) Subordinate :—sweepers, coolies, etc.

VI.—*Unproductive*.—

- (a) Respectable :—pensioners, persons living principally on their incomes.
 - (b) Disreputable :—inmates of jails, beggars, prostitutes.
-

APPENDIX B.

Difficulties of collecting Family Budgets and Statistics of Income.

It is by no means easy to collect *reliable* and *typical* budgets, even in Western countries. The diversity in castes and creeds resulting in differences in customs and in food consumption, the general illiteracy of the people and failure to keep accounts, make the task of a social investigator in India very difficult. The experiences of Dr. Lucas and Mr. Bhalla in the Punjab and personal experiences in Bombay City confirm this view.¹

Dr. E. D. Lucas in his "Economic Life of a Punjab Village" writes "The problem of family budgets is a very difficult one. The people are mostly ignorant, they prepare no budgets and never have an exact idea regarding either income or expenditure. The produce, if raised in the land belonging to the cultivator himself, is never measured exactly and all that the enquirer can get, are approximate figures as estimated by the farmer himself. A Jat of Sherpur, when questioned as to how much wheat he got out of the last harvest said, "*Koi char panj sau man*", about four or five hundred maunds, local measure (kham) or from 200 to 250 bushels. Which of the figures should be taken as correct and would the average do? When converted into money, the error may be so great as to seriously affect the estimates". "One who knows the Punjab villager and his attitude of suspicion and distrust to all strangers, will realize how difficult it is to be absolutely sure of such statistics, especially when they deal with the family budget. That chapter alone involved several weeks of very diligent work".

Mr. Ram Lal Bhalla in his "Economic Survey of Bairampur" refers in the following terms to three family budgets which he gives; "The zemindar or better the villager has no idea of keeping accounts and never keeps them. When questioned, he furnishes information from memory quoting approximate figures in round numbers. A man when questioned as to how much *gur* he produced, said *koi pandran bis man*, about 15 or 20 maunds. No pretension can be or has been made with regard to the accuracy of these figures from a scientific point of view".

Over 90 per cent. of the families are unable to record their expenditure, hence it is necessary to appoint investigators either to visit and question them—a method which gives rise to omissions, misstatements, discrepancies, etc.; or to keep them under observation for a considerable time and ascertain the required information by both direct and indirect enquiries—a more satisfactory method.

The budgets should, on the one side, give a complete account of all the income (including privileges and payments in kind) and, on the other side, should contain a complete statement giving full details of expenditure and stating quantities where the goods purchased are measurable.

Budgets of agriculturists and persons living in rural areas should be recorded for the agricultural year if they are to give a correct idea of consumption. It is well-known that, immediately after the harvests, the rural classes consume freely; they have more to spend after their crops are sold. The nature of consumption also differs at different times of the year.

Mr. Pillai² has pointed out the difficulty of ascertaining the income of the agricultural population as measured solely in cash. The evaluation of pay-

¹A. R. Burnett-Hurst, *Labour and Housing in Bombay*, P. S. King and Son, 1925.

²"Besides, all calculations as to the money value of incomes are open to the objection that, even at the present day, money enters but little into the life of the Indian agriculturist, who produces most of the necessaries of life himself. It is only the surplus left after satisfying his needs that he offers for sale, and this, again, not in a free and open market, but to the money lending merchant of his village, who sets off the commodities offered by the agriculturist against the amount that he owes or else gives the peasant a book credit in his accounts. The attempt, therefore, as Mr. Thornton has pointed out to give a money value to these primitive transactions and formulate the financial condition of the peasantry in terms of cash receipts and payments, must be a very hazardous undertaking".

P. Padmanabha Pillai, *Economic Conditions in India*, Routledge and Sons, 1925.

ments in kind (*e.g.*, grain) and in services, of free fuel (*e.g.*, firewood and cowdung converted into fuel cakes), of free dwellings, etc., is by no means an easy task. Even when a figure of money income is obtained, it must be remembered that actually the *ryots* do not possess such *money* income.

When one proceeds to collect information from persons higher up the social scale, the difficulties of the task increase. The middle and upper classes in most countries resent enquiries regarding their income and in this respect India is no exception. Many petty shopkeepers and traders do not keep accounts and there are no means of verifying their statements of income.

Most persons of the middle and upper classes will hesitate to disclose their income for fear of increased taxation. It is true that some may be prepared to make statements but it will be to their interest to minimize their receipts. It is very doubtful whether it will be possible to ascertain the income of money lenders, money changers, etc., in large villages and towns. If compulsory powers are employed, the statements made would probably be purely fictitious.

Even among the working classes, it will be extremely difficult to secure information from persons engaged in certain occupations, *e.g.*, grass-cutters, road-menders and persons engaged in repair work. Coolies, hawkers, *gharriwalas*, for example, have irregular work and their earnings fluctuate considerably. It is frequently the case that they cannot give a figure of their earnings. A considerable proportion of the workers in industries and mines are semi-agriculturists who work in the towns for part of the year, returning to their villages when their labour is required for agricultural operations. It is not easy to ascertain the proportion of annual earnings which they derive from industry and from agriculture respectively. Many persons (*e.g.*, domestic servants) receive free food, free lodging and sometimes free uniform or clothing together with any "extras" which their occupation affords; the evaluation of these forms of income is no easy task. It is impossible to ascertain the amount of the so-called "perquisites" of the petty officials (*e.g.*, the *patwari*) although it is a well-known fact that it forms a substantial portion of his income. These instances suffice to show that an enquiry into income is a delicate task and can only be carried out successfully by patient, diligent work by a trained investigator. Enquiries among the middle and upper classes are not likely to meet with any degree of success, while even information secured from the lower classes is likely to give the minimum amount of income, the under-statement in many cases being unknown.

The "expenditure" side of the budget also presents difficulties. Even when the details of expenditure are obtained, it will only be possible to draw general ideas from them. The articles of food may be called by the same name in different budgets, yet will probably differ in quality and other respects. Clothing is even more difficult to measure accurately owing to differences in variety, in texture, in personal taste, etc. The expenditure on miscellaneous items such as "drink", "drugs", "tobacco", etc., is frequently omitted from budget records owing to the impossibility of getting admissions from people of the amount spent under these heads. It will be necessary in India to include expenditure on "religious and social ceremonies" which is said to figure prominently in the budgets of certain classes of the people.

Considerable caution must be exercised in making comparisons between budgets collected. Numerical measurements of the differences in the details of expenditure cannot be made even between families of the same age and sex composition, occupation and income unless the margin of error can be assigned. One can, however, draw general conclusions as to the proportionate expenditure on food, clothing, rent, fuel and light and miscellaneous items. Such information enables one to place, roughly, families in different planes of economic prosperity. The data collected, even in other countries, does not admit of definite

¹W. H. Moreland, *The Revenue Administration of the United Provinces*, page 77, Pioneer Press, 1911.

numerical conclusions being drawn. Dealing with this subject, Dr. Bowley has stated, "When the classes are much separated in habits, income, place, nationality, or date, it is very doubtful whether numerical comparisons can be made; it is best to choose, on arithmetical principles, representative families of defined classes, and then to tabulate simply the budgets, describing as exactly as possible the commodities, without attempting to say that one class consumes 10 per cent. more than another. It is only in the cases where the differences in the general nature of expenditure can be shown to be slight that numerical comparisons of cost of living are valid. Extreme care is needed in interpreting such a statement, as that the cost of living is 50 per cent. higher in U. S. A. than in England¹".

With regard to international comparisons, he writes "It is very doubtful whether numerical comparisons can be safely made between two countries; neither housing, clothing nor food are comparable, the importance of that part of income which is not wages varies greatly, and many things must be bought in one country which are unnecessary or are home-made, home-grown, or obtained freely in another. Nor should we compare industrial classes, such as workmen engaged in building or engineering or printing, in different countries, since methods and conditions of work vary enormously, unless we make very broad allowances for the possible effects of such variation²".

¹A. L. Bowley, *The Measurement of Social Phenomena*.

²*Ibid.*

APPENDIX C.

Cost.

A rough estimate of the expenditure involved in carrying out the recommendations made in the Note is as follows:—

COST TO BE MET FROM IMPERIAL REVENUES.

Central Bureau of Statistics.

The additional annual expenditure involved by the proposal to convert the present Department of Statistics into a Central Bureau of Statistics would be, approximately, Rs. 70,000 per annum. The details are as follows:—

	Rs.
Director-General of Statistics (Rs. 2,500—100—3,000)	
Average pay Rs. 2,750	33,000
1 Assistant Director (in place of the present Director of Statistics) Rs. 1,500—50—2,000. The additional expenditure would be Rs. 500 per mensem ..	6,000
20 Compilers (Rs. 50—3—125). Average pay Rs. 87½ ..	21,000
2 Typists (Rs. 50—3—125). Average pay Rs. 87½ ..	2,100
Additional expenditure on allowances and contingencies, say,	6,000
	<hr/>
Total ..	68,100
	<hr/>

The above sum *excludes* the cost of the quinquennial Census of Wages and Census of Production and *all* printing charges.

COST TO BE MET FROM PROVINCIAL REVENUES.

I. Salaries of Agricultural Assistants appointed for crop-reporting and crop-cutting experiments. Rs. 100—10—300. Average pay Rs. 150.

(In Bengal, Bihar and Orissa and other permanently settled areas, eight assistants should be appointed to a district. In other provinces, two assistants to a district.) The annual expenditure would be as follows:—

	Rs.
For example, United Provinces	1,72,800
Punjab	1,04,400
Bengal	4,03,200

II. Salaries of circle officers for intensive studies into cottage and small-scale industries. Scale— Rs. 200—20—300—25—500.

It should be left to each provincial government to determine the number of officers to be employed, *i.e.*, the scheme should be “ elastic ”.

III. Provincial Board of Economic Enquiry.

Secretary—full-time ; Rs. 2,000—50—2,500,			
average pay	..	..	Rs. 2,250 per mensem.
		<i>or</i>	
part-time ; special pay	..	..	Rs. 500 per mensem.
Investigators (Rs. 200—20—300—25—450).			
Average pay	..	..	Rs. 300 per mensem.
Clerks (Rs. 50—100). Average pay	..	..	Rs. 75 per mensem.
Menials. Average pay	..	..	Rs. 15 per mensem.

The number of investigators, clerks and menials will depend entirely on the number of investigations undertaken by each Provincial Board and the amount of tabulation, etc., involved.

The cost involved by an investigator on Rs. 200 per mensem making a detailed study of one village and a general study of, say, three others for a period of a year would be, including the printing of the report of his studies, Rs. 4,400, i.e., Rs. 1,100 per village. This excludes the general establishment charges.

IV. Provincial Statistical Bureaux.

I suggest that the staff and expenditure of each of the provincial bureaux, other than in Bombay and Burma where the Labour Offices should assume the functions of the bureaux, should be as follows:—

	Rs.
1 Provincial Director of Statistics (Rs. 2,000—50—2,500).	
Average pay Rs. 2,250	27,000
1 Head Investigator (Rs. 500—50—1,000). Average pay	
Rs. 750	9,000
3 Assistant Investigators (Rs. 250—25—500). Average	
pay Rs. 375	13,500
2 Women Investigators (Rs. 150 each)	3,600
1 Superintendent (Rs. 250—25—500). Average pay	
Rs. 375	4,500
1 Stenographer-typist (Rs. 200—10—250). Average pay	
Rs. 225	2,700
3 Typists (Rs. 50—3—125). Average pay Rs. 87½	3,150
1 Assistant Librarian (Rs. 50—3—125). Average pay	
Rs. 87½	1,050
25 Compilers (Rs. 50—100). Average pay Rs. 75	22,500
6 Menial Staff. Average pay Rs. 15	1,080
Conveyance allowance (to six investigators at Rs. 50 each)	3,600
Contingencies and travelling allowance, say,	10,000
Total	1,01,680

Excluding all printing charges, the annual expenditure involved in each province would be about a lakh of rupees.

C O N T E N T S .

PART I.

	PAGE.
A.—List showing the names of witnesses who submitted written statements .	1
B.—List of witnesses orally examined	5
C.—Questionnaire	8
D.—Evidence taken at :—	
Allahabad	51
Calcutta	191
Rangoon	435
Index	i-ii

PART II. (BOUND SEPARATELY.)

D (contd.)—Evidence taken at :—

Madras	1
Poona	309
Simla	621
Index	i-ii

LIIIIEEC

A

LIST SHOWING THE NAMES OF WITNESSES WHO SUBMITTED WRITTEN STATEMENTS TO THE INDIAN ECONOMIC ENQUIRY COMMITTEE.

<i>Province.</i>	<i>Name of witness.</i>
Assam	1. Rai Bahadur K. L. Barua, Esq., B.L., F.R.E.S., Director of Agriculture and Industries.
Bengal	2. Bengal Chamber of Commerce, Calcutta. 3. R. W. Brock, Esq., Chief Assistant Editor, "Capital," Calcutta. 4. K. C. Roy Chaudhri, Esq., M.L.C., Bengal. 5. R. S. Finlow, Esq., B.Sc., F.I.C., Director of Agriculture, Bengal. 6. Marwari Chamber of Commerce, Calcutta. 7. J. C. Mitra, Esq., F.S.S., F.R.E.S., Professor of Economics and Commerce, Calcutta. 8. Rai Bahadur, J. M. Mitra, M.A., Registrar of Co-operative Societies, Bengal. 9. K. M. Purkayastha, Esq., Secretary, Indian Mining Federation, Calcutta. 10. Rajani Kanta Das, Esq., M.A., M.Sc., Ph.D., Santiniketan. 11. B. Ramachandra Rau, Esq., M.A., L.T., Lecturer in Economics and Commerce, Calcutta University. 12. S. Vaidyanath Ayyar, Esq., M.A., Dip. Econ., Lecturer in Economics and Politics, University of Dacca. 13. A. T. Weston, Esq., M.Sc., M.I.C.E., M.I.E., Offg. Director of Industries, Bengal.
Bihar and Orissa ..	14. H. R. Batheja, Esq., I.E.S., Professor, Ravenshaw College, Cuttack. 15. B. A. Collins, Esq., I.C.S., Director of Industries. 16. A. R. Dicks, Esq., Conservator of Forests. 17. A. C. Dobbs, Esq., Director of Agriculture. 18. Prof. C. J. Hamilton, M.A., Patna University. 19. Prof. E. A. Horne, M.A., Professor of Economics, Patna College. 20. J. A. Hubback, Esq., I.C.S., Commissioner, Bhagalpur Division. 21. Lt.-Col. W. C. Ross, M.B., D.P.H., F.C.S., I.M.S., Director of Public Health.
Bombay	22. R. D. Bell, Esq., C.I.E., I.C.S., Ag. Secretary to the Government of Bombay, Development Department. 23. The Chamber of Commerce, Bombay. 24. P. R. Chikodi, Esq., Belgaum. 25. Dadubhai P. Desai, Esq., M.L.C., Nadiad. 26. G. K. Devadhar, Esq., M.A., Vice-President, Servants of India Society and Bombay Central Co-operative Institute, Bombay. 27. A. G. Edie, Esq., Chief Conservator of Forests. 28. C. E. L. Gilbert, Esq., Conservator of Forests.

<i>Province.</i>	<i>Name of witness.</i>	
Bombay— <i>contd.</i>	29. Prof. G. N. Joshi, Wilson College, Bombay. (In collaboration with Prof. P. A. Wadia.)	
	30. R. M. Joshi, Esq., M.A., B.Sc. (Lond.), I.E.S., Professor of Economics, Sydenham College, Bombay.	
	31. The Karachi Chamber of Commerce.	
	32. A. W. W. Mackie, Esq., I.C.S., Settlement Commissioner and Director of Land Records.	
	33. A. M. Macmillan, Esq., I.C.S., Collector of Surat.	
	34. J. A. Madan, Esq., I.C.S., Registrar of Co-operative Societies.	
	35. Dr. H. H. Mann, D. Sc., Director of Agriculture.	
	36. The Ahmedabad Mill owners' Association.	
	37. Rai Bahadur P. C. Patil, L. Ag., M.Sc. (Wis.), Deputy Director of Agriculture.	
	38. R. G. Pradhan, Esq., B.A., LL.B., M.L.C., Nasik.	
	39. L. J. Sedgwick, Esq., F.S.S., I.C.S., Director, Labour Office, Bombay.	
	40. Prof. C. N. Vakil, M.A., M.Sc. (Econ.), F.S.S., School of Economics and Sociology, University of Bombay.	
	41. Prof. P. A. Wadia, M.A., Wilson College, Bombay. (In collaboration with Mr. G. N. Joshi.)	
	Burma	42. E. J. L. Andrew, Esq., Assistant Protector of Immigrants and Emigrants, Rangoon.
		43. W. L. Barretto, Esq., I.C.S., Deputy Commissioner on Special Duty.
		44. J. J. Bennison, Esq., I.C.S., Superintendent, Cottage Industries.
		45. The Burma Chamber of Commerce, Rangoon.
		46. T. Cooper Esq., M.A., I.C.S., Commissioner, Mandalay Division, Mandalay.
		47. C. W. Dunn, Esq., C.I.E., I.C.S., Officer on Special Duty, Government of Burma.
		48. S. Gopalswami, Esq., Dip. Ec., Rangoon.
		49. S. G. Grantham, Esq., I.C.S., Officer on Special Duty, Land Mortgage Banks, Rangoon.
50. J. E. Houldey, Esq., I.C.S., Chairman, Rangoon Development Trust.		
51. Prof. H. S. Jevons, M.A., B.Sc., Lecturer in Economics, University College, Rangoon.		
52. J. B. Marshall, Esq., C.I.E., B.Sc., I.C.S., Deputy Commissioner, Thayetmyo.		
53. A. McKerral, Esq., M.A., B.Sc., Director of Agriculture.		
54. A. J. Page, Esq., I.C.S., Commissioner of Settlement and Land Records.		
55. S. A. Smyth, Esq., C.S.I., I.C.S., Financial Commissioner.		
56. F. H. Steavenson, Esq., I.C.S., Registrar of Co-operative Societies.		
57. H. W. A. Watson, Esq., I.F.S., Chief Conservator of Forests.		

<i>Province.</i>	<i>Name of witness.</i>
Central Government	58. B. C. Burt, Esq., B.Sc., M.B.E., F.G.S., Secretary, Indian Central Cotton Committee, Bombay.
	59. L. L. Fermor, Esq., O.B.E., A.R.S.M., D.Sc., F.G.S., Offg. Director, Geological Survey of India.
	60. H. Trotter, Esq., M.C., Offg. Forest Economist, Dehra Dun.
Central India	61. Sardar Bahadur K. V. Kite, M.A. M.R.A.S., F.R.A.S., Indore
	62. Rev. H. W. Lyons, B.A., Indore Christian College, Indore.
Central Provinces and Berar.	63. M. H. Nanavati, Esq., M.A., LL.B., Professor, King Edward College, Amraoti.
	64. N. J. Roughton, Esq., I.C.S., Director of Industries and Registrar of Co-operative Societies.
	65. Rao Sahib G. N. Sahasrabudhe, Pleader and Member, Advisory Board of Industries, C. P. and Berar, Ellichpur.
	66. A. C. Sen Gupta, Esq., M.A. (Edin.), I.E.S., Head of the Department of Economics, Nagpur University.
Madras	67. Rao Sahib C. T. Alwar Chetty, Esq., B.A., Dip. Econ., Madras.
	68. D. M. Amalsad, Esq., Assoc. M.C.T., Textile Expert to the Government of Madras.
	69. R. H. Ellis, Esq., I.C.S., Commissioner of Labour.
	70. Employers' Federation of Southern India, Madras.
	71. C. Gopal Menon, Esq., M.L.C., Southern India Chamber of Commerce.
	72. L. B. Green, Esq., M.B.E., Deputy Director of Industries.
	73. G. R. Hilson, Esq., B.Sc., Offg. Director of Agriculture.
	74. M. Koil Pillai, Esq., M.A., Professor of History and Economics, Bishop Heber College, Trichinopoly.
	75. P. S. Lokanathan, Esq., Lecturer in Economics, University of Madras.
	76. Dr. John Matthai, B.A., B.L., D.Sc., B. Litt., Professor of Economics, University of Madras.
	77. K. R. R. Sastry, Esq., M.A., F.R. (Econ.), S. (Lond.), Villupuram.
	78. Prof. A. J. Saunders, M.A., F.R. (Econ.), S., American College, Madura.
	79. Board of Revenue (Land Revenue and Settlement).
	80. S. Subbarama Ayyar, Esq., M.A., Dip. (Econ.), Senior Lecturer in Economics, Madras Christian College.
	81. Dr. B. Sundara Raj, M.A., Ph. D., Director of Fisheries.
	82. H. Tireman, Esq., M.L.C., Ag. Chief Conservator of Forests.
	83. Rao Bahadur A. Vedachala Ayyar, Retired Registrar of Co-operative Societies, Madras.
84. Dewan Bahadur T. Venkatanarayana Nayudu, B.A., B.L., Inspector-General of Registration.	
85. H. Waddington, Esq., Secretary, United Planters' Association of Southern India.	
86. C. Samundi Goundar, Esq., Honorary Organiser of Village Panchayats, Nattarampalli, Madras Presidency.	

<i>Province.</i>	<i>Name of witness.</i>
Mysore ..	87. P. G. D'Souza, Esq., Director of Industries.
	88. C. Hayavadana Rao, Esq., B.A., B.L., Editor, Mysore Economic Journal, Bangalore.
Punjab ..	89. R. L. Bhalla, Esq., M.A., Income-tax Officer, Montgomery.
	90. H. Calvert, Esq., C.I.E., I.C.S., Commissioner, Rawalpindi.
	91. C. C. Garbett, Esq., C.M.G., C.I.E., I.C.S., Deputy Commissioner, Attock.
	92. Gulshan Rai, Esq., B.A., I.L.B., Vice-Principal, Sanatan Dharma College, Lahore.
	93. D. Milne, Esq., B.Sc. (Agri.), I.A.S., Director of Agriculture.
	94. Hon. Rai Bahadur Lala Ram Sarn Das, C.I.E., M.C.S., Lahore.
	95. E. A. Scott, Esq., O.B.E., M.Inst.C.E., Director of Industries.
	96. C. F. Strickland, Esq., I.C.S., Registrar, Co-operative Societies and Joint Stock Companies, Punjab.
	97. C. A. H. Townsend, Esq., I.C.S., Commissioner, Jullundur.
	98. H. K. Trevaskis, Esq., O.B.E., I.C.S., Director of Land Records.
United Provinces..	99. B. G. Bhatnagar, Esq., M.A., F.S.S., Lecturer in Economics, University of Allahabad.
	100. E. A. H. Blunt, Esq., C.I.E., O.B.E., I.C.S., Financial Secretary to Government.
	101. Daya Shankar Dubey, Esq., M.A., LL.B., Lecturer in Economics, The University, Lucknow.
	102. Prof. Dori Lall Dubey, M.A., Professor of Economics, Meerut College, Meerut.
	103. Hon. Mr. S. H. Fremantle, C.S.I., C.I.E., I.C.S., V.D., Finance Member, Government of the United Provinces.
	104. Dr. Shafaat Ahmad Khan, M.L.C., Litt. D., Allahabad.
	105. R. Milner-White, Esq., I.C.S.
	106. Prof. Radhakamal Mukerjee, M.A., Ph. D., The University, Lucknow.
	107. Upper India Chamber of Commerce.
	108. W. H. Wiser, Esq., Ph.B., Secretary of Village Economic Improvement, A. P. Mission.

B

**LIST OF WITNESSES ORALLY EXAMINED BY THE INDIAN ECONOMIC
ENQUIRY COMMITTEE.**

<i>Name of place.</i>	<i>Name of witness.</i>
Allahabad ..	1. C. D. Thompson, Esq., M.A., Professor of Economics, Ewing Christian College.
	2. Sam Higginbottom, Esq., Agricultural Institute, Naini.
	3. Prof. Radhakamal Mukerjee, M.A., Ph.D., The University, Lucknow.
	4. B. G. Bhatnagar, Esq., M.A., F.S.S., University of Allahabad.
	5. Dr. Shafaat Ahmad Khan, M.L.C., Litt. D.
	6. Prof. Gurmukh N. Singh, M.Sc. (Econ.), Bar.-at-Law, Senior Professor and Head of the Deptt. of Economics and Political Science, Benares Hindu University.
	7. Daya Shunkar Dubey, Esq., M.A., LL.B., Lecturer in Economics, The University, Lucknow.
Calcutta ..	8. Khan Bahadur Mohi-ud-din Ahmad, Registrar of Co-operative Societies, Bihar and Orissa.
	9. K. M. Purkayastha, Esq., Secretary, Indian Mining Federation, Calcutta.
	10. Rajani Kanta Das, Esq., M.A., M.Sc., Ph.D., Santiniketan.
	11. C. G. Freke, Esq., B.Sc., I.C.S., Director-General of Commercial Intelligence.
	12. R. S. Finlow, Esq., B.Sc., F.I.C., Director of Agriculture, Bengal.
	13. J. A. Hubback, Esq., I.C.S., Commissioner, Bhagalpur Division, Bihar and Orissa.
	14. Lieut. Col. W. C. Ross, M.B., D.P.H., F.C.S., I.M.S., Director of Public Health, Bihar and Orissa.
	15. Rai Bahadur K. L. Barua, B.L., F.R.E.S., Director of Agriculture and Industries, Assam.
	16. L. L. Fermor, Esq., O.B.E., A.R.S.M., D.Sc. (Lond.), F.G.S., Offg. Director, Geological Survey of India.
	17. R. R. Simpson, Esq., M.Sc., Chief Inspector of Mines in India.
	18. Rai Bahadur D. N. Ghosh, Offg. Director of Statistics.
	19. Prof. C. J. Hamilton, M.A., Patna University.
	20. Prof. E. A. Horne, M.A., Professor of Economics, Patna College.
	21. K. C. Roy Chaudhri, Esq., M.L.C., Bengal.
	22. Dr. Sir P. C. Roy, Kt., C.I.E., D.Sc., University of Calcutta.
	23. Umakanta Goswami, Esq., M.A., B.L., Lecturer, Cotton College, Gauhati.
	24. R. W. Lock, Esq., Chief Assistant Editor, "Capital", Calcutta.

<i>Name of place</i>	<i>Name of witness.</i>	
Rangoon ..	25. J. B. Marshall, Esq., C.I.E., B.Sc., I.C.S., Deputy Commissioner, Thayetmyo.	
	26. A. J. Page, Esq., I.C.S., Commissioner of Settlement and Land Records.	
	27. C. W. Dunn, Esq., C.I.E., I.C.S., Officer on Special Duty.	
	28. J. J. Bennison, Esq., I.C.S., Superintendent, Cottage Industries.	
	29. S. A. Smyth, Esq., C.S.I., I.C.S., Financial Commissioner.	
	30. Hon. Mr. J. MacKenna, C.I.E., I.C.S., Finance Member.	
	31. J. E. Houldey, Esq., I.C.S., Chairman, Rangoon Development Trust.	
	32. A. McKerral, Esq., M.A., B.Sc., Director of Agriculture.	
	33. Prof. H. S. Jevons, M.A., B.Sc., University College, Rangoon.	
	34. H. Calder, Esq., Chairman, Burma Chamber of Commerce.	
	35. H. W. A. Watson, Esq., I.F.S., Chief Conservator of Forests.	
	36. T. Couper, Esq., M.A., I.C.S., Commissioner, Mandalay Division.	
	37. S. G. Grantham, Esq., I.C.S., Officer on Special Duty, Land Mortgage Banks.	
	38. U. Set, Esq., Offg. Municipal Commissioner, Corporation of Rangoon.	
	39. F. H. Steavenson, Esq., I.C.S., Registrar of Co-operative Societies.	
	40. U. Tok Kyi, Esq., M.L.A., Editor, "Sun Press".	
	Madras ..	41. G. R. Hilson, Esq., B.Sc., Ag. Director of Agriculture.
		42. L. B. Green, Esq., M.B.E., Deputy Director of Industries.
		43. P. G. D'Souza, Esq., Director of Industries, Government of Mysore.
		44. C. Hayavadana Rao, Esq., B.A., B.L., Editor, "Mysore Economic Journal," Bangalore.
		45. Dr. John Matthai, B.A., B.L., D.Sc., B.Litt., Professor of Economics, University of Madras.
		46. P. S. Lokanathan, Esq., Lecturer in Economics, Madras University.
		47. Dr. B. Sundara Raj, M.A., Ph.D., Director of Fisheries.
		48. H. Waddington, Esq., Secretary, United Planters' Association of Southern India.
		49. C. Gopal Menon, Esq., M.L.C., Southern India Chamber of Commerce.
		50. R. H. Ellis, Esq., I.C.S., Commissioner of Labour.
		51. V. N. Viswanatha Rao, Esq., Statistical Assistant to the Director of Agriculture.
		52. S. Satyamurti, Esq., M.L.C., Madras.
		53. Prof. A. J. Saunders, M.A., F.R. (Econ.), American College, Madura.
		54. S. Subbarama Ayyar, Esq., M.A., Dip. Econ., Senior Lecturer in Economics, Madras Christian College.

<i>Name of place.</i>	<i>Name of witness.</i>
Poona	55. Dr. H. H. Mann, D.Sc., Director of Agriculture, Bombay.
	56. J. F. Dyer, Esq., I.C.S., Commissioner of Settlements, Central Provinces.
	57. N. J. Roughton, Esq., I.C.S., Director of Industries and Registrar of Co-operative Societies, Central Provinces.
	58. A. W. W. Mackie, Esq., I.C.S., Settlement Commissioner and Director of Land Records, Bombay.
	59. R. G. Pradhan, Esq., B.A., LL.B., M.L.C., Nasik.
	60. P. R. Chikodi, Esq., Belgaum.
	61. A. M. Macmillan, Esq., I.C.S., Collector of Surat.
	62. M. H. Nanavati, Esq., M.A., LL.B., Professor, King Edward College, Amraoti
	63. J. A. Madan, Esq., I.C.S., Registrar of Co-operative Societies, Bombay Presidency.
	64. F. J. Plymen, Esq., I.A.S., Director of Agriculture, Central Provinces.
	65. R. M. Joshi, Esq., M.A., B.Sc. (Lond.), I.E.S., Professor of Economics, Sydenham College, Bombay.
	66. L. J. Sedgwick, Esq., F.S.S., I.C.S., Director, Labour Office, Bombay.
	67. A. C. Sen Gupta, Esq., M.A., (Edin.), I.E.S., Head of the Department of Economics, Nagpur University.
	68. Prof. C. N. Vakil, M.A., M.Sc. (Econ.), F.S.S., School of Economics and Sociology, University of Bombay.
	69. Prof. P. A. Wadia, M.A., Wilson College, Bombay.
	70. Prof. G. N. Joshi, do. do.
	71. G. K. Devadhar, Esq., M.A., Vice-President, Servants of India Society and Bombay Central Co-operative Society, Bombay.
Simla	72. H. Calvert, Esq., C.I.E., J.C.S., Commissioner, Rawalpindi.
	73. Sir Ganga Ram, Rai Bahadur, Kt., C.I.E., Lahore.
	74. C. F. Strickland, Esq., I.C.S., Registrar, Co-operative Societies and Joint Stock Companies, Punjab.
	75. C. A. H. Townsend, Esq., I.C.S., Commissioner, Jullundur.
	76. D. Milne, Esq., B.Sc. (Agri.), I.A.S., Director of Agriculture, Punjab.
	77. H. K. Trevaskis, Esq., O.B.E., I.C.S., Director of Land Records, Punjab.
	78. E. A. Scott, Esq., O.B.E., M.Inst.C.E., Director of Industries, Punjab.
	79. Prof. L. F. Rushbrook Williams, C.B.E., Director of Public Information with the Government of India in the Home Department.
	80. Hon. Mr. D. T. Chadwick, C.I.E., I.C.S., Secretary to the Government of India, Commerce Department.
	81. Sir P. H. Clutterbuck, Kt., C.I.E., Inspector-General of Forests.

C.

INDIAN ECONOMIC ENQUIRY COMMITTEE.

QUESTIONNAIRE.

GENERAL.

1. It is suggested that enquiries as to the economic condition of the people should be made with reference to :—

- (1) Production,
- (2) Wages,
- (3) Income,
- (4) Cost of Living,
- (5) Wealth, and
- (6) Indebtedness.

In your opinion would enquiries on these subjects be sufficient or would you suggest any others on which information should be collected ?

2. Under our terms of reference, we have, among other things, to aim at estimating the economic condition of the various classes of people. Sir Edward Gait framed a classification of occupations for the Census of India, 1911 [See Appendix G (a)]. Would you adopt this as the basis and sub-divide occupations as indicated in Appendix A.? If not, can you suggest any alternative ?

3. Do you think that for the purposes of collecting economic data, provinces should be sub-divided into tracts which are more or less similar in economic characteristics ? If so, would you adopt Sir Edward Gait's classification (see Appendix A 2) or that of Mr. K. L. Datta (see Appendix A 3) ?

4. In collecting statistical data relating to the economic welfare of the people of British India, would there be any difficulty in, or objection to following the standards of the Dominions and European countries as laid down, by the resolutions of the Imperial Statistical Conference ?

PRODUCTION.

5. In Appendix B, a description is given of the existing system of crop *Agriculture.* reporting in India and of collecting statistics of outturn. How far are the returns published in—

- (a) the "Agricultural Statistics of India".
- (b) provincial Season and Crop Reports and "Estimates of area and yield of principal crops in India"

reliable ?

6. If you consider the existing machinery for crop reporting defective in any or all the provinces, have you any alternative to suggest ?

7. In provinces and tracts where there is a subordinate revenue agency utilised for crop reporting (*e.g.*, the Punjab and the United Provinces) statistics of *quantity* of agricultural produce are available for some of the most im-

portant crops. There are no regularly published figures of *yield* for minor crops (*e.g.*, lobia), vegetables, fruits, condiments and spices, fibres (other than cotton and jute) and dyes and tanning material (see Appendix C). In the Dominions, information under these heads is given. Do you consider that the information should be collected even at an extra cost ?

8. In provinces and tracts where there is no subordinate revenue agency and a rough estimate of area under crops and of outturn is made by the local officers on the basis of information received from chowkidars, what measures should be adopted for ascertaining the particulars mentioned in question No. 7 ?

9. A regular and comprehensive quinquennial census of cattle and other livestock, ploughs and carts was instituted in India for the first time in 1919-20. Do you consider the information collected to be fairly reliable ? If not, have you any suggestions to make for improving its accuracy ?

10. No attempt has been made to publish regular statistics of other pastoral products, *e.g.*,

- (a) meat,
- (b) skins,
- (c) wool,
- (d) tallow,
- (e) bones, hair, hoofs, horns, sinews, etc.
- (f) game of all kinds.

In your opinion how could information under each of the above heads be obtained ?

11. Are there any other pastoral products for which statistics should be compiled ?

12. Little or no information is available for the following :—

Dairy and Farm Products.

- (a) Milk,
- (b) Butter,
- (c) Cream,
- (d) Curd (Dahi),
- (e) Ghi,
- (f) Cheese,
- (g) Bacon and Ham,
- (h) Eggs,
- (i) Poultry,
- (j) Honey (Also under " Forest Products"),
- (k) Bees wax.

What measures should, in your opinion, be adopted to secure, as far as possible, accurate and comprehensive data under each of the above heads ?

13. Are there any other dairy and farm products for which information should be obtained ?

Forestry.

14. The statistics relating to forest production are published in—

For officers engaged in Forest Administration.

(a) the Annual Returns of Statistics relating to Forest Administration in British India,

(b) the Quinquennial Review of Forest Administration in British India,

(c) the Annual Forest Reports of the provinces.

14. Figures of the *value* of "timber" and "fuel" produced are given in the annual reports of a few provinces, *viz.*, United Provinces, Bengal, North-West Frontier Province, Baluchistan and Ajmer-Merwara. Would it not be possible to obtain similar information for the rest of British India ?

15. By what methods are the statistics of the *volume* of timber and fuel produced in British India (which are published in "a" and "b" above) compiled ? How far are the published figures reliable and complete ?

16. In Appendix "D" is a list of forest products about which data (quantity and value) should be obtained, if not already available. Which of the items in the list are included in the returns of "other minor produce" and how far is information relating to them reliable ? Is there any difficulty in securing returns for the remaining items ?

17. Can any means be devised for obtaining, as far as possible, statistics of forest produce for (a) unclassified forests and (b) private forest areas ?

18. In view of the magnitude of the fishing industry, do you agree that steps should be taken to secure complete statistics of the production of both fresh water and

Fisheries.
sea fisheries ?

19. In respect of fresh water fisheries in particular, what measures would you suggest should be adopted for obtaining this information ?

20. As regards sea fisheries, what agency would you employ for collecting the data ?

21. How would you proceed to ascertain the quantity and value of the products of subsidiary industries, *e.g.*

(a) fish curing and canning,

(b) pearl oyster fisheries,

(c) edible oyster fisheries,

(d) lime from coral and shell,

(e) fish guano and manure,

(f) miscellaneous [*e.g.*, "chank" fisheries and subsidiary industries (manufacture of bangles, etc.); the *bechê-de-mer* industry; fish maws and shark skins and fins; sea-weeds for vegetable gelatine.]

22. Appendix E contains a list of minerals, (a) for which regularly recurring and full particulars are not available, (b) for which no statistics are collected. There are important

Minerals. and valuable minerals in each category (e.g., alum, building stone and materials, fuller's earth, gypsum, borax, arsenic, antimony, sulphur, glass-making materials, mercury). Do you think arrangements should be made for obtaining information regarding the quantity and value of output in respect of each mineral which is known to be extracted in India? If so, what agency should be employed for collecting it?

23. The Report of the Chief Inspector of Mines contains information relating to:—

(a) the number of mines, distinguishing those worked by mechanical power,

(b) average daily number of employees,

(c) total output (quantity) and

(d) details of accidents,

for those mines which are subject to the operation of the Indian Mines Act; while the Review of Mineral Production (contained in the Records of the Geological Survey) gives the quantity and value of the output of a certain number of minerals. Do you consider it necessary to collect similar information (including value of output) for all other minerals?

24. Are you of opinion that it would be inadvisable to collect data regarding "value of machinery"?

25. As the Indian Mines Act excludes from its scope mines and quarries which are less than 20 feet in depth, what suggestions would you make for obtaining information relating to such mines? Would you suggest a legislative measure to secure returns?

26. The value of the output as stated in the Review of Mineral Production represents, in the case of several minerals, the value at the mine and bears little relation to the selling price in the open market. Should not the values be computed at the market price?

27. In Appendix F (1) is a detailed statement of information published *Industrial. Large Scale* regarding large industrial establishments. In F. *Industries.* (2) of the same Appendix are the names of a large number of industries for which information does not appear to be regularly published. Can you name any publication containing statistics of production (quantity and value), with regard to any of these industries?

28. Are there any other industries known to you of which returns of production, etc., might be obtained?

29. As it appears difficult to secure voluntary returns of production, etc., from employers, would you advise compulsory legal powers for obtaining the information?

30. Would you advocate the institution of a regular Census of Industrial Production? If so, should it be instituted annually, quinquennially or at longer intervals?

31. Should the census, in your opinion, be as detailed as the United Kingdom Census or should it follow the lines of Censuses instituted by the Dominions ?

32. Should the information relating to *large industrial establishments* be obtained by :—

- (1) the Imperial statistical organisation, or
- (2) through provincial statistical organisations ?

33. What precautions should be taken against the possibility of information reaching rival concerns ?

34. Would you define *large industrial establishments* as those which are governed by the Indian Factories Act ? If not, how should they be defined ?

35. For the purpose of the Census of Industrial Production, which of the following schemes of classification of Industries (Appendix G) would you prefer—

- (a) the occupational classification adopted at the Census of Population in 1921 ;
- (b) the classification given in " Large Industrial Establishments in India " published by the Department of Statistics ;
- (c) one of the classifications adopted by the Dominions ?

36. It is suggested that large industrial concerns should supply the following information :—

- (a) No. of establishments.
- (b) No. of persons employed.
- (c) No. of days worked.
- (d) Horse-power and kind of engine.
- (e) Capital invested—
 - (1) Value of lands and buildings.
 - (2) Value of machinery and plant.
- (f) Quantity and value of raw materials either—
 - (1) purchased ; or
 - (2) used.
- (g) Wages and salaries.
- (h) Cost of fuel, light and power.
- (i) Miscellaneous expenses.
- (j) Quantity and value of total outturn.

Would you propose any additions, omissions or alterations and if so, for what reasons ?

37. Appendix H contains a list of cottage industries known to exist in India. Can you name any other such industries ?

Cottage Industries.

38. No regular and comprehensive data are published regarding the production of these industries, although occasional isolated statements are to be found about some of the industries in industrial monographs, industrial survey reports and special works on industries of certain provinces (*e.g.*, Latifi's "Industrial Punjab", Sir Atul C. Chatterjee's "Notes on the Industries of the United Provinces").

Do you consider it possible to collect, for the purpose of a general census of production, data relating to Cottage Industries under some or all of the following heads :—

- (1) the number of persons engaged in the industry, distinguishing—
 - (a) workers on their own account,
 - (b) employers, and
 - (c) employees ;
- (2) the quantity and value of raw material used ;
- (3) the quantity and value of the finished products ;
- (4) the quantity and value of the products sold ;
- (5) total wages paid to employees ;
- (6) hours of work of employees.

39. If your answer to question 38 is in the affirmative, what agency would you suggest ?

WAGES.

40. An annual statement of rural wages is published by the Government of the Central Provinces and Berar, while a quinquennial wage census is taken in the remainder of British India. It is suggested that the figures which are published in "Prices and Wages in India" are unsatisfactory for the following reasons :—

- (a) that the returns relate to a particular month and to selected villages ;
- (b) that great differences in the nature and remuneration of agricultural work in different parts of India require a more detailed classification of agricultural workers than is at present given, *i.e.*, "unskilled or agricultural labourers", "thatchers" (for Bengal, Bihar and Orissa and Assam only) and "ploughmen" ;
- (c) that in many cases, the *range* of daily average wages is given, *e.g.*, 6 annas to 10 annas ;
- (d) that in the case of "unskilled labourers" and "thatchers" the wage is stated per diem, the monthly earnings not being given ;
- (e) that the information given is only the average wage ;
- (f) that in some cases the daily rate of wages is stated to four decimal places of a rupee.

Do you share this view ?

41. Are you of opinion that the agency which at present collects statistics of wages in agricultural areas supplies accurate returns? If not, what suggestions have you to make for improving the system.

42. The following classifications of agricultural workers have been employed in publishing wage statements in India :—

- (1) *The Datta Report*.—Ploughmen, reapers, weeders, sowers, transplanters and “others”, also, thatchers and gharamis.
- (2) *Bombay Labour Office*.—Field labour (Ploughmen, reapers, sowers, weeders and transplanters), Ordinary Labour (those engaged on large agricultural holdings for the purpose of embankment, well-digging, canal silt-clearing and on the more important work on a farm which sometimes requires a higher degree of skill than that possessed by the field labourer).

Are you of opinion that one of the above systems of classification should be made uniform throughout India, with necessary alterations, or that each province should be left to decide its own system?

43. Most wage returns merely give the daily rate of wages while the frequency of employment is not stated. Should steps be taken to ascertain the regularity of employment or would it be sufficient to obtain a return of monthly earnings?

44. Should the extra payments (in cash or in kind) received at harvest be apportioned and added to the daily or monthly wage?

45. Villages vary in the practice of paying wages. In a few, the custom prevails of paying full wages in kind; in others, payments are made partly in cash and partly in kind, while there is a third group of villages where payments are made entirely in cash. As the rates of converting payments in kind into terms of cash vary according to the personal equation, have you any suggestions to offer as to the fixing of definite standards of conversion?

46. Should wage returns be classified according to canal-irrigated, well-irrigated and unirrigated tracts as well as by districts?

47. In some parts of India, the value of the supplementals given in addition to cash wages is appreciable. The Punjab ploughman, for instance, is stated to receive Rs. 36 per annum in supplementals (excluding food). Is it possible to measure the following supplementals :—

- (a) the dwelling;
- (b) food;
- (c) tobacco;
- (d) clothing;
- (e) bedding?

If so, how?

48. In the Third Wage Census of Bengal, (1916) the “median” was employed for representing the rate of wages in each district, whereas the Third Wages Survey of the Punjab (1922) utilised the “mode” and in addition.

gave the frequency distribution of village wage rates. Would you suggest employing—

- (a) the “median” together with quartiles, or
- (b) the “mode” and the frequency distribution, for representing the distribution of agricultural wages in each province?

49. Would not the utility of the wage returns be enhanced if one could ascertain “the total number of persons” to whom each of the rates applied?

50. Should separate returns of wages be obtained for the “Kharif” and the “Rabi” harvests?

51. Would it be possible to ascertain with any degree of reliability, the hours of labour of agricultural workers?

52. In “Prices and Wages in India” statements of the wages paid to craftsmen and persons engaged in petty industry; (rural and urban) are tabulated according to the following classes:—

<i>Rural.</i>	<i>Urban.</i>
Carpenters.	Workers in iron and hardware.
Blacksmiths.	Brass, copper and bellmetal workers.
Masons.	Carpenters.
	Masons and builders.
	Cotton weavers—hand industry.

Are there any other classes of craftsmen, etc., regarding whom information should be supplied?

53. Wage returns for the above classes are published quinquennially (except in the case of the Central Provinces and Berar where annual statistics are compiled) and give the *range* of “average daily wages”. Would it be possible to secure returns showing the number of craftsmen, etc. (classified by crafts, etc.) earning varying rates of wages?

54. How far are the statistics which are at present published reliable?

55. As some of the village artisans are paid in kind as well as in cash, would you follow the same method of evaluating payments in kind and supplementals as in the case of agricultural labourers?

56. Would it be possible to secure particulars of the working hours of craftsmen and village artisans?

57. Apart from the enquiry into Wages and Hours of Labour in the Bombay Cotton Mill Industry, 1921, and the Madras Wage Census, 1922, statements regarding the wages paid in large industrial establishments are very scanty and relate to a few individual firms engaged in about a dozen industries. Are you of opinion that detailed surveys similar to that of the Census of Wages in the Bombay Cotton Mills should be undertaken in every large-scale industry?

58. An attempt to institute a comprehensive and detailed wage census was made in 1921-22, but owing to financial stringency, the need for a competent staff and the absence of power of compulsions for securing returns from employers, the enquiry was not a success, except in the Bombay Presidency and to a less extent in Madras. In the United Kingdom and the Dominions, returns of wage statistics are compulsory. Are you of opinion that, apart from the question of staff and finances, steps by legislation will have to be taken to secure the statistics ?

59. Wages are paid weekly in the Calcutta Jute Mills and monthly in the Bombay Cotton Mills. Should the 'day', 'week' or 'month' be taken as the unit of time for recording wages for statistical purposes ?

60. Owing to the prevalence of absenteeism, would it not be necessary to ascertain the number of days worked and the earnings, in addition to the wages and the hours of labour ?

61. Workers in urban centres periodically migrate to their villages for several weeks, sometimes months. In endeavouring to ascertain a man's earnings how would you deal with the difficulties arising from this practice ?

INCOME.

62. Appendix I contains a list of estimates of the national income of India. Do you think the diversity of the figures is due to the part played by assumptions in the determination of results from data which are considered imperfect and far from comprehensive ?

If so, can you indicate in what direction improvement should be attempted with the object of making the statistics more accurate and reliable ?

63. Estimates of income have been made variously on the basis of—

(a) production only.

(b) production and the value of certain services based upon wage statistics and occupational figures ascertained in population census and

(c) "(b)" supplemented by income tax statistics.

In view of the incomplete nature of such statistics would you advocate the institution of an income census on the lines of that adopted in Australia in 1914-15, utilising the statistics of wages, income-tax and production as checks ? If not, what method would you advocate for the purpose of obtaining a fairly accurate estimate of the total income ?

64. For the purposes of income statistics should the unit of enumeration be the individual, the family or the household ?

65. What period of time would you take as the unit for measuring income, viz., year (financial or agricultural), half year (harvest,—Kharif and Rabi), month or day ?

66. Would you adopt the same unit for the measurement of income of all classes or would you adopt different units (e.g., year for rent payers, month for salaried persons, day for unskilled labourers) and convert them into one large uniform unit for purposes of comparison ?

67. In valuing income in kind would you assign any value to the free gift nature such as fuel in villages ?

WEALTH.

68. Statisticians attempt to compute national wealth on the basis of one or other of the following methods :—

- (a) from statistics collected through the taxation of income,
- (b) from statistics collected through the annual taxation of capital,
- (c) from estate duty statistics,
- (d) the "inventory" method,
- (e) the "census" method.

Statistics mentioned in "(b)" and "(c)" are not available in India while income tax statistics "(a)" do not include agricultural incomes nor are they complete. Could either of the methods "(d)" or "(e)" or a combination of them be applied to India with any degree of success in obtaining fairly complete information or would you suggest any other method ?

69. Appendix J gives a suggested list of the principal items to be taken into account in framing an estimate of national wealth (private and public). Have you any criticisms to make or suggestions to offer ?

70. Would you value agricultural land—

- (a) on the basis of average sale price noted in the revenue returns,
- (b) as a multiple of land revenue, or
- (c) as a result of a local enquiry ?

71. How would you value buildings in villages where there are no rent data ?

72. In towns where a standard of rent exists would you estimate the value of buildings on the basis of rent or by some other method ?

73. Do you advise a detailed enquiry from every individual in respect of all forms of private wealth ?

74. Do you think the replies as to the values of articles possessed and particularly as to coin, bullion and jewellery will be reliable ? If not, what methods would you adopt to obtain reliable information ?

75. Considering the difficulty involved in obtaining values of some of the articles included in *public* wealth, would you be satisfied with rough estimates only ?

COST OF LIVING.

76. What methods do you consider should be adopted in British India for measuring variations in the cost of living of different classes and sections of the community in (a) urban and (b) rural areas ?

77. Are you of opinion that the "mass-unit" system applied in preparing the Bombay Cost of Living Index Numbers is suitable in view of the enormous differences in consumption by the heterogeneous communities comprising urban populations in India ?

78. In Appendix K is a list of publications containing "family budgets".

It would appear that there are three alternative methods for collecting information :—

- (a) by complete house-to-house inquiries,
- (b) from typical families, or
- (c) by random sample.

79. During what length of time should the expenditure of a householder be continuously recorded for the purpose of obtaining a budget which will reflect normal conditions ?

80. For what proportion of the population of a unit should family budgets be collected so as to afford fairly reliable data ?

81. Should expenditure on " drink ", " drugs ", " religious and social ceremonies ", " gifts to relations " and " entertainments " be included among the items of expenditure in a family budget ?

82. It is generally admitted that statistics of prices are unsatisfactory and unreliable. What steps, would you suggest, should be taken to improve the methods of reporting prices (including the grading of commodities) ?

INDEBTEDNESS.

83. Apart from the " haisiyat " statements of co-operative societies, mortgage returns for agricultural lands and settlement reports (*e.g.*, for districts of Burma), what other official records contain information relating to indebtedness ?

84. If it were decided to institute enquiries into indebtedness should the unit of measurement of indebtedness be—

- (a) the individual,
- (b) the family, or
- (c) the household ?

85. Do you approve of the following as the main heads about which data should be collected or would you recommend a more detailed enquiry :—

- (i) Amounts originally borrowed—
 - (a) cash,
 - (b) produce, for food
for seed } in case of agriculturists only.
- (ii) Accumulation of debt.
- (iii) Repayments.
- (iv) Debt outstanding.
- (v) Rate of interest charged.
- (vi) Security.
- (vii) Chief purpose for taking the loan.
- (viii) Method of repayment ?

86. Should information regarding indebtedness be collected by special intensive enquiries, or do you think that the result of a general survey will be reliable ?

INITIAL ECONOMIC SURVEY.

87. It is suggested that the initial economic survey should consist of two sections as follows:—

Section I.—Censuses to be undertaken by central or provincial authorities by special arrangement (*e.g.*, through heads of departments, factory inspectors, heads of firms, etc.)—

(a) Census of Production—

(i) agriculture ;

(ii) factories and other large industrial establishments ;

(iii) mining ;

(b) Census of Wages of—

(i) workers in large industrial establishments and mines ;

(ii) State and Municipal employees ;

(iii) employees in private firms ;

(iv) transport workers ;

(v) other persons engaged in State regulated occupations.

(c) Census of Wealth—

(i) private—collective ;

(ii) public (Government and local bodies).

Section II.—A local enquiry into

(a) the production of—

(i) cottage industries ;

(ii) minor forest products ;

(iii) fruit ;

(iv) dairy and pastoral products ;

(v) fish.

(b) the wages of—

(i) craftsmen, artisans and employees in minor industries ;

(ii) agricultural labourers ;

(iii) unskilled labourers (urban and rural) ;

(c) the income

(d) the " individual " wealth (private) } of (i) individuals.

(ii) families, or

(iii) households.

(e) the indebtedness

(f) the cost of living

Have you any criticism to offer or any suggestions to make on the above ?

88. With regard to question No. 87, Section II (a), would it be sufficient to ascertain the total production of the village? If so, what agency would you employ?

89. Would you employ the results of the local enquiry and figures of production obtained by the revenue agency as checks on each other?

90. With regard to question No. 87, Section II (b), do you think answers elicited by questions at a house-to-house visit will be sufficiently reliable or would you suggest any other method of getting reliable information?

91. With regard to questions No. 87, Section II (c), (d), (e), and (f) should the enquiry be—

(i) by intensive study (i.e., by personal observation and independent verification of information elicited), or

(ii) by merely recording answers to questions?

92. In either case what agency would you employ? If a new agency is suggested, what should be its character?

93. How long do you think that an initial survey of the nature recommended by you would take? Can you afford any approximate idea of its cost?

PERIODICAL SURVEYS.

94. Do you consider the initial economic survey (mentioned in question No. 87) should be the precursor to similar periodical surveys with a view to measuring progress or decline and to maintaining the utility of the economic data?

95. If so, at what intervals would you recommend that detailed surveys should be repeated? Would you agree to the suggestion that in course of time the periodical surveys should synchronize with the Population Census?

96. Assuming that detailed surveys should be taken at fairly long intervals (say, quinquennially), should not less detailed information be collected annually as far as possible as is the practice in the Dominions, e.g., in the case of factory production; data of the total number of employees; quantity and value of total output and cost of raw material; in the case of agricultural production; quantity and value of the crops?

97. In some countries detailed statistics are collected in the case of the more important industries every year. Which industries in India would you place in this category?

SPECIAL ENQUIRIES.

98. In such matters as indebtedness, cost of living, fragmentation of holdings, etc., do you think special intensive enquiries might be continued under the direction of provincial statistical organizations during intervals between the periodical surveys?

99. Should the information collected at the initial survey be published for each village, town and city with abstracts for economic tracts and provinces and when possible, for the whole of India?

100. If so, would you recommend among other publications an official Year Book of India similarly to those published for the Dominions ?

101. The Department of Statistics (now part of the Commercial Intelligence Department) has very little responsibility for the collection of statistics and only a limited responsibility for their form. At the same time there exist statistical sections in various departments of administration. Would you advocate the adoption of a comprehensive scheme for co-ordinating and centralizing statistics in British India as has been carried out in the Dominions ?

ORGANISATION.

102. Following the example of the Dominions, do you think it would be desirable for Central and Provincial Bureaux of Census and Statistics with branch offices in districts to be created for the purpose of collecting economic data and the co-ordination of statistics ? If not, what other form of organisation would you suggest ?

103. Within the district, should the village, town and city be the unit of compilation, as in the Population Census ?

LEGISLATION.

104. To establish these Bureaux and to equip them with statutory powers for obtaining the necessary information, would you advise the passing of a legislative measure on the lines of the Census and Statistics Acts in force in the Dominions ?

COST.

105. Do you approve of the suggestion that the cost of the proposed Imperial Bureau of Census and Statistics should be met from the Central Revenues and that of the Provincial Bureaux and the District offices from the revenues of the provinces concerned ?

106. How do you think the cost of (a) the initial economic survey and (b) the recurring charges should be shared ?

107. Are you of opinion that the Municipalities should defray the cost of operations within their areas as in the case of the population census ?

108. Do you think that (a) the District Boards and (b) the villages would be willing in any part of the country to defray the whole or part of the cost of such operations ?

APPENDIX A.

Rural occupations.	Urban occupations.
<p>I.—Agriculture—</p> <p>Rent receivers.</p> <p>Rent payers.</p> <p>Peasant proprietors.</p> <p>Farm servants.</p> <p>Field labourers.</p> <p>II.—Pasture and Raising of Farm Stock, Fishing and Hunting—</p> <p>Skilled.</p> <p>Unskilled.</p> <p>III.—Village Craftsmen.</p>	<p>I.—Industries—</p> <p>Transport.</p> <p>Exploitation of Minerals</p> <p>Plantations (Tea, coffee, indigo, cinchona).</p> <p>Forestry.</p> <p>Public Force.</p> <p>Domestic Service.</p> <p>Trade</p> <p>(1) Direction, supervision and clerical staff :—</p> <p>(a) Managers,</p> <p>(b) Supervising and technical staff.</p> <p>(c) Clerical staff.</p> <p>(2) Skilled workmen.</p> <p>(3) Unskilled labourers.</p> <p>II — Professional Men.</p> <p>III.—Unproductive—</p> <p>Old and infirm.</p> <p>Incapacitated.</p> <p>Persons living on their own income (e.g., pensioners, jagirdars, pro- prietors of houses).</p> <p>Living on charity.</p> <p>Inmates of jails (those not at work), asylums and almshouses.</p> <p>Professional beggars.</p>

APPENDIX A-2.

NATURAL DIVISIONS OF INDIA.

Classification by Sir Edward Gait.

(Census of India, 1911, Vol. 1, Part I—Report.)

Natural Division.	Rainfall Divisions included.	Administrative Divisions included.
I. Lower Burma . . .	Lower Burma . . .	Arakan, Pegu, Irrawaddy and Tenasserim Divisions.
II.—Upper Burma . . .	Upper Burma . . .	Magwe, Mandalay, Sagaing and Meiktila Divisions; the Northern and Southern Shan States; Pakokku Hill Tracts and Chin Hills.
III.—Assam . . .	Assam . . .	The Province of Assam.
IV. Bengal . . .	Eastern Bengal Bengal.	The Presidency of Bengal (except Darjeeling) and Sikkim.
V. Orissa and Madras Coast, North.	Orissa . . . Madras Coast, North.	Orissa Division with Orissa Tributary States; districts of Ganjam, Vizagapatam, Godavari, Kistna, Guntur and Nellore.
VI. Bihar and United Provinces, East.	Bihar and United Provinces, East.	Patna, Tirhut and Bhagalpur Divisions and the district of Darjeeling; Lucknow, Benares, Gorakhpur, Allahabad, except Jalaun and Jhansi, and Fyzabad Divisions, and districts of Pilibhit, Shahjahanpur and Farrukhabad.
VII. United Provinces, West, and Punjab, East and North.	United Provinces, West. Punjab, East and North.	Meerut, Kumaun, Rohilkhand (except Shahjahanpur and Pilibhit districts) and Agra (excluding Farrukhabad district Divisions; the districts of Jalaun and Jhansi, and the States of Rampur and Tehri Garhwal; Delhi, Jullundur, Lahore, Rawalpindi (except Shahpur and Mianwali) Divisions and all Native States in the Punjab, except Bahawalpur.
VIII. Kashmir . . .	Kashmir . . .	Kashmir.
IX. The North-West Dry Area.	Punjab, South-West, North-West Frontier Province. Sind. Rajputana-West.	Multan Division (including the Biloch Transfrontier), the districts of Shahpur and Mianwali, and Bahawalpur State; North-West Frontier Province; Sind with Khairpur State; Bikaner, Jaisalmer and Marwar.

Natural Division.	Rainfall Divisions included.	Administrative Divisions included.
X. Baluchistan	Baluchistan	Baluchistan.
XI. Rajputana, East, and Central India, West.	Rajputana, East Central India, West.	Ajmer-Merwara; all States in Rajputana Agency (except Bikaner, Jaisalmer and Marwar), Indore and Gwalior Residencies, and the Agencies of Bhopawar, Malwa and Bhopal.
XII. Gujarat	Gujarat	Bombay Northern Division (except Thana); Cambay, Cutch, Kathiawar and the Agencies of Palanpur, Mahikantha, Rewakantha and Surat; Baroda.
XIII. Central India, East, Central Provinces and Berar and Chota Nagpur.	Central India, East. Central Provinces, West. Central Provinces, East. Berar. Chota Nagpur.	Bundelkhand and Baghelkhand Agencies; Central Provinces and Berar, and Chota Nagpur Division of Bihar and Orissa with Chota Nagpur States.
XIV. The Deccan	Bombay, Deccan Hyderabad, North, Hyderabad, South. Mysore with Coorg. Madras, Deccan.	Bombay Central Division; the districts of Belgaum, Bijapur and Dharwar, the States of Akalkot, Bhor, Surgana, Kolhapur, S. M. Jaghirs and Savanur, and the Agencies of Khandesh, Satara and Bijapur; Hyderabad; Mysore and Coorg; the Madras districts of Bellary, Kurnool, Anantapur and Cuddapah and the States of Sandur and Banganapalle.
XV. Malabar and Konkan.	Malabar Konkan.	The Madras districts of South Canara, Anjengo and Malabar (excluding Laccadives) and the States of Cochin and Travancore; Bombay City; the districts of Thana, Kolaba, Ratnagiri and Kanara, and the States of Janjira, Jawahar and Savantvadi.
XVI. Madras, South East.	Madras, South-East.	Districts of Madras Chingleput, Chittoor, North Arcot, Salem, Coimbatore, South Arcot, Tanjore, Trichinopoly, Madura, Ramnad, Tinnevely, Nilgiris and the State of Pudukkottai.

APPENDIX A-3.

DIVISION OF INDIA INTO ECONOMIC CIRCLES.

Classification by Mr. K. L. Datta.

(Report on the Enquiry into the Rise of Prices in India, 1914, Volume I.)

Administration or Province.	Economic Circles.	Districts comprised in each Circle.
Assam	Assam	Brahmaputra Valley— Lakhimpur, Sibsagar, Nowgong, Darrang, Kamrup, Goalpara. Surma Valley— Sylhet, Cachar. Hill Districts— Garo Hills, Khasi and Jaintia Hills, Naga Hills, Lushai Hills.
Bengal	Bengal, Northern and Eastern.	North Bengal— Jalpaiguri, Rangpur, Dinajpur, Malda, Rajshahi, Bogra, Pabna. East Bengal— Mymensingh, Dacca, Tipperah, Faridpur.
Bengal with Orissa	Bengal Southern and Western.	Southern Bengal— Chittagong, Noakhali, Backergunge, Khulna, 24-Paraganas. Central Bengal— Murshidabad, Nadia, Jessore. Western Bengal— Birbhum, Burdwan, Bankura, Hughli, Howrah, Midnapur. Orissa— Balasore, Cuttack, Puri, Angul.
Bihar and Orissa	Chota Nagpur	Singhbhum, Manbhum, Ranchi, Hazaribagh, Palamau.
Bihar with Darjeeling	Bihar	North Bihar— Champaran, Saran, Muzaffarpur, Darbhanga, Monghyr (part), Bhagalpur (part), Purnea, Darjeeling. South Bihar— Shahabad, Patna, Gaya, Monghyr (part), Bhagalpur (part), Sonthal Parganas.

Administration or Province.	Economic Circles.	Districts comprised in each Circle.
United Provinces of Agra and Oudh.	Agra Province, East	Eastern Districts— Mirzapur, Benares, Jaunpur, Ghazipur, Ballia, Azamgarh. Sub-montane Districts— Gorakhpur, Basti.
Do. do.	Bundelkhand	Jhansi, Jalaun, Hamirpur, Banda.
Do. do.	Agra Provinces North and West, includ- ing Oudh.	The Doab— Saharanpur, Muzaffarnagar, Meerut, Bulandshahr, Aligarh, Muttra, Agra, Etah, Mainpuri, Farrukkabad, Etawah, Cawnpore, Fatehpur, Allahabad. Hill Districts— Dehra Dun, Garhwal, Almora, Nainital. Central District— Bijnor, Moradabad, Budaon, Bareilly, Pilibhit, Shahjahanpur. Oudh— Kheri, Bahraich, Gonda, Fyzabad, Barabanki, Sitapur, Hardoi, Unao, Lucknow, Rae-Bareilly, Sultanpur, Partabgarh.
Punjab with Delhi	Punjab, East	Jetch Doab— Shahpur, Gujrat. Rechna Doab— Lyallpur, Jhang, Gujranwala, Sialkot. Bari Doab— Multan, Montgomery, Lahore, Amritsar, Gurdaspur. Eastern Districts— Hoshiarpur, Jullundur, Ludhiana, Ferozepore, Hissar, Rohtak, Gurgaon, Delhi, Karnal, Ambala. Hill Districts— Kangra, Simla.
Punjab and North- West Frontier Pro- vince	Punjab, West	East of Indus— Muzaffargarh, Mianwali, Attock, Jhelum, Rawalpindi, Hazara. Trans-Indus— Peshawar, Kohat, Bannu, Dera Ismail Khan, Dera Ghazi Khan.

Administration or Province.	Economic Circles.	Districts comprised in each Circle.
Bombay	Sind	Upper Sind Frontier, Sukkur, Larkana, Karachi, Hyderabad, Thar and Parkar.
Do	Gujarat	Panchmahals, Ahmedabad, Kaira, Broach, Surat.
Do	Konkan	Thana, Kolaba, Ratnagiri, Kanara.
Do	Deccan	Khandesh— West Khandesh, East Khandesh. Deccan Plateau— Nasik, Ahmednagar, Poona, Satara, Sholapur. Karnatak— Bijapur, Dharwar, Belgaum.
Central Provinces	Berar	Buldana, Akola, Amraoti, Yeotmal.
Central Provinces with Sambalpur	Central Provinces	Nerbudda Valley— Hoshangabad, Narsinghpur, Saugor, Damoh, Jubbulpore, Mandla. Waingunga and Mahanadi Basins— Seoni, Chanda, Balaghat, Bhandara, Drug, Raipur, Bilaspur, Sambalpur. South-Western Districts— Nimar, Betul, Chhindwara, Nagpur, Wardha.
Madras	Madras, North-East	Ganjam, Vizagapatam, Godavari, Kistna, Guntur, Nellore.
Do	Madras, North	Bellary, Kurnool, Anantapur, Cuddapah.
Do	Madras, South	Central Districts— Chittoor, Chingleput, North Arcot, South Arcot. Cauvery Valley— Salem, Coimbatore, Trichinopoly, Tanjore. Southern Districts— Madura, Ramnad, Tinnevely.
Madras with Coorg	Madras, West	Nilgiris, Malabar, Coorg, South Canara.

APPENDIX B.

METHOD OF CROP REPORTING IN INDIA.

The Existing system and its defects.

Estimates of outturn of crops in India are based on three factors. These are (1) the area, (2) the standard normal outturn per acre, and (3) the estimate representing the relation of the year's crop to the normal per acre. This last is known as the "condition estimate." The quantitative yield of a crop is arrived at by multiplying these factors with each other.

2. As regards *area*, the reporting agency in most provinces is the Patwari (village accountant) or corresponding local revenue officer, and he is capable of reporting the area with accuracy. Such is the practice where the fields have been mapped out and surveyed. There are certain tracts, *e.g.*, permanently settled areas, lands held on privileged tenures and unsurveyed areas, where no trained revenue agency exists, and in these, the estimates of area are more or less conjectural. But steps are taken to revise the figures from time to time by careful comparison with the conditions in the adjoining areas of a similar character for which accurate statistics are available. Estimates of areas under mixed crops are also more or less conjectural, being based on formulae prescribed by Provincial authorities.

3. On the whole, the figures of area are sufficiently accurate and are stated by the late Mr. Stuart to be better than the corresponding American figures.* In America a detailed census of areas of crops grown is taken only once in 10 years and there is no attempt to obtain actual areas for forecasts. There are, however, the two instances mentioned above in which errors are possible in the area estimates reported in India. Instances have also occurred in which patwaris have failed to report area figures in time.

4. The second factor, *the standard normal outturn per acre*, is based on crop cutting experiments and on local estimates in some districts. A statement of the normal yield per acre of land of average quality is maintained in each province by the Agricultural Department. This is tested by crop cutting experiments conducted annually on selected plots of land of average quality. The results of the experiments are carefully scrutinized by the Head of the provincial Agricultural Department who, after further investigations, revises the standards, if necessary. Such revision is usually made once in five years.

5. The true normal is of a visionary character and difficult to determine. In India several attempts have been made to define it and the briefest definition framed appears to be "the average yield on average soil in a year of average character." The figures of normal yield obtained in India have been generally admitted to be unreliable.

6. As regards the third factor, *the condition estimate*, the practice in most districts in India is to take a certain number of annas as representing a normal crop and to estimate the outturn of the year as so many annas higher or lower than that normal. The anna standard, however, has no fixed or uniform value, as the number of annas taken to represent a normal crop is generally sixteen but in some tracts it is twelve. Consequently, the anna estimate is converted into a percentage estimate in accordance with the American notation, 100 being taken to represent a normal crop.

7. The system of making estimates in India has been found in some parts of the country to be very defective. The estimates are for the most part guess work and the tendency is generally to under-estimate a good crop.

APPENDIX C.

Yield (quantity & value) is required of the following :—

- (1) Ragi, arhar, barbati, lobia, mung, kulthi, urad, field gram, cheik, lentils, cheenar, kangni, kolo or varagu, kutki, kuhud, peas, pigeon or bottle grass, swank or shama, chickling vetch, buck wheat, wudalu or barti.
- (2) Vegetables.
- (3) Fruit (No. of bearing and non-bearing trees, quantity and value of fruit yielded).

- (4) Condiments and spices.
- (5) Sugar, other than sugarcane (*i.e.*, date palm, palmyra palm).
- (6) Other food crops (amaranths, arrowroot, kimi, mahua).
- (7) Coconut.
- (8) Other oilseeds (dill or sowa, mast wood, neerali, niger seed, sunflower, unda).
- (9) Other fibres (agave, sunn hemp, Deccan hemp, sisal hemp, kapok, korai, rhea, sabai grass, swallow-wort).
- (10) Other dyes and tanning materials (arnatto, chayroot, divi-divi, henna, madder, morinda, safflower, saffron).
- (11) Opium (obtainable from Excise statistics).
- (12) Tobacco.
- (13) Cinchona.
- (14) Indian hemp.
- (15) Other drugs and narcotics.
- (16) Fodder crops including oats.
- (17) Miscellaneous non-food crops, (*e.g.*, mulberry).
- (18) Pan leaf.
- (19) Dried fruit (? whether it should be included under the "food" group of "cottage industries") including raisins and currants.

APPENDIX D.

LIST OF FOREST PRODUCTS.

- (1) *Timber.*
- (2) *Fuel*
- (3) *Charcoal.*
- (4) *Fibres.*
 - (a) From leaves, *e.g.*, "Kittal" fibre from Sago Palm leaves, Sisa: fibre from the Agave plant,
 - (b) Stem and bast fibres, *e.g.*, Kumbi, Dhamin.
- (5) *Grasses.*
 - (a) Fibre grasses,
 - (b) Thatching grasses,
 - (c) Grazing and Fodder grasses,
 - (d) Others, *e.g.*, Khas-khas.
- (6) *Distillation Products.*
 - (a) Wood-oils, *e.g.*, Sandal-wood oil, tar-oil from teak. Deodar oil,
 - (b) Grass-oils, *e.g.*, Lemon-grass oil,
 - (c) Cutch and Kath,
 - (d) Camphor,
 - (e) Cinnamon-oil.
- (7) *Seeds.*
 - (a) Edible, *e.g.*, Grass-seeds, Bamboo seed,
 - (b) Oil, *e.g.*, Mohwa oil (used for adulterating ghee). Kozum oil Walnut oil,

- (c) Medical,
 - (d) Soap nut.
- (8) *Bark.*
- (a) Tanning, *e.g.*, Babul, Sunari bark from the Laburnum.
 - (b) Dyeing, *e.g.*, Casuarina,
 - (c) Medical, *e.g.*, Kura, Neem, Cinchona, Indian Red Wood
 - (d) Substitute for tea, *viz.*, Yew.
- (9) *Wood Dyes, e.g.*, Red Sanders.
- (10) *Fruit.*
- (a) Edible, *e.g.*, Jack, Mango, Walnut, Jaman, Mangosteen
 - (b) Tanning, *e.g.*, Myrabolams,
 - (c) Medical, *e.g.*, Bacl.
- (11) *Leaves.*
- (a) Edible.
 - (b) Cigarettes, *e.g.*, Tendu,
 - (c) Food for cattle, goats, sheep, horses, *e.g.*, Anjan.
 - (d) Tanning, *e.g.*, Dhaura,
 - (e) Thatching, *e.g.*, Palm.
- (12) *Roots.*
- (a) Edible,
 - (b) Medical, *e.g.*, "Jaman,"
 - (c) Dyeing.
- (13) *Flower.*
- (a) Liquor, *e.g.*, Mahwa.
 - (b) Dyeing, *e.g.*, Palas, dye from the Toon flowers
- (14) *Spices, e.g.*, Cardamoms.
- (15) *Bamboos and Canes.*
- (16) *Gums and Gum Resin, e.g.*, Gum-kino, Dhauru, Mohin
- (a) Resins, *e.g.*, Sal, Thingan
 - (b) Oleo-Resin, *e.g.*, "Gurjan" Oil,
 - (c) Pine-Resin, *e.g.*, Chir, Blue Pine,
 - (d) Turpentine,
 - (e) Resin.
- (17) *Rubber.*
- (18) *Animal Products*
- (a) Lac,
 - (b) Honey.
 - (c) Bees' Wax,
 - (d) Cocoons,
 - (c) Elephants,
 - (f) Ivory,
 - (g) Horns and skins.
- (19) *Sawdust, e.g.*, Sandal wood for scenting clothes.
- (20) *Miscellaneous Minor products, e.g.*, Mica.

APPENDIX E.

The minerals for which regularly recurring and full particulars cannot be procured are —

Alum.
Amber.
Apatite
Asbestos.
Barytes.
Bauxite (Aluminium).
Building materials.
Clays.
Fuller's earth.
Gypsum.
Hyalite.
Ilmenite.
Ochre.
Soda.
Steatite.
Zircon.

No returns for the year 1923, are given in the case of the following among other minerals —

Agate.
Amethyst.
Antimony.
Aquamarine.
Arsenic.
Alunogen.
Blue vitriol, copperas and magnesium sulphate
Borax.
Bismuth.
Building stone (Common)—
 Slates ².
 Limestones.
 Basalt.
 Granite.
 Sandstones.
 Kankar.
 Laterite.
 Marble ².
Building materials—(e.g., Dolomite, Gneiss, etc.)
Cobalt.
Corundum ².
Celestite.
Fluor spar.
Graphite ¹.
Garnet.
Glass making materials (sands and efflorescent alkali salts).

¹ Approximately trustworthy returns were given in the last Quinquennial Review of Mineral Production, 1914-1918.

² Incomplete returns were given in the last Quinquennial Review of Mineral Production, 1914-1918.

Lignite.
 Lithographic stone.
 Molybdenum.
 Mercury.
 Mineral waters.
 Nickel.
 Phosphates.
 Peat.
 Potash salts.
 Precious stones—(e.g., Opal, Turquoise, Topaz, etc.).
 Rock crystal.
 Rose quartz.
 Refractories—
 Fire-clay.
 Kaolin.
 Quartzite.
 Sillimanite.
 Kyanite.
 Rare minerals—(e.g., Pitchblende, Platinum and Iridosmine. etc.).
 Sulphur.
 Sulphate of soda.
 Sulphite ores.
 Strontium.
 Titanium.
 Uranium.
 Vanadium.

APPENDIX F. (1).

List of large Industrial Establishments for which statistics are available.

For all establishments—

The number of employees.

For Breweries—

- (i) Number.
- (ii) Production in gallons.

For Cotton Mills—

- (i) Number.
- (ii) Authorised Capital, Paid-up Capital and Debentures.
- (iii) Number of looms.
- (iv) Number of spindles.
- (v) Quantity and counts of yarn produced.
- (vi) Quantity and value of woven goods.
- (vii) Amount of Excise Duty.

For Jute Mills—

- (i) Number.
- (ii) Capital authorised, Paid-up, Debentures.
- (iii) Number of looms.
- (iv) No. of spindles.

For Paper Mills—

- (i) Number.
- (ii) Authorised Capital.
- (iii) Quantity and value of production.

For Woollen Mills—

- (i) Number.
- (ii) Authorised Capital.
- (iii) Number of looms.
- (iv) Number of spindles.
- (v) Quantity and value of production.

For Distilleries—

- (i) Number.
- (ii) Total Issues.

APPENDIX F. (2)

Statistics are not available for—

(i) Textiles—

- Clothing agencies and factories.
- Coirmat and matting works.
- Cotton spinning and weaving establishments not classed as mills.
- Cotton waste factories.
- Dress making and military establishments.
- Hosiery factories.
- Fancy embroidery-chicon.
- Jute mills.
- Gold or Silver thread works.
- Shawl weaving establishments.
- Sewing thread factories.
- Silk mills.
- Silk weaving establishments.
- Tent factories.
- Tailoring establishments.
- Woollen carpet weaving establishments.
- Woollen weaving factories.

(ii) Minerals—

- Agricultural machinery.
- Aluminium factories.
- Coke manufacturing works.
- Colliery workshops.
- Copper ore crushing works.
- Enamel-ware works.
- Gold cyanide works.
- Gold washing works.
- Galvanized-ware, tin-ware and steel-trunk factories.
- Iron and brass works and foundries.

(ii) *Minerals—contd.*

Iron and steel producing works.
 Lock and cutlery works.
 Metal works.
 Mica splitting works.
 Oil pumping stations.
 Petroleum refineries.
 Saltpetre refineries.
 Sheet metal works.

(iii) *Transport—*

Dockyards.
 Engineering works.
 Harbour works.
 Port Trust workshops.
 Railway workshops.
 Ship and boat building and repairing works.
 Tramway works.

(iv) *Food, drink and tobacco—*

Bakeries.
 Bidi or Biri works.
 Biscuit factories.
 Butter and cheese factories.
 Coffee works.
 Dairy farms.
 Decorticating factories.
 Flour mills.
 Fruit preserving and canning factories.
 Ice, mineral and aerated water factories.
 Jam and condiment factories.
 Opium factories
 Ham and bacon curing.
 Rice mills.
 Sugar mills and refineries.
 Tobacco, cigar and cigarette factories.

(v) *Chemicals, dyes, etc.—*

Bone crushing mills.
 Candle factories.
 Chemical works.
 Camphor works.
 Dye works.
 Fish oil factories.
 Lac factories.
 Oil mills.
 Paint works.
 Printing Ink works.
 Soap factories.
 Tar distilleries.
 Turpentine factory.

(vi) Paper and printing—

Book-binding works.
 Printing presses.

(vii) Processes relating to wood, stone and glass—

Bobbin factories.
 Building and contracting.
 Carpentry.
 Cement works.
 China or porcelain works.
 Coach building and motor car repairing works.
 Furniture workshops.
 Glass factories.
 Lime works.
 Potteries.
 Saw mills.
 Stone works.
 Tile and brick factories.
 Miscellaneous.

(viii) Processes connected with skins and hides—

Leather factories (including boot and shoe, saddlery and harness factories.)
 Boot and shoe repairing establishments.
 Tanneries.
 Tanning Extract works.

(ix) Miscellaneous—

Arms and Ammunition.
 Arsenals.
 Brush and Broom works.
 Canal foundries and workshops.
 Cotton ginning, cleaning and pressing mills.
 Despatch box manufactories.
 Electrical engineering workshops.
 Electric light and power stations.
 Engineering workshops.
 Fish curing yards and preserving works.
 Forage presses.
 Galvanizing works.
 Gas works.
 Gun carriage factories.
 Jewellery workshops.
 Jute presses.
 Kerosene tinning and packing works.
 Manure works.
 Match factories.
 Mathematical instrument factories.
 Mechanical transport repair workshops.
 Mints.
 Motor works.

(ix) Miscellaneous—contd.

Musical instrument factories.
Municipal workshops.
Postal workshops.
Rope and twine works.
Rubber works.
Sappers and miners workshops.
Silk filatures.
Slaughter yards.
Sports requisites factories.
Stores factories.
Surgical instrument factories.
Telegraph works.
Umbrella factories.
Water works.
Miscellaneous (not enumerated above)

M11EEC

APPENDIX G.

(a) *The Occupational Classification adopted at the Indian Census of 1921.*

(A) Production of raw materials.	(B) Preparation and Supply of material substances.	(C) Public administration and liberal arts.	(D) Miscellaneous.
<p>(I) <i>Exploitation of animals and vegetation.</i>—</p> <p>1. Pasture and agriculture—</p> <p>(a) Ordinary cultivation, (b) Growers of special products and market gardening, (c) Forestry, (d) Raising of farm stock, (e) Raising of small animals.</p> <p>2. Fishing and hunting.</p> <p>(II) <i>Exploitation of minerals</i>—</p> <p>1. Mines, 2. Quarries of hard rocks, 3. Salt, etc.</p>	<p>(III) <i>Industry</i>—</p> <p>1. Textiles. 2. Hides, skins and hard materials from the animal kingdom. 3. Wood. 4. Metals. 5. Ceramics. 6. Chemical products properly so called, and analogous. 7. Food industries including dairies. 8. Industries of dress and the toilet. 9. Furniture industries. 10. Building industries. 11. Construction of means of transport. 12. Production and transmission of physical forces (heat, light, electricity, motive power, etc.). 13. Other miscellaneous and undefined industries.</p> <p>(IV) <i>Transport</i>—</p> <p>1. Transport by air. 2. „ „ water.</p>	<p>(VI) <i>Public Force</i>—</p> <p>1. Army. 2. Navy. 3. Air force. 4. Police.</p> <p>(VII) <i>Public administration.</i> (Order 45.)</p> <p>(VIII) <i>Professions and liberal arts</i>—</p> <p>1. Religion. 2. Law. 3. Medicine. 4. Instruction. 5. Letters and arts and sciences</p>	<p>(IX) <i>Persons living principally on their income.</i> (Order 51.)</p> <p>(X) <i>Domestic service.</i> (Order 52.)</p> <p>(XI) <i>Insufficiently described occupations.</i></p> <p>(XII) <i>Unproductive</i>—</p> <p>1. Inmates of jails, asylums and alms-houses. 2. Beggars, vagrants and prostitutes. 3. Other unclassified non-productive industries.</p>

(a) *The Occupational Classification adopted at the Indian Census of 1921—contd.*

(A) Production of raw materials.	(B) Preparation and Supply of material substances.	(C) Public administration and liberal arts.	(D) Miscellaneous
	<p>3. Transport by road. 4. " " rail. 5. Post Office, telegraph and telephone services.</p> <p>(V) Trade—</p> <p>1. Banks, establishments of credit, exchange and insurance. 2. Brokerage, commission and export. 3. Trade in textiles. 4. " " skins, leather and furs. 5. " " wood. 6. " " metals. 7. " " pottery, bricks, and tiles. 8. " " chemical products. 9. Hotels, cafes, restaurants, etc. 10. Other trade in food stuffs. 11. Trade in clothing and toilet articles. 12. Trade in furniture. 13. " " building materials. 14. " " means of transport. 15. " " fuel. 16. " " articles of luxury and those pertaining to letters, arts and sciences. 17. Trade of other sorts.</p>		

(b) *The Classification given in "Large Industrial Establishments in India" published by the Department of Statistics.*

I.—Textiles—

Clothing agencies.
 Cotton mills
 Cotton spinning and weaving establishments not classed as mills.
 Hosiery factories.
 Jute Mills.
 Silk mills.
 Woollen carpet weaving establishments, not classed as mills.
 Woollen mills.
 Miscellaneous.

II.—Minerals—

Aluminium factories.
 Colliery workshops.
 Iron and brass foundries.
 Iron and steel producing works
 Lock and cutlery works.
 Gold washing works.
 Metal works.
 Mica works.
 Petroleum refineries.
 Miscellaneous.

III.—Transport—

Dockyards.
 Harbour works.
 Railway workshops and other factories.
 Shipbuilding and engineering works
 Tramway works.

IV.—Food, drink and tobacco—

Bakeries.
 Biscuit factories.
 Breweries.
 Coffee works.
 Dairy farms.
 Distilleries.
 Flour mills.
 Ice and mineral and aerated water factories
 Opium factories.
 Pulse factories.
 Rice mills.
 Sugar factories.
 Tobacco factories.
 Miscellaneous.

VI.—Chemicals, Dyes, etc.—

Bone-crushing mills.
 Chemical works.
 Dye-works.
 Lac factories.
 Oil mills.
 Paint works.
 Soap factories.
 Turpentine factories.
 Miscellaneous.

VII.—Paper and Printing—

Paper mills.
 Printing presses.
 Book-binding works.
 Miscellaneous.

VIII.—Processes relating to wood, stone and glass—

Carpentry.
 Cement works.
 Coach building and motor car repairing works
 Furniture works
 Glass factories.
 Potteries.
 Saw mills.
 Stone works.
 Tile and brick factories (including surkhi mills).
 Lime works.
 Miscellaneous.

IX.—Processes connected with skins and hides—

Leather works.
 Tanneries.
 Miscellaneous.

X.—Miscellaneous—

Aeroplane workshops.
 Arms and ammunition.
 Arsenals.
 Brush works.
 Button factories.
 Canal foundries and workshops.
 Canvas water proofing factories.
 Cotton, ginning, cleaning and pressing mills.
 Electrical engineering works.
 Engineering workshops.
 Forage presses.
 Galvanizing works.
 Gas works.
 Gun Carriage factory
 Jewellery workshops.

IX.—*Miscellaneous*—contd.

Jute presses.

Kerosene, tinning and packing works.

Manure works.

Match factories.

Mathematical instrument factories.

Mechanical transport repair workshops.

Mints.

Municipal workshops.

Motor works.

Packing box factories.

Port Trust workshops.

Postal workshops.

Reed and comb factories.

Rope works.

Rubber works.

Sappers and miners workshops.

Silk filatures.

Store works.

Surgical instrument factories.

Telegraph works.

Umbrella factories.

Water works.

Miscellaneous (not enumerated above)

(c) *Classifications of Industries adopted by the Dominions.*

Canada.	South Africa.	New Zealand.	Australia.
<ol style="list-style-type: none">1. Vegetable products.2. Animal products.3. Textiles and textile products.4. Wood and paper.5. Iron and steel products.6. Non-ferrous metals and their products.7. Non-metallic mineral products.8. Chemical and allied products.9. Miscellaneous industries.10. Construction, hand trades and repairs.	<ol style="list-style-type: none">1. Treatment of raw material, the product of agricultural and pastoral pursuits (excluding tanning).2. Processes in stone, clay, earthenware and glass.3. Working in wood.4. Metal, engineering, machinery, and cutlery works.5. Preparation, treatment, and preserving of food, drink, condiments and tobacco.6. Production of clothing (excluding boots and shoes), textile fabrics and similar articles.7. Books, paper, printing and engraving.8. Vehicles (mechanically propelled and otherwise), fittings for and parts of vehicles.9. Ship and boat building and repairing.10. Furniture, bedding and upholstery.11. Drugs, chemicals (including fertilizers and by-products), paints, varnishes and allied products.	<ol style="list-style-type: none">1. Animal food.2. Vegetable food.3. Drinks, narcotics and stimulants.4. Animal matters (not otherwise classed).5. Working in wood.6. Vegetable produce for fodder.7. Paper manufactures.8. Heat, light and power.9. Processes relating to stone, clay, glass, etc.10. Metals other than gold or silver.11. Precious metals.12. Books and publications.13. Musical instruments.14. Ornaments and minor art products.15. Equipment for sports and games.16. Designs, medals, type and dies.17. Ammunition and explosives and fire-works making.18. Machines, tools and implements.19. Carriages and vehicles.	<ol style="list-style-type: none">1. Treating raw material, product of agricultural and pastoral pursuits, etc.2. Treating oils and fats, animal, vegetable, etc.3. Processes in stone, clay, glass, etc.4. Working in wood.5. Metal works, machinery, etc.6. Connected with food and drink, etc.7. Clothing and textile fabrics, etc.8. Books, paper, printing and engraving.9. Musical instruments, etc.10. Arms and explosives.11. Vehicles and fittings, saddlery and harness, etc.12. Ship and boat building and repairing.13. Furniture, bedding and upholstery.14. Drugs, chemicals and by-products.15. Surgical and other scientific instruments.16. Jewellery, timepieces and plated ware.

(c) *Classifications of Industries adopted by the Dominion:—contd.*

Canada.	South Africa.	New Zealand.	Australia.
	<p>12. Surgical, dental and other scientific instruments and appliances.</p> <p>13. Jewellery, time-pieces and plated ware.</p> <p>14. Heat, light and power.</p> <p>15. Leather and leatherware.</p> <p>16. House building.</p> <p>17. Other industries.</p>	<p>20. Harness, saddlery and leatherware.</p> <p>21. Ships, boats and their equipment.</p> <p>22. House-furnishings.</p> <p>23. Chemicals and bye-products.</p> <p>24. Textile fabrics.</p> <p>25. Apparel.</p> <p>26. Fibrous materials.</p> <p>27. Miscellaneous (not included above).</p>	<p>17. Heat, light and power.</p> <p>18. Leatherware.</p> <p>19. Minor wares.</p>

APPENDIX H.

DETAILED CLASSIFICATION OF COTTAGE INDUSTRIES.

I. TEXTILES.

(a) *Cotton Industry*—

- (i) Hand cleaning,
- (ii) Hand ginning,
- (iii) Hand spinning.
- (iv) Hand weaving,
- (v) Durrie weaving,
- (vi) Carpet weaving,
- (vii) Hosiery,
- (viii) Cotton rope, twine and string,
- (ix) Tents,
- (x) Newar tape, etc.

(b) *Silk Industry*—

- (i) Sericulture,
- (ii) Reeling,
- (iii) Carding,
- (iv) Spinning,
- (v) Weaving,
- (vi) Embroidery work *

(c) *Woollen Industry*—

- (i) Carding,
- (ii) Spinning,
- (iii) Weaving of shawls, dhusa, lohis, pattu, blankets, etc.,
- (iv) Felt (namda) making,
- (v) Weaving of woollen carpets and durries.

(d) *Other Fibres (Cocoanut, aloes, flax, hemp, jute, straw, reed, khajur bark, etc.)*—

- (i) Rope and string, etc.,
- (ii) Mats,
- (iii) Tat weaving.

(e) *Dyeing and Calico Printing*—

- (i) Dyeing,
- (ii) Calico printing, e.g., chintz, curtains, bed covers, table cloths, etc.

* NOTE :—(i) The different branches of the Benares and Surat silk embroidery industry may be classified as follows. (a) Tarkashi or wire makers and gilders, (b) Silver or gold thread or Kalabatun makers, (c) Dyers, (d) Designers and (e) Weavers.

(ii) Among the silk weavers there are three kinds of workers—

- (a) Weavers of ordinary silk cloth such as Kashi silk, sari and dupatta workers.
- (b) Kamkhwab, pot, amru, mashru, etc., workers.
- (c) Brocade weavers.

(f) *Gold and Silver wire weaving and allied Industry**—

- (i) Gota weaving,
- (ii) Lace weaving,
- (iii) Zardozi work,
- (iv) Kamdani work,
- (v) Kamkhwab weaving.

2. TANNING AND LEATHER MANUFACTURE.

- (i) Tanning, leather dressing, dyeing, etc.,
- (ii) Leather articles, e.g., water bags, buckets, shoes, boots, buttons, suit and attack cases.

3. SOAP AND OIL INDUSTRY.

- (i) Vegetable and seed oils,
- (ii) Perfumed oils,
- (iii) Scents and perfumes,
- (iv) Country dhobis' soap,
- (v) Country toilet soap.

4. METALS.

(a) *Brass and Copper*—

- (i) Manufacture of domestic vessels by moulding,
- (ii) Manufacture of domestic vessels by beating sheet brass,
- (iii) Manufacture of tin plated utensils,
- (iv) Manufacture of artistic brass wares by engraving (*Siahah Kalam Work*),
- (v) Manufacture of artistic brass wares by embossing, e.g., Benares brass wares,
- (vi) Lock manufacture,
- (vii) Brass Jewellery.

(b) *Iron, steel and minor metals*—

- (i) Utensils from sheet iron,
- (ii) Implements and tools,
- (iii) Cutlery, scissors, etc.,
- (iv) Steel trunks,

* NOTE :—The gold and silver wire and allied industry may conveniently be treated here. The various branches of this cottage industry are—

- (1) *Kandila*, i.e., beating out of a piece of plain silver or silver plated with gold leaf into thick wire.
- (2) *Tarkashi*, i.e., the process of lengthening out the thick wire into thin wire or thread, the thinness being regulated according to the purposes for which it is wanted.
- (3) *Tardabkana*, i.e., the flattening of the thin wire to produce what is known as 'badla' used for making lace or Kamdani.
- (4) *Kalabatun*, i.e., the making or twisting of the gold or silver thread round fine silk or cotton thread to produce a composite twist which is used in the weaving of brocade or similar material.
- (5) The manufacture of "Salma" (wire curled into spiral form) and "Sitara" (Stars and spangles) used for embroidery.
- (6) The weaving of gota with silk or cotton warp and "badla" woof.
- (7) *Zardozi*, i.e., embroidery on fine cotton, silk or velvet cloth with "Salma Sitara."
- (8) *Kamdani*, i.e., embroidery on cotton, silk or velvet with gold or silver wire and thread.

The artisans confine themselves as a rule to only one branch of the industry.

- (v) Locks and safes,
- (vi) Nails, hinges, screws, etc.,
- (vii) Aluminium articles,
- (viii) German silver household-utensils, jewellery, etc.

5. WOOD, CANE, BAMBOO, REEDS, ETC., INDUSTRIES.

- (i) Coach building,
- (ii) Carts and ploughs,
- (iii) Boat building,
- (iv) Palkis,
- (v) Furniture,
- (vi) Casks,
- (vii) Wood turning and lacquer work,
- (viii) Wood and ebony carving,
- (ix) Combs,
- (x) Tarkashi working, *i.e.*, inlaying of brass wire in wood locally,
- (xi) Wooden toys, *e.g.*, in Benares and Chanapatna (Mysore State).
- (xii) Bamboo and cane work, *e.g.*, bamboo and cane furniture, baskets, etc.,
- (xiii) Moonj basket work,
- (xiv) Khajur and tar fans,
- (xv) Painting,
- (xvi) Upholstery,
- (xvii) Sawing.

6. STONE AND BUILDING INDUSTRIES.

- (i) Stone cups, plates, tumblers, buttons, etc.,
- (ii) Mills or hand chakkis,
- (iii) Inland stone working,
- (iv) Stone cutting and dressing,
- (v) Stone engraving,
- (vi) Well sinking,
- (vii) Masonry-work,
- (viii) Brick laying,
- (ix) Tile manufacturing.

7. CERAMICS.

- (i) Glass bangles and phials,
- (ii) Lac bangles, necklaces, etc.,
- (iii) Manufacture of blown and moulded articles, *e.g.*, flasks for pilgrims to carry Ganges water, jars, chimneys, vases, etc.,
- (iv) Common domestic pottery,
- (v) Coloured and glazed pottery,
- (vi) Art and china pottery,
- (vii) Earthen toys,
- (viii) Mosaic, talc, mica, alabaster, etc., working.

8. FOOD INDUSTRIES.

- (i) Rice pounding and husking,
- (ii) Flour grinding,
- (iii) Bakery and biscuit manufacture,
- (iv) Grain parching,
- (v) Butter, cheese and ghi.

- (vi) Confectionery,
- (vii) Jam and condiments,
- (viii) Butchery,
- (ix) Sugar, molasses and gur,
- (x) Tobacco,
- (xi) Bidis,
- (xii) Cigars and cigarettes.

9. INDUSTRIES OF DRESS, TOILET AND LUXURY.

- (i) Tailoring,
- (ii) Linen embroidery,
- (iii) Knitting,
- (iv) Turban making,
- (v) Cap making,
- (vi) Wig making.

10. CHEMICALS, VARNISH AND PAINTS.

Manufacture of—

- (i) country drugs,
- (ii) dyes,
- (iii) paints and varnish,
- (iv) printing ink,
- (v) saltpetre,
- (vi) indigo,
- (vii) alum,
- (viii) salt,
- (ix) boot and shoe polish,
- (x) writing ink.

11. GOLD AND SILVER INDUSTRY.

- (i) Wire making,
- (ii) Thread making,
- (iii) Leaf making,
- (iv) Ornament making,
- (v) Bidri working (the damascening of silver on lead).

12. SOME MINOR INDUSTRIES

- (i) Engraving,
- (ii) Musical instruments,
- (iii) Spectacles,
- (iv) Enamelling,
- (v) Imitation jewellery and gilding,
- (vi) Rosaries, lingams and sacred-threads,
- (vii) "Chikan" work,
- (viii) Horn combs, etc.,
- (ix) Ivory articles,
- (x) Sola hat making,
- (xi) Peacock feather fan making,
- (xii) Paper manufacture by hand and power.
- (xiii) Papier-maché work,
- (xiv) Lac manufacture,
- (xv) Water mills,
- (xvi) Working in precious metals.

APPENDIX I.

Estimates of the Annual Income of India.

Estimates of	Published in	Area.	Year.	Total income (in crores of Rupees).	Income per Head. Rs.
1. Dadabhai Naoroji.	Poverty and Un-British Rule in India (1871).	British India	1867-68	340	20
2. Atkinson (F. J.)	"A Statistical Review of the Income and Wealth of British India." Journal of the Royal Statistical Society, June 1902.	Ditto ..	1875	574	30.5
3. Baring, Major (Lord Cromer).	Budget Speech, 1882 ..	Ditto ..	1881 ..	525	27
4. Richard, T. (Sir).	A paper read before the Institute of Bankers, London, July 1881.	Ditto ..	1881 ..	223	10*
5. Horne (E.A.)	"An Estimate of India's National Income." Article in the Bengal Economic Journal, January 1918.	Ditto ..	1891 ..	..	28
6. Atkinson (F. J.)	(Same as No. 2)	Ditto ..	1895 ..	877	39.5
7. Digby (W.)	"Prosperous" British India, 1901.	Ditto ..	1898-99	428	18/9
8. Curzon (Lord)	Budget Speech, 1901 ..	Ditto ..	1901 ..	675	30
9. Giffen, R. (Sir).	Economic Inquiries and Studies.	Whole of India	1903 ..	900	30
10. Balkrishna (Dr.)	Industrial Decline of India, 1917.	Ditto ..	1911-12	{ (a) 1,078 (b) 539 (c) 431.2	21 16.5
11. Horne (E.A.)	(Same as No. 5)	British India	1911 ..	980	42
12. Shirras (G.F.)	Report on an Enquiry into Working Class Budgets in Bombay.	Ditto ..	1911 ..	{ (d) 1,204 (e) 1,920	50 80
13. Wadia, (P.A.) and Joshi (G. N.).	The Wealth of India, 1925 ..	Ditto ..	1913-14	1,087	44/5
14. Lupton (A.)	Happy India, 1922 ..	Ditto ..	1919-20	2,854.5	114
15. Shah (K. T.)	Trade, Tariffs and Transport in India, 1923.	Ditto ..	1921-22	1,470	46
16. Sarma (B. N. Sir, Hon'ble).	Proceedings of the Council of State, (6th March, 1921).	Ditto ..	{ 1911 .. 1921 ..	..	86 over 100
17. Shah (K. T.) and Khambata (K. J.)	Wealth and Taxable Capacity of India, 1924.	Whole of India	{ 1900-14 1914-22 1900-22 1921-22	1,106 1,862 1,380 2,364	36 58.5 44.5 74
18. Shirras (G.F.)	The Science of Public Finance, 1924.	British India	{ 1921 .. 1922 ..	2,598 2,866	107 116
19. Slater (Dr. C.)	The Madras Year Book, 1923	Madras Presidency.	1919-20	{ (f) 434 (g) 475	112

(a) Gross value of agricultural produce.

(b) Net value allowing 50 per cent. of gross value for cost of production.

(c) Net value allowing 60 per cent. of gross value for cost of production.

(d) Framed on the same basis as Lord Curzon's estimate.

(e) By a more elaborate method than that adopted by Lord Curzon.

(f) The non-agricultural income being taken at 40 per cent. of that from agriculture.

(g) The non-agricultural income being taken at 50 per cent. of that from agriculture.

* Not verified.

APPENDIX J.

CLASSIFICATION OF NATIONAL WEALTH OF INDIA.

I. Private (Individual and Collective).

- (i) Land and buildings.
- (ii) Agricultural, dairying and pastoral implements and machinery.
- (iii) Livestock.
- (iv) Manufacturing plant and machinery.
- (v) Mining properties (including plant and machinery).
- (vi) Coin and bullion.
- (vii) Private railways, tramways and telephone systems.
- (viii) Shipping and canal and other waterways.
- (ix) Electric light and power.
- (x) Agricultural and pastoral products.
- (xi) Manufactured products.
- (xii) Mining products (other than gold).
- (xiii) Imported merchandise.
- (xiv) Clothing and personal adornment (including jewellery).
- (xv) Furniture and fittings, books, etc.
- (xvi) Motor vehicles, carriage, etc.

II. Public (Government and local bodies).

- (i) Land, buildings and other property.
- (ii) Livestock.
- (iii) Forests.
- (iv) Irrigation works.
- (v) Water works.
- (vi) Roads and streets.
- (vii) Railways and tramways.
- (viii) Indian Marine.
- (ix) Ports and harbours.
- (x) Arsenals and defensive works.
- (xi) Ordnance and military accoutrements.
- (xii) Military transport and air service.
- (xiii) Manufacturing plant and machinery.
- (xiv) Mints.

APPENDIX K.

FAMILY BUDGETS.

Rural Family Budgets—

- | | | |
|--------------------|----|--|
| Bhalla, (R. L.) .. | .. | "An Economic Survey of Bairampur Village". Government Press, Lahore, 1922. |
| Lucas, (E. D.) .. | .. | "The Economic Life of a Punjab Village". Civil and Military Gazette, Lahore. |
| Patro, (A. P.) .. | .. | "Studies in Village Economics". Contains budgets of families in the Ganjam district. Justice Printing Works, Madras. |

Annual Reports of the Chanakya Society, Patna College. Beharee Printing Works, Patna.

Report of the Assam Labour Enquiry Committee, 1921-22. Government Press, Assam.

Urban Family Budgets—

- Bombay Labour Office .. "Report on an Enquiry into Working-class budgets in Bombay", 1923. Government Central Press, Bombay.
- Burnett-Hurst, (A. R.) .. "Labour and Housing in Bombay". P. S. King and Son, London.

Middle Class Family Budgets—

- Caleb (Mrs.) .. "Family Budgets of Clerks"—A study of the residents of Lahore City. Mufid-i-Am Press, Lahore.

Unclassified Family Budgets—

- Bombay Census Report 1921. Appendix W. (6,000 Family budgets.)
- Assam Census Report, 1921. (Budgets of different classes.)
- Baluchistan Census Report, 1921.

D

ALLAHABAD.

(Note.—Witnesses from the United Provinces were examined at this centre.)

Mr. C. D. THOMPSON, M.A., Professor of Economics, Ewing Christian College.

Oral evidence, the 6th April 1925.

Chairman.—Q.—Could you kindly tell us what your opportunities have been of studying the economic condition of the people ?

A.—I have been teaching economics here in India ever since 1912 and. I am afraid, most of my time has been spent on purely theoretical work and not on the practical side. Yet I have made several attempts to write practical notes, but none of them has been published. I have just been asked by the United Provinces' Council representative to make a survey in these provinces.

Q.—What surveys have you made ?

A.—I have made one survey of sweepers, another of a village of chamars near Benares and a third of weavers in Ranipur in the Jhansi district.

Q.—Have you got the results of those surveys ?

A.—I have worked out the results of two of them, but not of Ranipur.

Q.—What is the conclusion you have come to ?

A.—As regards the people in Chamar Mohalla near Benares, my conclusion was that their *per capita* wealth is Rs. 20. That shows that they are exceedingly poor.

Q.—That was their wealth ?

A.—No, income *per capita*. That would mean that the income per family would be five times that amount. The average wealth of sweepers in Etah district comes to about Rs. 240 per year per family. The families consist of six, on the average.

Mr. Kaul.—Q.—Income or wealth ?

A.—Income.

Chairman.—Q.—Your object in all cases has been to find out the income *per capita* ?

A.—I tried to find income per family *per capita* per bread winner. My average was that the number of bread winners was two per family. I found that usually the income of a family was double that of an adult male worker, taking their income together. I think on the average I should have said that a family consists of five and the family income will be five times *per capita* income, and the income per bread winner on the average of two per family will be half the income of a family.

Q.—What was the object of that investigation ? Did you advise them in any way to improve their earning power ?

A.—In Benares, I did it for Mr. Grant who was starting a Co-operative Society there and wanted to collect information in order to know what their capacity for borrowing was. Mr. Grant was making many plans but unfortunately the death of his two sons forced him to leave India. A great many missionaries were anxious to know just exactly what would be the people's wealth.

Q.—Have you made any investigation of their property ?

A.—I made an estimate of the property, but I do not remember exactly. However, the property was very small and they had almost nothing in the nature of capital except pigs.

Q.—What would their total capital be ?

A.—I am sorry, I do not remember. I remember in one case it was about Rs. 450.

Q.—That is a reasonable figure. Is it per head or per family ?

A.—That was the whole wealth of the family and that included everything including utensils, trees and animals.

Q.—Have you prepared family budgets for a whole village ?

A.—No. I used to take two rich people and two poor people.

Q.—Have you had occasion to compare conditions prevailing here with those in America ?

A.—I have constantly been trying to compare them for students.

Q.—A sweeper in New York has an income of about 1,800 dollars ?

A.—Recently the Labour Bureau said that a family could not live decently in a city on less than 1,500 dollars which is equal to Rs. 4,500. There are a great many whose income is not above 500 dollars. We have estimated that a great many farmers get 500 dollars a year in America but, of course, they live on farms, and prices of commodities are less. The prices would be considerably more in a city.

Q.—For a comparison between America and India, how would you explain the difference to your students ?

A.—I frequently tell them about my brother who is a farmer in America. He has six farmers working under him and their salaries range between 50 and 100 dollars a month. At the same time they get milk, potatoes and wood free. They each get an acre of land which they can cultivate in their spare time for vegetables and at the same time they get houses free of rent. So they get everything except their food grains and meat.

Q.—What aspects of economics have you studied specially ?

A.—I am teaching the M.A. class, to whom I have to teach everything. I have always been very much interested in public finance.

Q.—Have you made any analysis of the economic conditions of a province as a whole, of a district as a whole and of a village as a whole ?

A.—No. What I did was about a *chamar* village near Benares. I took every single house and every home into my consideration.

Q.—What do you think should be the object of an economic survey and what practical use can we make of the information collected ?

A.—I think we should start with a variety of estimates with regard to wealth and income. One thing which I feel is very necessary is that we should make some sort of comparison by index numbers between the value of one part of India and another, in the city and in the village, because people do not realise that there are certain incomes in villages which may be two or three times the income in a city. In Allahabad it may be two or three times more than in Bombay. I think it is very necessary that we should have relative index numbers for the city and for outlying villages farthest from the city so that when we have got a statement of income we should have some method of comparison.

Q.—We ought to have some method of comparison with the past ?

A.—Yes.

Q.—For that you also want index numbers to know whether the production of villages is increasing ?

A.—Most of the people believe that people in villages are growing poorer.

Q.—If every village keeps its account of total production it would be better ?

A.—I feel that there should be some permanent census bureau or other bureau which would make estimates as to production : then we would know whether the country was going backward or forward.

Q.—You are in favour of an initial economic census in order to take stock of existing conditions ?

A.—Yes.

Q.—How long do you think such a census would take ?

A.—It all depends upon how intensively you wish to take it. For instance, if we are just to take sample cases as I have usually done, taking one or two rich men and one or two poor men for each village, I do not think it would take so long. You need only take typical villages, some near the city, some ten miles away from the city and so on. You should take typical villages, having different agricultural conditions, different soil, etc., and then an average might be deduced.

Q.—How long do you think the initial stock-taking survey will take ?

A.—For instance, I spent only three days in Ranipur.

Q.—How many houses are there ?

A.—There are about a thousand families. I took only typical families and put many questions, for instance, about production, its market value at different times of the year. Of course, much was lacking. I feel that I gained a very fair idea of the condition of those people in those three days. I investigated weavers only and no other people.

Q.—Do they make thorough or random surveys in America ?

A.—Both are done. Of course, recently there have been a great many intensive surveys. The survey in the county of Pittsburg was completed in six volumes and it took about a year with a staff of 20

trained workers. I do not think one need go through the whole country so intensively, but we should take typical families.

Q.—Their Census Bureau is a permanent bureau and it takes a Census of Production continuously between the population censuses. Would you advise such a thing for India ?

A.—I think it would be exceedingly valuable, but the question is of cost.

Q.—But the object of the survey is to improve conditions ?

A.—I believe that the information that will be obtained will lead to considerable improvement ; and unless we know what the income of the people is, how are the people themselves to know what their condition is ?

Q.—Do you think it is desirable to have first a stock-taking survey ?

A.—I do not know if it is essential to have things done much more intensively but, of course, it might be worth while to have intensive surveys once in 50 years.

Q.—How long do you think the initial census will take ?

A.—Of course, it would vary with the number of workers.

Q.—Assuming that everybody helped, how long will it take ?

A.—Supposing you sent students to all villages it could be done in two or three months. The difficulty would be that there are many ignorant people. Many of the farmers are very shrewd and can give remarkably accurate figures but sometimes they forget. I think the enquiry would be better done for one month at one time of the year and for another month at another time of the year. It would be much better if one goes out at two different times in the year.

Q.—After the initial census is taken, would you keep an organisation to collect the information from year to year as they have in other countries such as the United States of America, Australia, and Canada ?

A.—I would like the figures to be collected every year, and the more accurate the information is, the more valuable it would be. From the point of view of a scientist and even from the point of view of a business man, if you are to make economic surveys and collect information as to the variation in prices and production, it would be necessary to take yearly figures.

Q.—The information would be very illuminating ?

A.—In the end it may be valuable from the point of view of rupees, annas and pies but, of course, at first it would be very expensive.

Q.—Do you think that the result would be worth the expenditure ?

A.—I think it well worth spending money on.

Q.—At what intervals would you have periodical censuses of agriculture ?

A.—It would be best to have one in every ten years.

Q.—In America they have detailed censuses every five years but you would prefer agricultural censuses undertaken here once in ten years ?

A.—I think that would be quite sufficient.

Q.—They take an industrial census every year ?

A.—Of course, the people there are educated.

Q.—There is little education here, and that is the trouble ?

A.—The managers of factories are educated, and if you compel them to give statistics then the census can be carried out.

Q.—Then you advocate the collection of industrial information every year ?

A.—Yes. Here, too, a great deal can be done, for example, in a district like Ranipur where there is a large number of weavers and a large quantity of material is brought by rail. One can know how much raw material comes to the district and how much goes out.

Q.—Have you ever had occasion to find out what the imports and exports are of the industries at Cawnpore ?

A.—No, I believe that this information can be easily obtained from the railway station.

Q.—Can you get information for the province as a whole ?

A.—I think that some accounts are kept, but I do not know how they are obtained.

Prof. Burnett-Hurst.—Q.—Inland trade returns are no longer collected. They have been discontinued owing to retrenchment.

A.—But the returns about cities would be more useful. I am sorry that the inland trade returns have been abolished.

Chairman.—Q.—You do not know whether the United Provinces are exporting or importing food ?

A.—The province imports in one year and exports in another.

Q.—Would you proceed with the study of economic conditions of a village, city, district, or a province as a whole ? Would you prepare surveys for every one of these geographical areas ? Supposing you had a free hand, how would you proceed ?

A.—I would try to do it for the whole province if I had money. I think it would be quite sufficient to take typical families in villages and then compute for each economic circle and for each economic province. I think it would be better to have surveys for a political province. I also think we should have surveys by districts and then we should combine the districts, both as provinces and as economic circles. I think some improvement on Mr. Datta's classification will be necessary.

Q.—Of what use are the results of an economic survey to the people of the country ? Would you collect them for the use of the Government or for the sake of the people and take measures to improve the latter's conditions ?

A.—Both. They could be used by Government and by the people and through them a just measure of taxation can be fixed.

Q.—What makes you think that the present taxation is not just ?

A.—I think there is too great an inequality in India.

Q.—Have you made an estimate at any time of the relation between taxation and production in India ?

A.—I have not made any estimate.

Q.—Would you make the people of the village collect information and study themselves and develop their economic condition ? Would they take the initiative in improving their economic condition ?

A.—If they did, it would be the very best thing.

Q.—Have you seen any such village in any other country ?

A.—You mean in America ? There even small villages have offices. They have farm bureaux which deal with the whole county where counties exist and sometimes in the largest town of the county. They collect farm statistics for the whole county and act something like a small chamber of commerce.

Q.—They have statistics for the whole State ?

A.—Yes.

Q.—So, if the statistics are collected it would be useful to Government and the people ?

A.—Even the most ignorant people can understand. It would be exceedingly valuable to the people and they will know what industries could be advanced, where the industries should be developed and at what price the commodities can be sold ; and they will know what things can be obtained and in which part of the country. A glance at the chart would show everything that is produced in India.

Q.—Have you studied agricultural statistics ?

A.—Yes.

Q.—How and in what respects are they deficient ?

A.—I am afraid I am not able to say that.

Q.—For the sake of the production census, how would you proceed in the United Provinces ?

A.—I think most of the big mills have very accurate statistics of their production—like the mills at Cawnpore. With regard to small industries, as I said, for instance, weavers of Ranipur procure practically all their yarn from mills in Agra and Cawnpore. A minor portion of their production is used locally—chiefly by women—while the remainder goes out by rail, and statistics regarding production can easily be taken from the railway station.

Q.—Supposing you were asked to advise about an economic survey of villages in the United Provinces, what initial information would you collect ?

A.—First of all, you have in the census reports very valuable information. For instance, take weavers. You may ascertain their number in every district, of those who follow the profession and also of those who follow it for a part of their time and the number of those who spend their time in agricultural pursuits. It would be necessary to get complete details. For instance, find the number of days per year spent in actual weaving by a person describing himself as a weaver. Then, one can make a calculation of the average amount of cloth that is woven by an average weaver.

Q.—Then you would prepare a yearly census of production for agriculture, industries and other minor industries and prepare a statement of their production ?

A.—Another means of check will be the number of looms in the case of weavers and also, in other cases, the number of agricultural cattle. There are three different ways of checking. First of all there are Government statistics. You can check the figures by the probable production of a number of labourers, then you can check tools and their probable production and compare each other. Then you can get consumption and check one against the other.

Q.—Consumption would give you the cost of living ?

A.—I have always tried to check consumption and production.

Q.—What would be the proper test, what are the measures you would take, what information would you collect to find the economic condition of the people of a village ?

A.—It seems to me that consumption is the real test of the income of the people. One can find out the value of their houses.

Q.—And the amount of wealth ?

A.—Yes.

Q.—You would insist upon each house-owner giving a return ?

A.—I think it would be sufficiently accurate.

Q.—No country can give you accurate information.

A.—It is better to have some information. As one goes on working, one finds out what statistics are correct and what are inaccurate.

Q.—Besides consumption and value of property, what other tests would you apply ? Supposing you were asked to analyse and give results of your tests ?

A.—I would desire to take the total value of consumption and the value of property. The value in a village may represent very much less or very much more, so you have to make allowance for that by index figures ; I would divide consumption in separate parts and compare not only value but also quantity. In America, they have divided food into five classes, cereals, animal food, milk, meat and fat. I have a feeling that the village people have less food than they formerly had.

Q.—So you are highly impressed with the idea of carrying out an economic survey ?

A.—Yes. I think we should know the quantity of each thing and the quality of different kinds of food.

Mr. Kaul.—**Q.**—I should like to know a little more about how you made enquiries. I understand that you took what you call typical cases in one place and you made enquiries about a whole *mohalla* ; in two cases you simply took fairly wealthy and fairly poor persons and then as a whole you took middle stage persons.

A.—I thought that the least number I would have is four.

Q.—But in taking typical cases did you first make a general survey of the whole lot ; otherwise, how could you decide ?

A.—Generally, when I went to a village I used to have somebody whom the people trusted. I tried to take a student who knew the people well.

Q.—You speak on the information given by others ?

A.—When I was enquiring about weavers I went and made direct enquiries.

Q.—Do you think it would be practicably the correct method ?

A.—I think by far the greater number of the people of a certain occupation are at one level of income, and the income would slightly vary according to the skill of the worker.

Q.—Still you found that there was considerable difference between the best and the worst ?

A.—Yes.

Q.—You realise that objection has been taken to the typical method ?

A.—I realise that there are great objections.

Q.—Do you think it is better to take typical cases rather than take smaller areas and then make a complete survey as you did in Ranipur ?

A.—I would certainly make a complete survey.

Q.—That is really more reliable ?

A.—I would certainly be in favour of complete village surveys.

Q.—Then there is the other method of random sampling. What do you think of that ? You find there are 200 houses and you take every 20th house or every 10th house and you probably get the best or the worst, and there is no partiality in that.

A.—I think that might do very well.

Q.—How do you make the survey—by asking the people of the village ?

A.—I generally start by talking to them and making friends and discussing matters which interest them generally. Sometimes I take students with me and get a lot of information through them.

Q.—Do you think they would not suspect you if you were going to make a complete survey ?

A.—I think very likely they would.

Q.—Do you think it would take a longer time than three days ?

A.—I am afraid it would. In my enquiries they had some object in giving information, because I was connected with a Co-operative Bank.

Q.—Did they never object ?

A.—I have gone to some places where no objection was raised at all. Sometimes I talked to them on general affairs and as to how poor India was and sometimes I went as a curious fool asking silly questions.

Q.—What if they gave you wrong information out of fun ?

A.—I generally used to ask them how they managed to live in that way. I always tried to check their statements with one another and if I found that their answers were fairly accurate I would not cross question them. If there were some discrepancies I questioned them and they generally explained them.

Q.—What you mean is that you had considerable difficulty in ascertaining the facts ?

A.—I do not say that, but by experience I have come to know how to ask questions. I do not think that it is difficult. Still I think that it requires some training. For instance, this year we have in the intermediate class what is called practical work ; and students have to give budgets and particulars of consumption and cost of production ; on the whole I think they have been obtaining very accurate information.

Q.—Have you had a class to ascertain the income and wealth ?

A.—You can never find out what amount of money and jewellery the people have.

Q.—Supposing you were not able to make an intensive survey ?

A.—I would send enumerators round from house to house asking each man what his income was, getting his reply and checking it.

Q.—Do you think that at a general enquiry we could arrive at a fairly reliable estimate of income ?

A.—I would not ask questions about their total income. They would not give that information. If you ask them about a particular item they might give information.

Q.—Then the man who is making the enquiry will have to know all the sources of income each man has. Do you think you can do that without an intensive enquiry ?

A.—My students ask questions about all these things and they secure a lot of information.

Q.—What is the complete list of items which you wish to have collected in the agricultural census of production ? We have got returns of crops.

A.—In returns of crops they only give food grains.

Q.—Let us consider other things. As regards food crops and other crops, is it your idea that in the census of production of agriculture we should work out the yield and make calculations from the area ; or are you thinking of taking stock of what each man produces ?

A.—We must find out the proportion of each crop which is consumed by each individual and the proportion of produce which is exported and then we can check these figures with the trade statistics.

Q.—In regard to question No. 3, you suggest that some improvement may be made ?

A.—Yes, I do.

Q.—Can you give us some idea ?

A.—Sir Edward Gait recommends the taking of the United Provinces with the whole of the Punjab. I think it is far too big an area.

Q.—Sir Edward Gait's classification was based on rainfall?

A.—I feel it is not as good as Mr. Datta's classification.

Q.—You consider Mr. Datta's classification better. Could you give some suggestion in writing for improving that classification? When you talk about each village here, what is your idea, should each village maintain its production statistics as is done in America?

A.—I do not think that in America the Federal Government or the Township Government do that; it is usually the private association of farmers and statesmen who do it.

Q.—Do you think that under the present conditions we can expect villagers to do that kind of work themselves?

A.—It requires some more education. At present I think that such associations can be formed. I think there are men who could do this. In the case of landlords they might have special interests.

Q.—I want your pronounced opinion on the question as to whether there are any landlords who will be prepared to take this work up?

A.—I think that landlords who have been our students would be quite willing to do this.

Q.—Do you not think that your students change when they go out and become landlords?

A.—I do not think they change quite so much.

Q.—Would you like some sort of agencies in districts who would work out these things for each village until the villagers realise their value and they themselves begin to do it? Do you consider it more practicable?

A.—I think where there are associations, if you had tenant associations, they would be interested. I believe that on the whole it will be much more valuable.

Q.—My point is that I want to see whether there will be any practical difficulty or not. Supposing you have tenant associations. Do you not think that landlords would put up opposition?

A.—If the tenants are required to publish figures by law then the landlords cannot put in any objection.

Q.—Would it be a practicable measure? If you went and asked a person what his outturn was he may say—"I do not know—find it out yourself".

A.—Of course, there will be some difficulty but the same difficulty will arise if you have some officials who simply make an estimate and publish a chart of that estimate. But if some society prepares an estimate and puts it up for them to see, in a few years' time they would become interested.

Q.—Have you had anything to do with the editing of any economic journal?

A.—Just recently I have begun taking an interest in that work.

Prof. Burnett-Hurst.—Q.—You mentioned just now that you would advise the publication of statistics in different villages so that they could be checked by the villagers. What proportion of the villagers would be able to read those figures with a view to checking them ?

A.—My idea is to have a chart which could be explained to the villagers.

Q.—Who would explain it ?

A.—The chart would be put up in a public place where they occasionally assemble. Where there was an educated zemindar, he could explain to the tenants and I think they would very soon be able to grasp and understand figures.

Q.—You would leave it to him to explain. Do you think his explanations will always be unbiased ?

A.—No, not by any means.

Chairman.—Q.—Do you think that any comparison can be made between sweepers in America and sweepers in India ?

A.—I am afraid not. In villages we do not have sweepers at all.

Prof. Burnett-Hurst.—Q.—Suppose you desire to make international comparison ?

A.—The comparison would be between cities only.

Q.—Do you think such comparisons would be reliable ?

A.—I think it is possible to make comparison between the real income in the different countries.

Q.—Are not standards of life and conditions of living in countries different ?

A.—That is what we have to compare.

Q.—As regards the intensive survey of Pittsburg, was that survey carried out by official or by non-official agency ?

A.—By non-official agency.

Chairman.—Q.—Do you know of any country where such surveys are carried out by official agency ?

A.—No. I do not know.

Prof. Burnett-Hurst.—Q.—Are these surveys carried out by trained investigators ?

A.—The Economic Bureaux in America have Government representatives.

Q.—But it is not a purely official body ?

A.—No.

Chairman.—Q.—Is there some literature on the working of these bureaux ?

A.—I think there is some in the Allahabad University. An article has also been written by Mr. Warburton in the Indian Journal of Economics.

Prof. Burnett-Hurst.—Q.—You say that intensive studies in America are carried out by non-official agency.

A.—Yes. As far as I know.

Q.—With regard to your suggestion for selecting sample and typical families in representative villages; how would you select your typical families?

A.—By asking the people of the village.

Q.—Would you carry out scientific enquiries and leave it to untrained persons to make a selection of what is typical?

A.—I think they know fairly well.

Q.—Do you not think that this method of selection of typical families will be open to objection? If the results are good, one party will say that the families were especially selected while the other party would approve of the selection. Is it not open to that objection?

A.—I think it is no doubt open to objection, but it can be checked by making occasional intensive surveys.

Q.—Would you approve of intensive studies being carried out by trained men in different parts of the country rather than big surveys being undertaken by a large and untrained staff; the selection of typical houses and families being carried out in the manner which you suggest?

A.—I feel the danger is always the same if you make intensive studies. The trained men may themselves be biased.

Q.—Biased in what way?

A.—Well, they might have political bias.

Q.—Assuming they were free from bias and not appointed by officials, would you approve of it in that case?

A.—It all depends—if trained men could be got who are free from bias.

Q.—Would you suggest the formation of a body such as the Rockefeller Trust for financing a non-official enquiry?

A.—That I think would be better, but I do not think there are wealthy men in India who would contribute to such a scheme.

Q.—There are a number of public spirited men in India, if they could be persuaded to contribute to such a cause?

A.—It would be far better.

Q.—You know the size of the United Provinces. It is of the same size and population as the British Isles. There are altogether about 110,000 villages and about ten million occupied houses. Any enquiry on the lines that you suggest, if it is going to be of value would have to be very extensive.

A.—I do not think it would be necessary to take more than ten villages in each district for enquiry.

Q.—What about the selection of those villages? To whom would you leave the selection?

A.—I would take Settlement Reports and consider the different kinds of lands in each district. I would try to take villages near railway stations and also those further off from railways, near markets and further from markets.

Q.—Would you not adopt the system of random sampling?

A.—No. I think it would be better to select them merely according to the distance from the railway station and according to economic needs.

Q.—Would you visit each family and each household in a village?

A.—If that could be done, it would be far better.

Chairman.—Q.—If you take only ten villages in a district would it not be necessary to do that?

A.—I do not think it will be absolutely necessary but of course one can have a more accurate idea by intensive study.

Prof. Burnett-Hurst.—Q.—Roughly speaking there are 100 households in a village and you have ten villages. That means 1,000 households. How long would an intensive enquiry into the economic conditions of each household take, if you select 1,000 houses in a district?

A.—I think, after one had some experience and obtained the people's confidence quickly (two or three days might be spent in getting their confidence), one could do an intensive study of five houses a day.

Q.—In twenty days you would do a village?

A.—Yes.

Chairman.—Q.—With one enumerator?

A.—Yes. I think so.

Prof. Burnett-Hurst.—Q.—Would you collect information at one visit?

A.—I would ask them questions about the whole of the year.

Q.—Do you think they can remember their income for the previous year?

A.—They can remember fairly well about crops.

Q.—Would they, for instance, tell you the amount of milk that was produced by their goats and which they consumed themselves?

A.—Yes, I think so. They can tell for how many months the goats give milk.

Q.—You would leave it to the enumerator to make the estimate?

A.—The enumerator will not have to make estimates. People themselves know how much milk a cow or goat gives.

Q.—In the same way, would they be able to give information about the number of eggs laid by their hens?

A.—Yes, they can do that. They cannot give information as to how many eggs per month, but if you ask them how many eggs their hens laid in a particular month they will be able to give the number. By getting this information you can get the required figures.

Q.—Would it not take some time to collect information in that way ?

A.—Not too much.

Q.—What agency would you employ for ascertaining this information ?

A.—I think it might be possible to use students.

Q.—Do you think the people would give information accurately to students ?

A.—I think it will all depend upon the training they have received.

Q.—It requires considerable tact. You could not let students loose in villages.

A.—You should have the pick of the men and take them yourselves to villages and see how they do their work there.

Q.—In other words you would have to employ a well-trained staff ?

A.—It would not be an easy task to raise a staff of that nature I think the majority of our students would learn to do it.

Q.—Would it not take time to train them ?

A.—I think after three or four visits they would be able to do it satisfactorily.

Q.—My experience of employment of students in Bombay was that they were not very successful. Mill-hands were rather frightened, but when an educated man of their own class was employed, they gave fairly correct information.

A.—That would be much better. In Ranipur I employed a cloth merchant who had travelled throughout India. He went round with me and helped me a great deal in asking questions, and that was quite good to gain the people's confidence. In Etah, I used village preachers who had the people's confidence. I always tried to get someone who had the people's confidence.

Q.—You mentioned that in your opinion particulars regarding consumption are most important when collecting information about the economic condition of the people ?

A.—Simply for the purpose of comparison and knowing the real economic progress, but, of course, information as regards production and trade is more important for business purposes.

Chairman.—Q.—In consumption, the amount of money spent on food in the budget of a family shows to some extent the economic condition of the family ?

A.—We find that our labourers in cities have to spend an enormous proportion of their earnings on food.

Q.—Consumption in that way gives some idea ?

A.—I think it should be collected as a check on production.

Prof. Burnett-Hurst.—Q.—What you require is information about family budgets ?

A.—I think so.

Q.—Do you think we can get reliable information ?

A.—Yes, I think so.

Q.—Would you take a month or a year as the period for recording family budgets ?

A.—They generally take a month.

Q.—Does not consumption vary at different times of the year ?

A.—Yes, for example, the chamars in Benares eat only one meal every other day for a month or two before the harvest. I asked them why, and they said that as they had borrowed, all their earnings during the harvest time would be taken away by the money lenders. I found that weavers are worst off during the rains.

Q.—So it is essential to secure information, not for a particular month, but for the greater part of the year ?

A.—They know in what part of the year they are worst off.

Q.—Do you think you could give particulars of your family budget accurately for the last year ?

A.—I think my wife could.

Q.—You would be unable to do that on the spur of the moment ?

A.—I think in villages women can tell more about consumption than men can. I asked the women how much they cooked, how many "chapatis" they made and how many seers of *atta* they consumed.

Q.—One important question to which I should like to draw your attention is with regard to different classes of people. Do you agree that, if an enquiry is conducted, it should be into the condition of different classes of people ? For instance, clerks, trades people, as well as skilled and unskilled labourers in towns, and cultivators and rent payers in villages ?

A.—I think it is important to know whether any particular class is going forward or backward. I think it is also necessary to know whether any particular area is going forward or backward.

Q.—Would it not be of great value to study different classes ?

A.—I think it would be of great value if figures can be compiled that way also.

Q.—Do you think information about family expenditure and wealth of the lower classes can be collected ?

A.—I think one could collect this.

Q.—But it would be rather difficult to get this information ?

A.—Uneducated people and people who are better off would be able to give it.

Q.—The essential difference in carrying out village surveys in India and other countries is that here you have an uneducated population and you have to employ a staff of paid enumerators, and for that reason your enquiry becomes more costly than in the case of villages in foreign countries, where you have educated people to supply information.

A.—I think that in the majority of the countries the peasant people are still uneducated.

Q.—Even in America?

A.—No, not in America but in many countries in Europe. Even in America we have a great many foreigners quite unable to read or write, and a great many of them are just as ignorant as the people of India.

Q.—The present data is very unreliable?

A.—Many people must have been uneducated when these enquiries were undertaken and the people were quite ignorant, too.

Q.—An important question is that of ascertaining income per head of population. In ascertaining this, would you take into consideration the question of services or not, *i.e.*, the income of persons engaged in professions such as your own, lawyers, etc.? Would you take into account their income?

A.—I should certainly include the income of persons following professions.

Q.—Is that not the practice of most statisticians and economists?

A.—Yes, I think it is.

Chairman.—Q.—Supposing the production in a village is worth 300 dollars and the income of the people is 500 dollars. If you total up the whole income, it would be more than the gross produce of the village?

A.—Certainly, my income includes the amount that I pay to my servants. So certainly it would be greater than the gross produce. You would have to add the value of the services.

Mr. Kaul.—Q.—Would you take all services or would you exclude certain services? Would you not be counting some twice over?

A.—I do not know what you mean by taking them twice over.

Q.—We talk of servants' income as their income, and we also count as part of your income the money which has to go to them as their means. So that will be counted twice over?

A.—No, because they have rendered services.

Q.—There are certain other services which do not add materially but are subsidiary to production, and that production would not be so efficient without services.

A.—Really, they would add to production.

Q.—That is, your income is composed of what you pay them, and something else ?

A.—I mean to say that the work of my servants adds to my productive value. Without the services which the servant renders I would have to spend my whole time.

Q.—You have added something to the country. Without their services you would not be efficient. Is not the production of domestic servants part of your production ?

A.—I do not think so. You might say that part of the wages of my motor driver is simply an expensive production but a large part of the enjoyment that I receive is a part of my income.

Q.—You mean that all services should be valued without exception ?

A.—Yes, I think so.

Chairman.—Q.—What would it cost to collect this sort of information in a village, say, of 100 houses and what would be the cost per 1,000 of population ? If you could give us some data for this it would be of value to us.

A.—I cannot say.

Q.—What practical use have you made of your past investigations and how have they affected the population or the country ?

A.—I confess that if it had been published it would have been of some use.

Q.—Could you not complete an investigation in one village and could you not induce the villagers to maintain accounts from year to year if Government helped them ? I think that is done in America without Government help.

A.—I think it could be done.

Q.—Perhaps you might have an advisory committee to help in this work. Is that possible ?

A.—I think that it would be possible if someone is found to take an interest.

Mr. SAM HIGGINBOTTOM, Superintendent, Agricultural Institute, Naini.

Oral evidence, the 6th April, 1925.

*Chairman.—Q.—*May I ask in what aspects of the economic question particularly you have taken interest ?

*A.—*Chiefly in the rural and strictly agricultural aspects.

*Q.—*Agricultural aspects in the district, in the province as a whole, or in the whole of India ; or have you investigated local questions ?

*A.—*We have a farm where we are actually growing things and doing things ourselves. In addition to that, we try to keep the provincial literature up-to-date, and the reports are valuable.

*Q.—*Have you ever made an estimate of the agricultural production of a district or a province ?

*A.—*Not of recent years. When I was a teacher of economics I made a number of them in this province. Those would be entirely unreliable now-a-days, as they were done fifteen or sixteen years ago.

*Q.—*As regards agricultural production, you have seen all the statistics published by the Government ? What additional information would you require to get a correct estimate of the agricultural production of the province ?

*A.—*In general, I have taken Government statistics and compared them with personal observations.

*Q.—*That is, crop reports ?

*A.—*Yes. I always travel by rail by day because I wish to see the country at different times. My observation is that the crop yields of India are about the lowest of any civilised country I know of. Now, regarding the statistics published by the Government, they cover the so-called staple crops, but the minor crops, as they are frequently called, such as *arhar*, are not taken into account. If you wish to get production as a whole, the staple crop is not a true indication. For instance, there is a mixture of the various seeds in one crop. *Jowar* and *arhar* are sown together. If you get a very good yield of *jowar*, *arhar* is very poor, and if you get a fairly poor yield of *jowar* your *arhar* is apt to be good. Then, so many of these so called minor crops provide a very large proportion of the food of the poor people. For instance, in Rajputana, Jodhpur and Bikanir, *bajra* which is called a minor crop in this province, is the only crop there and nothing else is sown.

*Mr. Kaul.—Q.—*It is the staple crop there ?

*A.—*Yes, you will find miles and miles and district after district sown with *bajra*.

*Q.—*Do they publish returns of *bajra*.

*A.—*Yes.

*Chairman.—Q.—*Would you ask that the minor crops should be taken into account ?

A.—Yes, specially the mixtures. In this province there is a mixture of wheat and gram, gram and barley and mustard and linseed, but the percentage of these will vary. With a little trouble taken in going over the countryside, a trained agriculturist gets a fairly good idea.

Q.—For preparing an estimate for the agricultural production in the province, what additional information should be collected and how should it be collected, in your opinion, in money value ?

A.—In order to get the total agricultural production of the province, I think a trained staff is needed. I am in favour of what has become known in America as the county adviser and this is a combination of official and private enterprise. An agricultural college graduate is put in charge of a district, and half his salary is guaranteed by the Federal Government, which corresponds to the Imperial Government, and the other half the farmer community pays. They assess themselves in their local rates and collect a sufficient amount to meet his salary. He is given an office staff and he is usually available for any farmer in the township. This county adviser is able to help the farmer with his advice and to secure for him any information if he can do so.

Q.—What is it called ?

A.—It is called the 'Farm Bureau for Washington'. When the war came on, President Wilson, in order to increase the agricultural production, immediately gave orders for the appointment of 3,000 of these agricultural graduates as county advisers. Some women also were appointed during the war. It was not restricted to men only.

Mr. Kaul.—Q.—For increasing production ?

A.—That was for increasing production. Also, production can frequently be increased by finding out what crop would best thrive in a particular area and concentrating it in that area. In California, for instance, if you go into one valley you will find oranges grown while in another part nothing but cherries. The county officer first organises pretty well to produce the same thing. Then, he tries to connect the farmer with the market and helps the buyer to buy train loads or cart loads of a particular commodity if he goes into a certain district. He can get in one district all that he requires. Thus, everything is well organised there. I feel that in India there is room for something like this, and not only room but one of the soundest investments that could be made. I know of nothing that would more quickly improve the value of production in India.

Another way in which the county agent is of great value is in the control of farm prices. In India some of this work is being done on investigation by a graduate of the Poona Agricultural College. He has discovered that one weed destroys 25 to 30 per cent. of the crop in the area in which the weed is found. Now, any investigation that can get rid of this weed is of tremendous importance. You can afford to pay a good deal for that. The Agricultural Department is supposed to do this, but in India they kill that department every chance they get. You have got now an Agricultural Department which is doing the best work and which is known the world over. It is a question of training and experience.

Q.—As regards the agricultural production, in order to get a correct estimate from year to year, what additional information would you collect ?

A.—These things I have already said. Your practical difficulty just now is this ; The *patwari*, very frequently through ignorance, is unreliable and is not on the line. He is not trained. Then, my own observation is that anybody connected with a village almost invariably gives something less than the correct outturn. I have spoken to a number of villagers and they say that this enquiry is conducted in order to find out how to squeeze more taxation and, naturally, they are not going to give correct information. A right organisation in the village throughout the countryside should prove to the villagers that the investigator is not their enemy but their friend. It is a change of attitude, from one of suspicion to one of co-operation, that is needed and therefore I believe that not enough is made out of the co-operative movement in India yet. You have a co-operative society to-day and if I were beginning investigation, I would invariably begin with the co-operative society. The society is well organised and is functioning properly. There you have a group of men who trust each other, who have unlimited reliability on each other and who are interested in each other, and somebody is associated with each of them who keeps accounts for them. Where you have got a really good co-operative society, there you have done a certain piece of educational work which is of very great value in changing the attitude of the people.

Q.—What is the total agricultural area of this province compared with its population ?

A.—(Addressing Mr. Burnett-Hurst) You quoted the area of this province as equal to that of the British Isles. I compare it more frequently with the United States.

Professor Burnett-Hurst.—(To Chairman) The area is 112,000 sq. miles.

Chairman.—*Q.*—What, in your opinion, are the proper tests to gauge the economic condition of the people of this country ?

A.—My own experience is that it is very difficult to gauge it accurately.

Q.—You cannot get it accurately in any country ?

A.—Not even approximately here. They will try to make out that they are much worse off than they are. They are afraid that, if they stated that they are well-off, they stand to lose. But, as I go into a village, I note the physical condition, especially of the children. Older people may be suffering from disease and something like that. The first indication I look for is the condition of the children, that is, whether they are fairly fat and plump. There is another thing : the amount of jewellery on the children and the amount and quality of clothing. But jewellery is a better indication, not only the quantity, but what it is made of. Then there is a third test ; the amount of permanent improvements in the village. That is a good indication because ' pucca ' things mean luxury.

Q.—In order to get an idea of the economic condition of a taluk, what statistics would you collect and how would you go about collecting that information ?

A.—Climate and soil go together. I would divide the province as far as possible according to those conditions. Then, I would select random villages from them. Then again, I would try to select a village with a school and get the help of the schoolmaster as well as the *patuani*. If there is any educated person in the village, his help may be obtained. Before collecting information the question is how to get their confidence. Of course, as I have already said, where there is a co-operative society, that would be a most valuable association through which you could collect information.

Q.—So, these are the existing agencies which you would utilise.

A.—They are not enough. These men would need training and the work carried out by them would require checking. The more detailed the survey, the better. The limit of that will depend largely on a number of factors, such as, cost, length of time, etc.

Q.—What do you think it would cost per 1,000 families ?

A.—I regret that I have not studied the question from that point of view. Your question has set me athinking. I will try and work it out.

Q.—Having regard to the economic condition of the people, is it not necessary to have a stock-taking census to make a start ?

A.—It may be. If you did it in two years, you would be lucky.

Professor Burnett-Hurst.—Q.—How long do you think it would take ?

A.—I would make an intensive enquiry which will naturally take some time. Before publishing the report as regards a village, I would have to go three or four times in the same year at different seasons. Then, I would have to note the approximation of a normal year, because if there is a famine or failure of crops or frost that would have to be taken into consideration. I believe this is of great importance to the progress and development of India and to the improvement of the people. I think the Census Bureau ought to be organized on a permanent basis. Its office staff should be trained and they should take a census every 10 years and write a report. In spite of the defects we see in them, they are getting more and more valuable, and in the intervening years we should continue the survey. I don't believe that an organisation of that kind would be a heavy financial burden. I think it would more than pay for itself in a short time.

Chairman.—Q.—Supposing we had half a dozen gentlemen who knew all these things and they met together to devise a scheme for an economic survey of this province, would they not be able to put forward a practical scheme ?

A.—I think so. It is of vital importance. I go into villages and I have much to do with the cooly people and see them very frequently, and yet I am totally in the dark. Going into the different parts of the province as a farmer, I feel that I have an advantage in getting their confidence because I can talk about things that they know of. Even then I feel that it is very difficult indeed, but it is of the utmost importance.

Mr. Kaul.—*Q.*—Will you please read question 87 of the Questionnaire? Have you any criticisms to offer?

A.—I am sorry that I have not gone into it. I have not studied it sufficiently well.

Q.—When talking about agricultural production you said that minor crops are not reported and therefore the information is not complete. I presume you are aware that the *patwari's* record contains the extent of the mixed crops. In some places they make a rough estimate of each of the mixed crops. Would that satisfy you?

A.—Where it was a mixed crop, I would like him to say that it was a mixed crop.

Q.—He says that *jowar* is so much and *bajra* is so much.

A.—That might be in the *patwari's* record, but it does not come out like other crops, such as sugarcane, cotton and wheat. Moreover, the season may be unfavourable for one crop and beneficial to the other. Now, we know that prices of food-grains are frequently the determining factors, so that while we will have a bad year for wheat, some other crop is very good. If a merchant or shipper has only information regarding these and he knows that the wheat crop is bad, there may be other food-grains which he will substitute for wheat.

Q.—He does not want to know the mixed crop?

A.—No, but if he knows that wheat is very bad and barley is very good then he may ship barley.

Q.—Information is separately given as regards wheat and barley?

A.—Only the total amount of food-grains of all crops and not of individual crops. I realize it is a counsel of perfection to get accuracy but you get an approximation which may be of very great use. There is another thing, namely, the fixing of prices. I think it always should be computed at its price in the village.

Q.—How would you arrive at the price in the village?

A.—Take the price at the railhead or at the nearest market and deduct from it the cost of packing and the cost of transport and that would give you the price at the village.

Q.—That is, you would take the price at the place of production?

A.—If you take the cost at railhead or the nearest market and deduct from it the cost of production and the cost of transporting you will find very frequently that a crop is not worth growing owing to the difficulties and cost of transport. I am willing to do anything to improve transport facilities.

Q.—You would value the transport services separately in taking the income of the country?

A.—In America, the Year Book gives the amount of a crop and its value. In India, we do not do that.

Q.—Then the difficulty comes as to how you are going to assign a value to the crop produced in India. Are you going to take the market prices or the world market prices for that particular commodity for that year?

A.—If you did that, it will be altogether too high. I think you must take the value at the nearest market *minus* cost of transport.

Q.—Talking about the *patwari*, you said that he was not reliable because he was not trained.

A.—I did not bring any accusation against him. What I said was that he has not had a sufficient amount of agricultural training. He would be worth much more if he had had that training.

Q.—In what respect ?

A.—He has had no training in the improvement of crops.

Q.—That is outside our scope. We are concerned with the measuring of production properly, but not with improving it.

A.—My experience is somewhat limited. As I already said, I think sometimes the *patwari's* record is inaccurate due more to ignorance than a desire to underestimate.

Q.—Do you know how the outturns are estimated ? Who does it ?

A.—I think it is the *patwari* who goes to every field.

Q.—That is another thing. As regards the average yield certain crop experiments are performed.

A.—I think they are conducted by the Director of Agriculture and he has got officers under him who check the various operations.

Q.—Do you think that the results are not reliable ?

A.—I do not think enough of them are conducted. The number has to be multiplied tenfold.

Q.—Over the *patwari*, there is an inspector who goes to the fields and calculates the outturn at a crop experiment. Above him is the *tahsildar* who personally checks it. There is again the special assistant collector who goes down and satisfies himself. If that was the system adopted, would you consider the results to be fairly reliable for our purpose ?

A.—I would much rather have it done by a separate agency.

Q.—Do you think that if he were responsible to the people he would not under-estimate ?

A.—Not if they were properly educated.

Chairman.—Q.—Have you made any estimate of the value of an irrigated crop and an unirrigated crop for any given area ?

A.—Not recently, but a few years ago I did.

Q.—Have you any figures ?

A.—I could not recall those figures.

Q.—What would be the gross produce of unirrigated crops in these parts ?

A.—In our immediate vicinity, I should say that *berra* has not averaged more than six or seven maunds per acre. That would be worth to-day about Rs. 25. The *bhusa* would pay for the cost of

threshing so that out of the Rs. 25 one has got to pay the man's labour, the rent of the land and other expenditure.

Q.—You suggested that it might be possible to employ a trained staff on the lines of county advisers in America.

A.—First of all, you have to create them. They do not exist and Government, like so many other people, believe in a fortuitous retrenchment, and are closing down agricultural colleges. Any trained man is an asset to the country. This is not a thing which could be immediately put into effect, but they could be trained in a very few years.

Professor Burnett-Hurst.—*Q.*—It is an ideal to be set before us.

A.—Agricultural education is one of the newest forms of education in the world. Forty years ago there were hardly any agricultural colleges. Now, of course, more money is spent in some provinces. There are certain States in America with the area and size of the United Provinces, with about 1-15th of the population, spending three or four times the whole of the agricultural budget, both Imperial and Provincial, and they spend that because they expect to be repaid. The difficulty here is that neither Government nor land-lords in general regard agriculture as an investment. When you put something in, you have got to wait before you can get it. Now, the agriculturist in India is living from hand to mouth. There is no forward-looking programme. I will have to modify that in the case of cotton and sugarcane. They have bureaux and are really going at it in a scientific way, but generally they are not getting Government money for it. The trades are interested in it, they are providing the money and they are making remarkable progress.

Q.—Is it not a fact that in America many of the statistical returns relating to agricultural produce are furnished by the farmers themselves on forms supplied by the Government and that considerably cheapens the cost of reporting statistics?

A.—Yes.

Q.—But is that possible in India?

A.—If we could give rural education in India, it would be possible. All our rural education is the education defined for the city boy. We should take the village schools these forms which should be explained to the children and then we will have rural education suited to a rural Indian. In less than a generation, we will have everything we want. Under existing conditions it is impossible. You will have to set up an agency which will be costly.

Q.—Do you happen to know the system they employ in America? Their statistics are usually accurate and they do it very well.

A.—I think it would be impossible for the Government or for the people themselves to do it without training.

Q.—The ideal is to have graduates of agriculture in districts not only for the purpose of crop reporting but also for the purpose of assisting agriculturists in bringing about improvements.

A.—Yes. They are valuable not only commercially but also educationally and in the villages they would create an interest in rural

education which you do not have now. If these things which are vitally connected with the village population are taught in the village schools, you will create an interest which will last to the end of their life.

Q.—Meanwhile, what would you suggest as a suitable method of improving the reporting of agricultural production ?

A.—I am afraid I have no suggestion which would give immediate reliable results except at a cost which is absolutely prohibitive. The kind of men trained to do this job you will need in such numbers that you will not be able to pay for all of them.

Chairmen.—*Q.*—Would you not get any voluntary help from the people ?

A.—Certainly you would get it, but will that help be sufficiently well-trained ? Volunteers are all right but the question is that of trained help. If you get the system of rural education changed you would have your voluntary help all throughout the country.

Professor Burnett-Hurst.—*Q.*—It has been suggested by a witness that if intensive studies were made in a good few typical villages, you could collect information from individual households and then you would be able to ascertain the value of agricultural production with regard to that village for a period of time. Do you agree that it is possible with any degree of accuracy ?

A.—My experience is that one visit in a year to a village is not enough. For any information that I want from villages, I have to go four or five times, when the crop is being sown, when it is growing, when it is being harvested and when it is being bagged. I cannot content myself with one visit.

Q.—Would you be able to get reliable data if you went to a household ?

A.—If you have their confidence, you will. I find they are exceedingly suspicious. The local people know me well, but if I went to a district where I am not known, the information obtained would be of no value.

Q.—Do you think the local official, village *patwari*, could get that information accurately ?

A.—I think he could get it if he wanted to.

Q.—In view of what you said already, would not the people consider that it would lead to increased taxation and would they try to under-estimate in view of it ?

A.—I do not know whether they would do that or not. The *patwari's* fear is that he will get into trouble with his superior officer and so to be on the safe side he under-estimates.

Mr. Kaul.—*Q.*—If he under-estimates, he might get into trouble with the officers. If he over-estimates, he might get into trouble with the people.

A.—But I can **only** talk of my own experience.

Professor Burnett-Hurst.—*Q.*—Have any intensive enquiries of the nature of those suggested for India been undertaken in America by official agency ?

A.—Not to my knowledge.

Q.—Do you think the local agency, the *patwari* or non-official, would be able to get definite information of milk production during the year ?

A.—My experience is that it is never measured.

Q.—How much of it would be pure milk and how much mixed with water for sale ?

A.—That I do not know. It is very difficult to ascertain the amount of milk produced for sale, but in a village they get it for their own use and do not sell it. My observation is they invariably over-estimate the amount of milk their own cows give.

Chairman.—*Q.*—They are proud of that ?

A.—They use small measures.

Professor Burnett-Hurst.—*Q.*—Is it not a fact that they do this when they wish to sell cows ?

A.—No, they always over-estimate. It is very curious. Where there has been no thought of selling the cows, it has almost invariably been over-estimated.

Q.—With your acquaintance of Indian villages do you think it would be possible to get information about such things as the manufacture of cow-dung cakes ?

A.—In the neighbourhood of cities that is fairly easy because all the cattle stand in the village. You know roughly how much dung they produce. That is much easier than the milk estimate.

Q.—In villages ?

A.—Where they are made for sale.

Q.—Do you think there is considerable manufacture of cow-dung cakes in the United Provinces ? I think it is one of the most important industries.

A.—It is a sort of negative industry.

Q.—At the same time a large number of persons are engaged in that industry and that production is one of considerable value to them.

A.—They sell for 4 annas what is worth a rupee. It is reducing the wealth of the country.

Q.—Could you give a rough idea of the approximate figures of the production of cow-dung cakes ?

A.—A she-buffalo weighing about 1,500 lbs. and giving 10 seers of milk will roughly produce about 20 seers of dung. The person who labours to make these into cakes gets for a month in Allahabad from Rs. 1-12-0 to Rs. 2. Cow-dung cakes used to be sold about 10 pice per hundred ; I conducted some investigations. Taking

only the chemical elements in the cow-dung cake it would be easily worth Rs. 15 per ton. and they get nothing like that for it. If that quantity were put into fields as manure, I should expect a return much greater than Rs. 15 per ton. I should expect a return of 100 per cent. When they sell, I do not think they get 5 per cent. for it.

Q.—Do most of the farms in America keep milk accounts ?

A.—No, only the progressive farms keep accounts.

Q.—Do not non-official associations assist the Government in giving information about crops and agricultural production ?

A.—Yes.

Q.—Those agencies are entirely absent in this country ?

A.—I do not know of any agency which helps in this way here.

Q.—It makes the collection of information more difficult in India than in any other country ?

A.—Taking America, a farmer there has been educated to understand that these statistics and figures have a money value for him later on. Your Indian cultivator with his experience thinks that whatever information he gives is used against him. So he cannot be blamed at all. The educated men in India and the Government have to prove to the country that these facts and figures are for their benefit and in their interests.

Q.—In England and in America is not the information given by a farmer used against him in the matter of taxation ?

A.—Well, in that sense, yes. I take it that the average profit per acre in this Province is not more than Rs. 10. Now, the Government tax on that is mighty little. If by a true system of education you make this man increase his profit to Rs. 20, the Government also can take a little more and that is the thing which he has not yet been taught to see. That is, if the value of the crop is increased by a certain percentage, he can afford to pay more to Government. After all, the farmer is concerned with what remains with him and if we can assure the farmer of India of a fair share of any increase, I do not think he will grudge the Government a share also. If he gets nothing, then do not blame him.

Chairman.—*Q.*—Do you think that this sort of training should be given through a school, or by means of special propaganda ?

A.—Any method. Use everything, propaganda, schools and colleges. For an agricultural country like India, there is less spent on agricultural education and less on agricultural departments than in any other country on earth. Frequently that portion of the revenue which is spent on collecting land-revenue is counted as agricultural expenditure.

Professor Burnett-Hurst.—*Q.*—You will remember that I raised the question whether services should be taken into account in framing estimates of national income. I should like to have your opinion.

A.—It is this way : if I pay part of my income to my servant, you do not add that to my income. You say it is counted twice over. It is not counted twice over for me. It is only counted once for me, so that

my salary is mine whether I spend it on services or on whatever I spend it. If I pay my *mali* so much that is his income for his services.

Chairman.—*Q.*—If you take production only, the aggregate agricultural income is much greater than the actual produce ?

A.—I look at it from a different angle. I think the more we consume the more is produced.

Q.—If you spend Rs. 10, you may get Rs. 100 ?

A.—Look at our telegraph service. Why should not the telegraph be busy all night as they are in America. One of the best services is the Meteorological Department. In America they put up flags or signals to show the different weather conditions. In India they never do that. The Meteorological Department is of the utmost value to the country. Certain very valuable industries in America could not be carried out without the help of the meteorological advisers. On the other hand, look at the meagre reports we get in India. You cannot tell the temperature of a place accurately. I see that a certain temperature is given for Allahabad which I do not find is the case. I ask them and they say the temperature was taken ten feet above the ground. Unfortunately, this information is of no use to me as my crop cannot grow ten feet above the ground. They say that Allahabad never gets frost, but my *arhar* and *channa* did suffer from that heavily, so that what is needed is that the Government and the people should learn the lesson that to get more we must invest more. That is the only way in which one can raise the standard of living.

Dr. RADHAKAMAL MUKERJEE, M.A., Ph.D. Professor and Head of the Department of Economics and Sociology, The University, Lucknow.

Written Statement.

I.—General.

For an examination of occupations, I think Gait's classification is untenable. Thus in class I, Agriculture, field labourers have to be classed and enumerated distinctly from industrial labourers. In most provinces the distinction in the Census Report between undefined and agricultural labourers is not a hard and fast one and there is a periodical transfer from one group to another, but in a province like Bombay a distinction can and ought to be made. Those who are regularly employed in the village throughout the year have to be distinguished from those who migrate to cities, factories, mines or plantations, when the demand for field work falls. Further, the class of unspecified workmen in the Census Report has to be specified into Professional Labourers and Field Labourers.

Regarding the classification of economic regions, the scheme of division of each province into Natural Regions in the Provincial Census Report ought to be followed as based on greater local knowledge of economic characteristics.

In each of these natural regions intensive agricultural surveys should be undertaken. Sample investigations in typical villages are necessary to correct or corroborate the *patuari's* estimates of area and yield of crops.

Far more important than such estimates are estimates of—

- (a) average costs and profits of cultivation,
- (b) the size of the economic holding,
- (c) the size of land per pair of bullocks and a plough for each natural or economic region.

The estimates of costs and profits of agriculture in settlement operations are often vitiated by the fact that such estimates ignore—

- (a) the cultivator's indebtedness besides the interest which must be paid whether there is a crop failure or not ;
- (b) the depreciation of agricultural capital ; from the profits of cultivation are to be set aside each year that year's share of the original cost of the bullocks and agricultural implements ;
- (c) the necessity of provision for a grain reserve against unfavourable seasons. In some districts in the United Provinces for instance, every 4th year has been an unfavourable year and thus this has to be provided against in a careful management of the farm.

II.—Agricultural Labour and Wages.

I propose the following classification of agricultural workers which I think will apply throughout India :—

1. Professional labourers, such as earth-diggers, coolies, road-menders, dock hands, etc., who are more skilled.
2. Field labourers. These latter may be further classified into—
 - (a) part-time labourers who possess small plots of land of their own which, however, do not suffice for their maintenance,
 - (b) those who are landless and floating,
 - (c) permanent serfs who rarely receive cash and whose conditions vary from absolute to unmitigated slavery,
 - (d) carriers. Throughout India women and children are employed as carriers and their cash wages are the lowest.

Rural wages have to be reckoned in—

- (a) share of crop (*e.g.*, reapers receive one bundle to every ten bundles cut in Bengal) ; this varies according to the harvest (*e.g.*, the Chamar in the Punjab receives 1-13th part of the produce of barley and 1-16th part of wheat) ;
- (b) perquisites such as fried rice, tobacco, oil, tiffin (as in Bengal), blankets and shoes (as in Berar and the Punjab), besides food and dwelling.
- (c) plots of land, *e.g.*, among the *padials* in Madras and the *chakars* or *baramasigas*, *i.e.*, permanent farm hands in Orissa.

Regarding kind wages separate returns should be obtained for different harvests. Usually the share of the harvest allotted to farm hands is standardised by a bundle tied by three lengths of straw. As the straw length increases or decreases with a good or bad harvest there is an automatic adjustment of wages. Wage returns may thus be classified according to soil, climate and crops, *i.e.*, according to Natural Regions.

The value of the supplementals should be given in addition to cash wages, wherever both kind and cash wages are given in part and real wages should be based on the prices of the chief important food grains. On the other hand, where permanent farm hands, such as, the Dublas and Kolis of the Bombay Presidency, the Padials, Izhavas, the Cherumas and the Puleyas of the Madras Presidency, the Holiyas of Mysore, the Chakars in Orissa, the Kumias in Bihar and Chota Nagpur, are bond slaves, who cannot bargain about their wages and in return for a loan received by their forefathers bind themselves to perform menial services, the interest due to the loan should be subtracted from the customary food allowance, etc.

There are more or less definite hours of work for the field-labourers, for instance :—

Bengal	..	6 A.M. to 1-30 P.M. and again 3-30 to 6 P.M.
Madras	..	6 A.M. to 6 P.M. ; or 4-30 A.M. to 6 P.M., with two recesses.
Bombay	..	7 A.M. to 6 P.M.
Central Provinces.		4 to 11 A.M. and again afternoon work for cattle.

Sometimes for night watch the field-labourer gets an extra remuneration. In Bengal he gets remuneration of Re. 1 per mensem for guarding the crops at night. On the other hand, a field-labourer in a Madras district gets a maximum pay of Rs. 45 a year in advance, and has to work in the field or in the house throughout the day and night, if required.

The hours of labour of different classes of labourers should be ascertained and the wage returns classified accordingly.

III.—Indebtedness.

As regards rural indebtedness seed loans should be distinguished from money loans. Different classes of seed loans have been classified in my " Foundations of Economics ".

Statistics of sales and mortgages of land which indicate the risks and losses of cultivation have also to be collected. In one district in the United Provinces nearly 100,000 acres has been sold under court's order in 28 years and about 300,000 by private negotiations and the alienations have occurred chiefly among the small proprietors. Mortgages are also numerous amounting in a particular district to as many as 45,245. The distribution of mortgages among landlords, professional classes, money-lenders and cultivators ought also to be investigated. Again, the average debt per cultivator and the percentage of indebtedness amongst large proprietors, occupancy tenants, small proprietors and tenants-at-will have to be enquired into. In India debt follows credit. Large proprietors are more indebted than small proprietors and tenants with occupancy rights more than tenants-at-will. The poorest class have no debt at all simply because they have no credit.

Lastly careful intensive enquiries in different regions ought to be undertaken with a view to ascertain whether a cultivator in an average-sized holding can repay old debts at prevailing rates of interest, after making provision for the maintenance of an average sized family, of cattle, for land revenue and for the depreciation of agricultural capital and bullocks or whether the interest now being charged cannot be paid at all or if paid whether it is done by trenching on reserves, by avoiding provision for depreciation, by not doing necessary repairs, by reducing expenses of cultivation or in some way by paying out of capital.

IV.—Cost of living.

As the standards of consumption are different in India on account of caste, occupation and social status, we ought to have family budgets of groups graded according to the Indian social hierarchy which is governed by both ethnic as well as economic factors. Thus these form distinct groups with desparate standards of living which are arranged in an ascending order :—

Village scavengers and messengers.

Field labourers.

Peasant proprietors.

Carpenters and Blacksmiths.

Barbers and Washermen.

Shopkeepers.

Middle class (Income Rs. 300).

Higher classes.

V.—Craftsmen.

In connection with artisans and craftsmen, I would suggest tabulation of wages of such artisans and workers :—

Rural.

Leather-workers.

Barbers.

Watchmen.

Potters.

Oral evidence, the 7th April, 1925.

Chairman.—*Q.*—Can you tell us what opportunities you have had of studying the economic condition of the people in India? How many books have you written?

A.—I have already published four or five books; some are being printed. I have travelled all over India and made a special study of village life in different parts.

Q.—Have you travelled abroad?

A.—No.

Q.—All your information is based on local study?

A.—Yes. I have travelled in every part of India and made a study of the villages with special reference to rural and agricultural conditions.

Q.—Have you studied the economic condition of the villages with reference to the publications of countries abroad; the Dominions, for instance?

A.—There are few books on the Dominions, but there are very important books relating to country life in England and America. I have studied all of them well. I was asked by the Patna University to deliver a lecture

on " Rural Economics " which I did only quite recently. I also delivered lectures in the Nagpur University last February on agrarian problems with special reference to the problems of agricultural labour.

Q.—As a result of your rural studies, have you come to any particular conclusions as regards the economic conditions and the remedial measures to be adopted in order to improve those conditions ?

A.—My main conclusion is this : That in different parts of India, due to the increase of population on the one hand, and the faulty land system on the other, the indebtedness of the peasantry has been continuously increasing. Where there is a dense population there is such fragmentation of holdings that they cease to provide a bare minimum of necessaries for the peasants. You will find that even where we have peasant proprietors, as in Madras and the Punjab, we are having a growing class of rent-receivers. The number of people who are living on the land have increased in the Punjab from 62,000 to over a lakh during the last ten years. I have made investigations in the districts of Tanjore and Trichinopoly where I find that the number of cultivating proprietors is steadily decreasing and the number of tenants increasing. In that way, a faulty land system is bringing about an increase of intermediaries who eat up the meagre profits of the agricultural class thus leading to the poverty of the actual tillers of the soil. In Bengal, United Provinces, Bihar and Orissa, where the holding per head of the population comes to less than an acre, we find that indebtedness has been a very serious matter. The settlement reports give estimates of the cost and profits of agriculture, and also the mortgage debt of the peasantry. But the interest on debts which they ignore in estimating net assets at present must be taken into account.

Mr. Kaul.—*Q.*—Mortgages are generally resorted to frequently and the mortgagee becomes the rent receiver ?

A.—Where such a thing happens—and this has been happening generally—there is a steady transfer of holdings. In estimating the cost of profits in agriculture, the interest paid to the mortgagee is omitted. An economist will never do it.

Chairman.—*Q.*—What other defects have you noticed besides fragmentation and indebtedness ?

A.—The growing increase in the class of rent receivers and intermediaries.

Q.—What are the remedies ?

A.—As regards fragmentation of holdings, I think that the problem can be solved not by co-operative organisation as in the Punjab nor by voluntary exchange which has been so successful in Tanjore and Travancore but by checking fragmentation by a modification of the system of inheritance as in Germany and Austria. There, when the head of the family dies, the property is not divided, but goes to a preferred heir. He gives a certain compensation to the other members of the family. This compensation depends upon the rate of profit of the farm. In Austria, the sum is given in instalments extending over a long period. Sometimes, the property is mortgaged.

Q.—That is your remedy for fragmentation. How would you reduce the growing intermediaries ?

A.—This question has been most successfully solved in one part of India, *viz.*, in the Central Provinces, where a radical measure was passed in 1920 to the effect that no land could be sublet. If a cultivator has been holding the land for more than three years, he is declared a proprietor.

Q.—Then as regards debt ?

A.—It embraces the whole problem of economic productivity. We might also pass laws against usury and other laws on the lines of the Punjab Land Alienation Act. I believe that has been doing much good.

Mr. Kaul.—Q.—That has nothing to do with indebtedness ?

A.—It was intended to prevent the transfer of land. One result of indebtedness is the transfer of land from the actual cultivator of the soil to the hands of intermediaries. That has been checked. The effects of indebtedness, when they lead to the transfer of land, can be checked by keeping the land in the hands of the cultivator and preventing it from going to others. That has been one of the objects also of the Tenancy Bill of the Central Provinces which became an Act in 1920. There is a provision in it which prevents transfer of land, except to members of the family within a certain degree of relationship.

Q.—You know what the result of the Land Alienation Act in the Punjab is ? The debt is transferred from the non-agriculturist to the agriculturist, with the result that where a man used to be able to borrow Rs. 200 on land, he is now able to get only Rs. 100.

A.—There are two schools of thought in the Punjab. There is very great diversity of opinion.

Q.—I am not questioning the usefulness of it.

A.—Mr. Darling in his recent book thought that this has been one of the most salutary measures.

Chairman.—Q.—If you want to understand the economic conditions of the people of a village, what tests would you apply and what information would you collect ? I am particularly discussing village matters, because you have a special knowledge of them ?

A.—I would first go into a detailed examination of the profits and losses and risks of agriculture, crop by crop, reckoning also the rotation of crops in the particular district, which I would study. On the basis of those estimates, I could arrive at an idea of the size of an average economic holding. If I found the holding below the size of the average economic holding, I would at once conclude that the family living on it was below the standard of subsistence. I found this method very successful in all my enquiries in the different parts of India. The average economic holding will depend on many factors, such as irrigation, transport and other facilities and so on. For instance, if the economic holding in Bengal was $3\frac{1}{2}$ acres, it would be 3 acres in the Gangetic valley and 10 to 15 acres in the Central Provinces. I recently investigated the matter. Mr. Darling estimates the average holding in the Punjab as 8 to 10 acres. Thus the size of the economic holding will vary in the different provinces. In the Madras Presidency, the average economic holding would be somewhere between 4 to 6 acres in the Cauvery valley—wet lands.

Q.—In the United Provinces, how many acres of wet land per family would roughly form an economic holding ?

A.—We seldom find that a peasant's family possesses only wet lands. They have wet and dry lands. It is difficult to estimate. I think the estimate would be something between three and four acres, irrigated. In the United Provinces, in the case of the vast mass of peasants, the average economic holding is below two acres. There is no finality in this but still, that shows one of the dangers of the present situation. In parts of the eastern portion of the United Provinces, in districts like Gorakhpur, you will find that a plough and a bullock cannot be maintained by the owners of a holding, and that one peasant shares them with another. And, perhaps, if we go on like this, the conditions in India will resemble those in China, where women are compelled to draw ploughs.

Q.—What other information would you collect in that village in order to ascertain the economic condition of the people ?

A.—I would go into the question of indebtedness ; then I would also classify the statistics of sales and mortgages in order to know whether land is being transferred from the cultivators to non-cultivating classes ; whether the size of the holding is below the economic minimum ; and so on. I have found that holdings are being transferred to the non-cultivating classes. That would corroborate my enquiry, if I find that statistics of sales and mortgages go to support this.

Q.—In the Central Legislature, they were discussing the question of income per head. How would you proceed to collect that information in the case of rural areas ?

A.—I would first calculate the profits of agriculture, and work out the total agricultural capital and property of the peasants' family.

Q.—That is the wealth of the people. As regards the income per head of the people, how would you proceed ?

A.—I would ascertain whether they have any supplementary industry and estimate their income from it.

Q.—Assuming that you have the total production of the village, both agricultural and industrial, what further information would you collect ? When there is indebtedness of the population, how would you ascertain the income per head as a unit ?

A.—It is a very difficult task. It has not been successful so far as agricultural countries are concerned.

Q.—Do you find any difficulty in estimating the value of agricultural production ?

A.—Theoretically, we can say that we can arrive at accurate figures.

Q.—You cannot get accurate figures. They are always approximate. In such cases, how would you proceed ?

A.—I would select some sample villages in typical regions, investigate the total agricultural income and the total agricultural production, the indebtedness of the tract and the income from cottage and other industries.

Q.—Have you done that for your various rural industries ?

A.—I have done it in some districts.

Q.—Did you calculate the income per head ?

A.—Yes, I tried the experiment in a very small village.

Q.—What did it come to ?

A.—I calculated the average gross profits per acre to be Rs. 23. It meant that the average tenant required 2.5 acres to get an income of Rs. 60 for the support of the family. In the village investigated I found that the family consisted, on an average, of five souls, so that each one received Rs. 12. In some of the families there were two adults, one boy between 10 and 18 and another child.

Q.—Did you study one family or all the families ?

A.—The different families in the whole village.

Q.—Each family consisted of five members ?

A.—No, there were only four members in that village.

Q.—In which district was that ?

A.—In the Lucknow district. The village is heavily indebted. It was chosen at random. One cannot say whether it was a typical village. It was a village which was very much in debt.

Q.—With what object did you study these statistics ? Was it in order to improve the village ?

A.—My main object was to study present day conditions and to derive lessons for future re-organisation.

Q.—India is now international in commerce, For comparing rural conditions here with other places, have you made any attempt to ascertain the income per head, the property per head, and the production per head ?

A.—I think, from the facts before us, we cannot get accurate figures but we can estimate the economic condition in a rough way and compare India with other countries. In one of my books, " The Rural Economy of India ", I have tried to work it out, and the economic indebtedness in particular.

Q.—If you do not find out what the assets are, how would indebtedness give you an idea of the economic condition ?

A.—I have also estimated the assets.

Q.—Wherever you made investigations, you made a deduction from the total ?

A.—But this related to a number of families which I had investigated very closely.

Q.—Have you studied the economic condition of the United Provinces as a whole ? For instance, what is the total agricultural area of the United Provinces ; the agricultural area per head of population, taking the population as a whole ?

A.—The settlement reports are full of data on that subject. In the settlement reports we have records of percentages of the total crop to the total area as well as the actual acreage under crops, and I think we can estimate the total amount approximately.

Q.—What is the total cultivated area in the United Provinces ? The average for the whole of India, is one acre per head. There are 240 million acres and 240 million people. What is the average value of yield per acre in these parts ?

Professor Burnett-Hurst.—There are 38 million acres and the population is 46 millions. It works out to about $\frac{3}{4}$ acre per head.

Chairman.—Roughly what do you think the average yield per acre would be ?

A.—Rs. 23 per acre for one full year.

Q.—What is the average yield of irrigated and unirrigated lands, both wet and dry ?

A.—The particular village which I investigated had both dry and wet lands, and I found that the average yield for both is approximately the same.

Q.—The average income is very low. Did you take the advice of any village people ?

A.—It is based on the information supplied by the village people.

Q.—Has it not been misstated ?

A.—I did not actually measure the lands. I would obtain information from one person and check his statement with the information received from another.

Mr. Kaul.—*Q.*—Do they not publish crop yield reports for every district in the United Provinces ?

A.—They publish them in connection with Settlement operations.

Chairman.—*Q.*—Not from year to year ?

A.—Not so far as I know.

Q.—Then how are we to ascertain the income per head, property per head, assets per head or wealth per head ; how are we to collect information about production, income, and wealth ; what data should we collect, and what schedules or returns should be prepared in order to get income per head, production per head and property per head ?

A.—I would estimate the value of land and also earnings by subsidiary means, and I would also estimate the amount which a peasant might have invested in ornaments and personal property.

Q.—Would you prepare schedules for each of these separately ?

A.—Certainly.

Q.—You would ask the family either to furnish a return or to give information to the enumerator ?

A.—The schedule will be given to the enumerator. He will visit the head of the family and ask for the information.

Q.—Supposing he suspects the enumerator and does not give correct information for fear of further taxation ?

A.—I will have the information collected by a local committee consisting of influential local non-officials.

Q.—Would you also employ experts to correct the information supplied by the households ?

A.—The difficulty would be to find so many experts to help us in this kind of investigation.

Q.—Generally, in a small village where the people know each other, would they not be able to check the information collected ?

A.—What I propose is that information should not be collected from individuals from an isolated talk with the head of the family, but if a group is collected in the common sitting place of the village such information can easily be tested and corroborated. I have found that one of the most useful methods of collecting information is to collect it with the help of co-operative societies. I recently collected information in this way in a village in Berar.

Q.—Have you done any other study ?

A.—I have studied the conditions of industrial families.

Q.—If, in a rural area, we have to proceed with the collection of economic data, what agency would you employ ? You have the Government agency—*patwaris*, *kanungos* and *tahsildars*—who collect information about agricultural data. Would you employ more men under them or would you have an independent agency in each village for collecting such information, for submitting returns either to the central office direct, or through the *patwari* ?

A.—I think we should have information bureaux in every province, and should utilise the Government agency, as well as employ more men to help that agency.

Q.—Assuming you have a provincial bureau and a district census office, and every city, town or village renders its return to the census office, how much Government agency would you employ and how much work would you entrust to the local agency ?

A.—I would have an organisation such as the District Boards have, composed both of officials and non-officials.

Q.—District Boards, they say, are not effective ?

A.—That is true, but they can reach villages very easily. Without the help of district boards, co-operative societies would not have made much progress.

Q.—In the village you now have the *patwaris* and the co-operative societies ; what agency would you employ to collect returns about wealth, property, income and production ? The *patwari* collects much of the information. What agency would you employ as a result of your rural experience ? You might give us a note afterwards. Could you tell us what agency would be most suitably employed in each village ?

A.—I think no village agency is yet qualified to undertake investigations of the kind, but I would suggest that the services of *patwaris* should be utilised, and there should be other men in the village to help the *patwari*. The help of the president of the village *panchayat* may be taken, and also of the organizer of the village co-operative society.

Q.—You desire to have a sort of committee of these men, and also to have help from outside ?

A.—Yes, though I do not think that much help can be obtained from outside.

Q.—It must be under the guidance of some expert ?

A.—Yes. Particularly in Italy, agricultural statistics are collected with the help of an agency of this kind.

Q.—Would it be necessary to have experienced economists from cities to guide the villagers in their investigations ?

A.—Yes. In the different universities there are graduates who are interested in rural investigations, and their help can easily be utilised.

Q.—Do you think that a graduate agency can be had in this country for economic investigations ?

A.—I think the different faculties of economics in the different universities of India have not been given opportunity. If their co-operation be sought, they would help a great deal in collecting information.

Q.—So much for village economics. Have you given any attention to the economic condition of a province as a whole ; the income per head, assets per head, wealth per head and production per head ? Have you had any opportunities of making enquiries about production from agriculture, from industries and from manufactures ?

A.—No ; information is uncertain on this point.

Q.—Would you enquire into the value of the yield ?

A.—We should enquire, certainly. Very interesting experiments have been done in Southern Bihar by the Settlement Commissioner, Mr. Hubback. He used the equilateral triangular system and estimated the yield per acre. The area covered by the triangle was 1|1,600 of an acre.

Mr. Kaul.—May I tell you that we rejected it in the Punjab long ago ? It is called the *marla* system. We had the *marla* system of estimating the outturn but it did not work well and it was rejected.

Mr. Mukerjee.—The system has been found to be very successful in Bihar and you will find details about it in the settlement report of Shahabad.

Chairman.—Q.—What is the estimate of density of population in the most densely populated part of the United Provinces ?

A.—1,000 to 1,200 per sq. mile.

Q.—Have you studied the question as to how the increase of population keeps pace with the growth of production ?

A.—In agricultural countries like France, they have more systematic cropping. In such districts of the United Provinces which have a large population, they have now double the amount of crops that they had before. The conclusion I have arrived at by studying the increase of the total yield of crops is that systematic farming can support a larger number of people. It is a question which requires sufficient study, and if you like I can send you a note which I have written on the subject.

Q.—You mean that the means of subsistence have kept pace with the increase of population ?

A.—Yes, but not in all areas.

Q.—You have not had much time for going through the questionnaire, but could you favour us with any further information ?

A.—I have prepared a note on agricultural labour. If that interests you, I can submit it.

Q.—We want to prepare a scheme for an economic survey. We want to know what methods we should adopt and what staff we should employ to carry out investigations for the whole of the provinces. That is our problem ; could you help us with any note or information on the subject ?

A.—You want to begin it with rural areas --beginning with city, town and village and ending with the province ?

Professor Burnett-Hurst.—We are concerned chiefly with the method of ascertaining the economic condition of the people, and not with the existing condition nor with criticisms of it. In your note you have made a classification of agricultural workers under two heads : (1) Professional labourers such as earth-diggers, coolies, road menders, dock-hands, etc., who are more skilled, and (2) field labourers. Would you regard both these classes as agricultural workers ?

A.—Yes. They come from the agriculturists.

Q.—How can you regard a dock-hand as an agricultural labourer ? It is true that they are part-time workers and they have not specialised in that work. They return to their homes periodically. For instance, in Bombay : the dock-hand works in the docks for the greater part of the year, and goes to his village only for a short time, but that does not necessarily make him an agriculturist ?

A.—He comes from the agricultural class and his permanent home is among agriculturists.

Q.—Why do you apply the term “ professional labourers ” to earth-diggers, coolies, etc. ?

A.—The Bombay Labour Office has used the term “ professional labourer ” for such a person.

Q.—The term ‘ profession ’ is usually applied to persons following a calling superior to a mere trade or handicraft, such as law, medicine, etc. ?

A.—Mr. Shirras used that expression for the casual worker in one of his reports.

Q.—Would you not regard a coolie as an unskilled labourer ?

A.—No.

Q.—You classify him as an agriculturist ?

A.—Yes. Sometimes he does that work also. He would, for instance, do carting in a village and he often does that.

Q.—Would you not call such a person a carter ?

A.—No. The word ‘ coolie ’ has a different significance in different provinces. The term ‘ coolie ’ in Bengal would mean quite a different thing from that in Bombay.

Q.—Would you mind to explain what is meant by a coolie in the United Provinces ?

A.—I do not think that the word ‘ coolie ’ is very much used in the United Provinces.

Q.—In the opening page of your remarks you state that in most provinces “ the distinction in the Census Report between undefined and agricultural labourers is not a hard and fast one and there is a periodical transfer from one group to another, but in a province like Bombay a distinction can and ought to be made ”. Why ?

A.—There are not such frequent transfers.

Q.—You have suggested that in each natural region intensive agricultural surveys should be undertaken ; what should be the nature of these surveys ?

A.—I have been trying to explain.

Q.—You want the intensive survey to deal with the profit and loss of crops, the size of holdings and indebtedness. Is that so ?

A.—Practically speaking, it will be like that. We have a system of checking production.

Q.—You desire to include agricultural production and rural trade and transport in the intensive survey ?

A.—Yes.

Q.—How would you determine a typical village ?

A.—You have to leave it to the discretion of the economist who has to investigate to determine his typical villages.

Chairman.—Q.—Would he be a Government official ?

A.—That I cannot say.

Professor Burnett-Hurst.—Q.—Assuming that the scientist has selected a village as typical, would not his selection be open to the objection that that village is not a typical village ?

A.—He can prove that his conclusions are correct.

Q.—Would it not be better to carry out the investigation by taking a random sample of villages ? Do you happen to know that method ?

A.—A village should be selected after a very careful consideration, and such considerations will include the rotation of crops, the condition of the land, the condition of irrigation and so on, and after selecting the village, enquiries should be made.

Q.—Would you not adopt the method of random sampling ? What is the objection to that method ?

A.—It should be preceded by a very careful study, that is, after taking into account such factors as the density of population, the conditions of rainfall, which should not be much above the average, the general rotation of crops, etc. Then you would ascertain your typical village.

Q.—At the same time would you not adopt the method of random sampling ? Would you approve of its application under those conditions ?

A.—I think the question is a theoretical one.

Q.—It is very important to us ; otherwise I should not have put this question to you ?

A.—I think it is too theoretical.

Q.—You mention that you have read a number of very important books relating to rural life on the European Continent. Can you give me their names ?

A.—My information is from the publications and bulletins of the Imperial Institute of Agriculture in Rome, especially the journal of Agricultural Economics, of which we have had six issues so far. There is
L111EEC

also another the International Review of Agricultural Practice and Method which is mostly statistical and full of data.

*Chairman.—Q.—*This is issued at Rome ?

*A.—*Yes.

*Professor Burnett-Hurst.—Q.—*That is a periodical, not a book ? Can you give me the names of the books which you have read ?

*Chairman.—Q.—*What is the other journal you mentioned ?

*A.—*It is the 'International Review of Agricultural Economics'. Each article is preceded by an analysis of the documents and records from which the information is obtained.

*Professor Burnett-Hurst.—Q.—*Do you happen to know in what countries intensive rural enquiries on the lines of those which you suggest have been carried out ?

*A.—*There have been some important economic enquiries on these lines carried out in Oxford.

*Q.—*Would you kindly name the work ?

*A.—*The best work has been done by men in India, for instance, Dr. Harold Mann. Even they have not done the kind of intensive investigation which we would like to have.

*Q.—*Have no intensive investigations been carried out in other countries ?

*A.—*You mean investigations by which we can profit.

*Q.—*I am referring to investigations in other countries on similar lines to those which you suggest. To your knowledge, have such investigations been carried out ?

*A.—*You have yourself given a list of those enquiries. There has been recently a very intensive original investigation published at Chicago which would be very useful to us, especially in arriving at the methods of agricultural costings.

*Chairman.—Q.—*In what journal have you read it ?

*A.—*It is a bulletin published by the Chicago University.

*Professor Burnett-Hurst.—Q.—*Can you tell me who carried out the investigation ?

*A.—*That was carried out by a student of the University.

*Q.—*Do you happen to know whether there have been investigations carried out by officials in any country ?

*A.—*I do not know.

*Q.—*You have mentioned that crop reports for each district are published in the Settlement Reports. Is that a fact ?

*A.—*Yes, so far as I know, it is done in the United Provinces.

*Chairman.—Q.—*Crop Reports are not published separately for the districts ?

*A.—*No.

*Professor Burnett-Hurst.—Q.—*Are you not aware that in the provincial season and crop reports, details are given by months and by districts ?

*A.—*Not month by month and district by district, I thought the Chairman wanted to know whether crop reports are available district by district. That was the question put to me.

*Q.—*You have referred to the conditions of industrial labourers. Would you kindly tell me whether you have studied those conditions, and if so, of what particular industry ?

*A.—*I have studied particularly the conditions in jute mills in Calcutta.

*Q.—*What kind of information did you ascertain ?

*A.—*I collected family budgets, particularly relating to the percentage of rent and of income to the total expenditure and the particular conditions of housing ; and in this connection I have studied the relation of the percentage of expenditure on rent to the income.

*Q.—*Is it a fact that most of the Calcutta jute mills house their own labourers ?

*A.—*It is not a fact. Very large masses of the labourers are living in private *bastis*.

*Q.—*What proportion would you say are housed by employers ?

*A.—*No definite figures have been estimated by anybody.

*Q.—*You wish information to be obtained from groups of persons. Is that not so ?

*A.—*Yes.

*Q.—*Not from individual families ?

*A.—*The information should be taken from groups of persons and be checked then and there. Apart from that, fears and suspicions have to be avoided.

*Mr. Kaul.—Q.—*That is, you would make a sort of public enquiry ?

*A.—*I would not hold a public enquiry. I would have the information collected, say, from ten or twelve people and see that that information is corrected by the leaders of the village.

*Professor Burnett-Hurst.—Q.—*Do you think that people will give information in the presence of anyone else, and give it accurately ?

*A.—*Yes.

*Q.—*Do you think they will give correct information regarding their personal property and their jewellery ?

*A.—*Yes. You must learn to command their sympathy and confidence. If you go as an official in their midst, they will take you to be a tax gatherer.

*Q.—*But, in any case, they might think that officials may adopt other methods to obtain information.

*A.—*I have found this method to be very useful. The official method of collecting information through the *patwari* and *chowkidar* is open to grave objections.

Q.—You think that the agency must be a non-official agency ?

A.—Both Government officials and the non-official agency should co-operate. If you do not have any co-operation, you cannot have information of value.

Q.—Are you of opinion that a wage census is desirable ?

A.—Yes.

Q.—If so, would you use powers of compulsion ?

A.—So far as industrial labourers are concerned, we can use compulsion.

Q.—In giving evidence before the Taxation Committee, you stated that you did not think that compulsion by legislation was essential.

A.—I think that in the case of industrial labour, legislation may be necessary.

Q.—You have changed your views ?

A.—It was a general question that was asked then.

Q.—Would you not use compulsion for ascertaining agricultural production ?

A.—No, they will fight shy of these things.

Q.—You referred to the different classes of people about whom you will secure information. What persons would you include under the term ' middle class ' ? The upper class, you stated, are persons with an income of Rs. 300 and over.

A.—Yes.

Q.—Would you say that a person getting Rs. 350 belongs to the upper class ?

A.—It is to be determined by the statisticians in the same way as we have to do it in the wage census.

Q.—You would not fix it at a single figure ? You would leave it to statisticians to determine ?

A.—Yes.

Q.—What is your conception of the upper class ?

A.—Men having an income beyond a limit that might be fixed by statisticians.

Q.—Well, say, Rs. 500.

A.—Yes.

Q.—Do you think that such persons will give particulars of their family budgets ?

A.—Yes, they will give it if, for instance, some typical investigations are conducted by interested experts and some families of the higher class are questioned. In this way we can arrive at a standard.

Q.—We want information relating to working-class families as well as to persons of the higher class.

A.—In America, family budgets regarding the higher classes have been collected.

Q.—The difficulty is that no one could regard the budgets collected as typical. Their method was not scientific.

A.—To obtain family budgets from the people is an extremely difficult thing. But I think that is the only method of obtaining information. Even an expert may be open to grave errors. The method that has been suggested and that has been followed with very great success in America is the estimate of property.

Q.—Have you not heard of the method of random sampling which has been adopted with very great success in England ?

A.—I believe this method consists of collecting sample family budgets from the different classes selected from the different strata of society and then trying to make an estimate.

Q.—You are not aware of the system of random sampling ?

A.—I know it but it is not better than the other method.

Q.—I cannot say that I agree with you there. Now in your classification of craftsmen you say—“ I would suggest tabulation of wages of such artisans and workers ;—*Rural* : leatherworkers, barbers, watchmen, potters ”.

A.—I have had to suggest these as they have been omitted from your list.

Q.—These are in addition to those suggested in the questionnaire ?

A.—Yes. I find that such persons as watchmen, etc., have been omitted.

Q.—In your statement about the hours of work for the field labourers, you have stated the hours in Bengal, Madras, Bombay and the Central Provinces. Would you be prepared to give any figures for the United Provinces ?

A.—Yes.

Q.—What would the figures be ?

A.—6 A.M. to 1 P.M. and 2-30 to 5-30 P.M. In the afternoon they usually look after the cattle or work on odd jobs. That is the time when the work is less strenuous.

Q.—Would that apply throughout the year ?

A.—It would be like this throughout the year, but during the harvest time there is a good deal of sweating, and, especially in Bengal and Malabar, I have seen field labourers working throughout the day.

Q.—Do you consider that these hours are adhered to throughout the year ?

A.—Except during short spells.

Q.—I notice you state that “ rural wages have to be reckoned in perquisites ”. I take it that your meaning is that the field labourers' share of crops and their perquisites should be taken into account in determining rural wages.

A.—Rural wages are calculated, not merely on the share of the crop, but also on the perquisites. The usual impression is that field labourers are given nothing more than grain wages, but in many parts of India—in Orissa and Madras, for instance—they are given besides cloth, food and grain wages very small slices of land from which they can earn a meagre living.

Q.—You have omitted cash wages. I presume you would include that as well.

A.—I refer to cash wages later on.

Q.—You refer to the practice in Bengal and the Punjab but you do not mention anything about the practice in this province. You stated that you carried out studies in a village near Lucknow and ascertained the income of families. Would you please tell us what you included under the term “family income”?

A.—I estimated the net profits of agriculture for each economic holding. I also found out whether there were other supplemental sources of income.

Q.—You did not include such things as fire-wood and cow-dung cakes?

A.—Cow-dung cakes or fuel are not to be included.

Q.—People are compelled to purchase fuel in England and other countries.

A.—Your comparison should be with the countries in the East like China and Japan. In any estimate of agricultural wealth, we should not include such things as fuel or cow-dung cakes.

Q.—Then your view is that one cannot compare India with Western countries?

A.—Obviously, there must be differences.

Q.—You say that such comparisons would be vitiated?

A.—Such comparisons would not hold good for the reasons I have given.

Mr. Kaul.—Q.—In regard to economic circles, do you want to improve upon Mr. Datta's classification?

A.—Yes.

Q.—Can you tell me how you would improve upon the classification?

A.—Mr. Datta's classification was chiefly based on rainfall.

Q.—He took into consideration mainly prices. You talk about the division of each province into natural regions. Each natural region is divided into several districts?

A.—In the provincial Census report, we have the classification of regions. To this I would also add other bases of classification.

Q.—The natural regions which were adopted by Mr. Datta overlap provinces. Then there is the division of the province which is territorial. It is rather political. Again, there is the division of provinces into districts.

A.—The natural regions are divided into the sub-regions. The basis has previously been rainfall. I would add other bases of classification,

such as the land system, the methods of farming, the conditions of irrigation and things like that, and after a consideration of these factors, I would arrive at the economic region.

Q.—Do you want to adopt any of the divisions that exist at present ?

A.—I want new divisions.

Q.—What are those divisions ?

A.—They have to be worked out.

Q.—Do you prefer Mr. K. L. Datta's classification ?

A.—Where there is a similarity of conditions.

Q.—Would you adopt Sir Edward Gait's classification, which was based on rainfall ?

A.—My contention is that that classification is out of date.

Q.—Can you give us a rough idea as to what your divisions would be ?

A.—I have not had time to work it out.

Chairman.—Q.—Could you give us a short note in the course of a fortnight ?

A.—Yes.

Q.—You want to make these intensive surveys in order to check the returns made by the *patwaris* ?

A.—That is not my object. My chief object is to get correct economic data.

Mr. Kaul.—Q.—In these intensive surveys which you want to make, how do you wish to find out the outturn ? Do you want to go to each man and ask him what the outturn was ?

A.—The best method would be to follow the triangular method of systematic crop cutting, as has been adopted successfully in Bihar and Orissa.

Q.—How can it be successful ? I am afraid I cannot believe in that, because for the last thirty years I have done the same work myself. I do not know how conditions are different in the Punjab and in Bihar and Orissa.

A.—But this is how it is done. That is a fact.

Q.—I know it is a fact. In the Punjab you have a large *barani* tract which covers 100 acres from one end to the other. One end will probably give you two maunds to the acre and the other ten maunds to the acre.

A.—Mr. Hubback has been comparing this system of crop reporting with other systems and found this more reliable.

Q.—But the test is, the larger the area covered the more reliable must be the experiment. Then comes the difficulty of selection. You select villages as your sample. Please remember the difficulty attaching to this method. You have to wait in the village as long as the crop ripens.

A.—The crop is measured by a triangle. It is then cut, the sample is put in an envelope and later on sent to the Settlement officer. This method has been found to give useful results.

Q.—That means that the Settlement officer is saved the trouble.

A.—That is rather unfair. How is it done in the Punjab ?

Q.—The officer who performs the experiment marks out a certain portion and makes the *chowkidar* responsible. Nobody is allowed to touch that portion until the crop is ripe. He sits there until the whole crop is cut. He is not supposed to leave the place until he has actually measured the grain and has made an estimate ?

A.—I believe in this method because the Settlement officer is not at the mercy of the *chowkidar*. In the triangular method the measurement is done directly before his eyes.

Q.—But where the same process is gone through for each area, it ought to be more reliable. The triangle is, say 3 square yards. You cannot put the whole crop in that area in an envelope ?

Chairman.—Q.—There may be special envelopes made for the purpose ?

A.—The grain is reaped, threshed and then put in an envelope.

Q.—Not the hay ?

A.—No.

Mr. Kaul.—Q.—You mention that 1/13th and 1/16th parts of the barley and wheat crops respectively are paid in the Punjab to the *chamar*.

A.—Yes, I have seen this in a village in Lahore district.

Q.—Do you know the name of the village ?

A.—It is some 20 miles from Lahore.

Q.—What do they call it ?

A.—The information is based on my records. I was given the instances at random.

Q.—You talk about rent receivers increasing and peasant proprietors decreasing. Have you tried to analyse what the reasons are ?

A.—The reason chiefly lies in this ; *viz.*, that the holding ceases to support the peasant's family. That is why the peasant sometimes works as a field labourer under the superior proprietor.

Q.—Do you not think that land should be in the hands of people who can invest money ? Of course, I do not want to go into the controversy of the Punjab Land Alienation Act ?

A.—I think, under present conditions, it ought to be limited.

Q.—You want more people to live on the land, and not as parasites ? For instance, I own land myself. I have it cultivated by my tenants. Do you want me to give a plough for my land ?

A.—What I want you to do is this. In France, there is a form of agreement between the landlord and the tenant. The landlord has to supply the agricultural machinery. He has to supply expert knowledge and guidance. The field labourers do the work. But here, in India, the rent receiver is merely a parasite. I do not believe in proprietorship which does not involve some actual participation in agriculture. It is unsound.

Q.—I pay the land revenue and make every arrangement.

A.—I do not believe in that.

Q.—What do you want me to do ?

A.—There are share tenancy agreements in some parts of Europe, and in those agreements you will see that the landlord who pays the revenue has to supply the agricultural machinery, expert agricultural guidance, the cost of reaping the harvest and also the threshing machinery. He has also to supply houses for the farm hands. I wish you to do all these things.

Chairman.—Q.—Would you kindly give us a copy of the form of the share tenancy agreement ?

A.—It has been translated and published in one of the issues of the International Review of Agricultural Economics. You may also refer to Irvine's 'Making of rural Europe'. That book also deals with share tenancy.

Professor Burnett-Hurst.—Q.—The Taxation Enquiry Committee has referred to that book. It deals with share tenancy. Conditions in Europe differ very much from those in India. Do you think that the villagers will be able to form such societies as you have recommended ? You said that with the *patwari* there might be associated non-officials and some economic experts. Do you think they would be able to form such societies ?

A.—Yes, I think so. I think the time is ripe for beginning such work.

Q.—Do you think they would be able to do it themselves ?

A.—Not merely is initiative needed, but some guidance and leaders.

Mr. Kaul.—Q.—Non-official guidance or initiative from Government is needed ?

A.—I believe that official guidance is needed, but without non-official help such investigations will rouse suspicion. To remove suspicion, it would be best to work both ways.

Q.—Do you suggest that the initiative should be taken by Government ?

A.—I think there should be co-operation between Government and non-officials.

Q.—I would suggest, for instance, the formation of a Statistical Bureau in each province consisting of certain officials and non-officials. Is that the sort of body you refer to ?

A.—In order that we might have elasticity, the initiative must be from the non-officials.

Q.—What would be the source of the initiative ?

A.—I should have the central bureau, the district bureau and the village bureau.

Professor Burnett-Hurst.—Q.—If you have village bureaux, would the villagers be able to support them financially ?

A.—The District Boards might be asked.

Q.—Are you not aware of the financial condition of the District Boards ?

Chairman.—Q.—What would it cost to have a complete census of a hundred families? How long would such an enquiry take? How many families could one man do per day?

A.—A hundred families would take one man three months.

Q.—Remember that Government officials have collected a lot of information. You have to take them. They will be more reliable. It will be a sort of co-operation with the Government officials.

A.—You would have to divide your enquiries into these heads :— income, wealth and property.

Q.—What would be the monthly wages of that man?

A.—The monthly wages would be about Rs. 50 per mensem. That is, it would cost a rupee and a half per family.

Mr. Kaul.—Q.—I have just received information from the Punjab that they pay at the rate of Rs. 150 per student.

Chairman.—One legislator stated it was one rupee.

A.—But the investigation is much more detailed.

Q.—But you will not procure an expert on Rs. 50.

A.—Our post-graduate research student gets Rs. 75. To him you can entrust the economic study of the whole region.

Mr. Kaul.—Q.—Do you want him to do this as a business?

A.—As a thesis. He will do it if he has to prepare for his examination.

Q.—In our University, advanced M.A. students have to do it as a part of their courses. They have to go from village to village and make enquiries.

Chairman.—Q.—Why do not you publish the results in a short pamphlet? You simply bury them in learned treatises. Have you ever published leaflets for the guidance of agriculturists?

A.—No.

Mr. B. G. BHATNAGAR, M.A., F.S.S., Lecturer in Economics, University of Allahabad.

Written Statement.

The Economic Enquiry Committee has been appointed in response to the wishes of the Indian Legislature in connection with the institution of a general economic enquiry in India. If I have understood the drift of the speeches made in the Legislative Assembly correctly then their object in having an economic enquiry was to get an idea of the economic welfare of the people of India before undertaking any serious departure from the existing system of taxation. Coupled with this seems to be the idea that the people of India are overtaxed, *i.e.*, they pay more than what their material possessions would justify. I have already emphasized before the Taxation Enquiry Committee that a knowledge of the total wealth of the country during a particular period is of no practical significance to any scheme of taxation whether its aim be fresh taxation or readjustment of the old taxes. What is here important is the distribution of the income or the wealth of a country as between the different classes. And I note with pleasure that the terms of reference to your committee require the examination of the material at present available for framing an estimate of the economic condition of the various classes of people of British India ; to report on its adequacy and to make recommendations as to the best manner in which it may be supplemented, and as to the lines on which a general economic survey should be carried out, with an estimate of the expenditure in giving effect to such recommendations.

From your questionnaire, however, especially Question 1, it would appear that your committee also aim at finding out the absolute total wealth of the country and her production during a certain time. As I have pointed out above, information about these would be of little importance to help us in practical problems or taxation and besides would involve much loss of time and expenditure and even then may lead us nowhere and that because in a vast country like India, where hoarding habit and concealment of assets have been practised for ages past, it is no easy matter to secure any fair estimate of the total wealth of the country. When I say this, I do not mean that such an estimate even though rough and ready would be of no significance whatever. If we could have some sort of an estimate of the wealth and production of this country and then have fresh estimate of the same, say, at the time of each census, then we will have secured something of great importance to the students of socio-economic problems in India. A periodical estimate of this kind would at least give the people and the Government of India an idea as to whether they are going up or down on the ladder of progress. An enquiry of this nature would require quite a different set of methods and machinery than the enquiry for estimating the economic condition of the various classes of people and as the terms of reference to your committee definitely ask for the latter I will confine my answers to what I think would directly bear on that aspect.

In all the temporarily settled parts of India we have periodical settlements and the first duty of the Settlement Officer is to divide his district into a number of homogeneous units and for each homogeneous unit he has to recommend to the Local Government certain standard rates of rent for the various kinds of soil met with in that unit. The reasons that lead him to arrive at those homogeneous units as well as the standard rates of rent are submitted in the form of a confidential report known as the Rent Rate Report. Now I submit that our unit of economic enquiry into the condition of different classes should be this homogeneous unit, and that for each such unit people should be divided into classes and then for each class intensive enquiry as to the items given in Question 1 should be made for at the most ten per cent. of the households belonging to that class, three the richest, three the poorest, and the remaining four the middling. It is here that I will strongly recommend the making use of the co-operative credit society *haisiyat* registers and other independent evidences already existing.

These smaller homogeneous units should be linked up to form a bigger regional unit for the purposes of coordination and generalization of results. In this connection I may point out that the natural divisions adopted both by Sir Edward Gait and Mr. K. J. Datta are defective and I do not look upon them as suitable bigger units for linking and generalising purposes. Thus Sir Edward Gait has put down Assam as one natural division. Now even a superficial study of the geography of Assam would show that the province of Assam is not a homogeneous region as it is understood by students of Geography. It has two well-defined regions (1) the valley portion in which rice and jute are the predominant crops, and (2) the mountain hill sides on which the tea-plantations are carried on. Or take again his 4th natural division 'Bengal'. That again is by no means constituted of one homogeneous region. The nature of soils, the amount of rainfall, the kind and quality of crops grown are very much different in what is known as Eastern Bengal from the Bengal Proper. The same is true of Mr. Datta's classification although from the point of view of regional classification, his is far superior to that of Sir Edward Gait.

Question 1.—The enquiry on the subjects mentioned in Q. 1 in the case of individual families would be sufficient.

Q. 2.—To start with I would frame no classification of the people of India as a whole. I will have a classification for my smallest enquiry unit deduced from the study of facts there and later on would build up a classification of the people of India after co-ordinating the results of these smaller units.

Q. 3.—Yes. We will have to subdivide provinces into tracts which are more or less similar in economic characteristics and that because our provinces as they are at present are not based on any topographical or regional considerations. I would prefer Mr. Datta's classification with some modifications here and there.

Q. 4.—We should not follow the standards of the dominions or the European countries because our needs are different from theirs and that because of the differences of our climate and our social and religious customs.

Q. 5 & 6.—It isn't true that the machinery for crop reporting is defective but it is true that the statistics of area sown under different crops and average yield is not very reliable and this is not because there is any defect in the organization or machinery maintained for this purpose but because the men who run the machinery haven't got the sense of responsibility sufficiently awakened in them, whatever its cause, that the result of their labour is not reliable. From my experience I find that practically the whole of that information which we find published in (a) the agricultural statistics of India, (b) provincial season and crop reports and estimates of area and yield of principal crops of India is based on the returns submitted by the village Patwari to his Halka Kanungo, and by the Kanungo to the Tehsildar and by the Tehsildar to the district officer and thence to the Director of Statistics. Now if our immediate officer the Patwari were to report the true state of things which he generally does, in the case of areas shown under different crops then our published statistics would be thoroughly reliable but I am aware of cases where the Patwari, owing to great pressure of work or some other cause doesn't take the trouble of actually going about the villages put in his charge and finding out the true area under each crop but fills in the details by some method of 'Interpolation' best known to him and sends them to the Halka Kanungo. Now if our Halka Kanungo were to check the returns submitted by the Patwari by actually going to one or two villages and finding out the facts for himself as he is required by the law to do, then our Patwari wouldn't dare to put in fictitious returns. But generally our Kanungos are men with a deep faith in the integrity and goodness of human race and as Patwari is an honourable representative of that race, he (the Kanungo) seldom takes the trouble of going out, and accepts *in toto* the return submitted by the Patwari. The same is true of the Tehsildar, the District Officer and the Director of Statistics. Of course the multiplicity of duties of the district officer and the Tehsildar justify the unquestioned confidence they put in the return submitted by the Kanungo but there seems to be no justification for the unquestioning faith that our Kanungos seem to place in the Patwaris under them. The Patwari is after all a low paid and a semi-literate gentleman and it seems to be the characteristic of all such people that every now and then they must have the pressure of a heavy hand to make them work and work honestly. We need therefore some sort of a brake that will make our Kanungos more energetic and less credulous than they are now. If that could be done our agricultural statistics would command far greater reliability than they can do now. Coming to the estimates of yield I must say that the degree of reliability is far less here than in the case of acreage sown. It is due to two causes (i) it is the Patwari who makes an estimate of the *anna* yield and somehow or other I have always found him obsessed with the idea that if he overstates he will be gaining favour with the Government. This funny idea is not found in the minds of the Patwaris only but is met with even in the minds of higher officers such as the Kanungos and the Tehsildars. Very recently we had a tragic show of this idea in the District of Muttra. In the Muttra District they had heavy floods. The Collector naturally wrote to the Tehsildars to report the extent of damage in their respective tehsils. The Tehsildars deputed the naib-tehsildars to go out in the villages and to find out if the floods had done any harm. The naib-tehsildars, as it was discovered later on, never stirred out of the Tehsils and reported that all was well. On their report

the Tehsildars reported to the Collector that in their tehsils floods had done no harm. However, by some strange fatality the Collector of Muttra was not satisfied and himself paid a surprise visit to those Tehsils and unfortunately for him he had to wade through a foot deep of water in the areas about which the Tehsildars had reported that all was well. The upshot of this was that the two naib-tehsildars who had submitted these false reports were forthwith dismissed, and all this was done in the foolish belief that the Sarkar will be pleased if a report of no damage was submitted.

I have mentioned all these facts to show that so far as machinery and organization for reporting is concerned it is there elaborate enough but as the men who run the machinery are not conscientious enough to do their duty well, the results are unreliable. To make it reliable, what is necessary is not a change in the machinery itself but a change of outlook in the men concerned and that can only be brought about under the existing system of low standard of civic consciousness by pressure from above, *i.e.*, a greater vigilance on the part of higher officials such as the Collector and the Tehsildar.

Q. 7.—Yes.

Q. 8.—The village chowkidar is not a fit agent for this kind of work. In such localities where there is no subordinate revenue agency some literate person should be appointed for this work.

Q. 9.—The information collected about the live-stock, ploughs and carts in 1919-20 seems to be fairly reliable but instead of quinquennium census I would suggest that it should be made an annual affair and the work of reporting on these should be entrusted to the same agency which may report on crops.

Q. 10.—It is regrettable that so far no attempt has been made to publish regular statistics of such pastoral products as mentioned in the question. In order to secure information about them, I would suggest (*i*) that the slaughter houses be licensed, the license fee to vary with the number of cattle slaughtered. For this, slaughter-houses be required to maintain a register furnishing information on the various heads mentioned in Q. 10 ; (*ii*) to supplement the above and to secure information about isolated villages where a number of cattle is also slaughtered it should be obligatory to report the slaughter of cattle in kind, quality and quantity to the village chowkidar or the village patwari and he be required to report to the higher authorities.

Q. 12.—If they have a fairly accurate census of cattle in kind and variety we could deduce from that the quantity of milk produced and if we know the quantity of milk produced it would not be necessary to find the quantity of butter, curd and ghee and cheese because all these are produced out of milk.

Q. 13.—I have nothing to say.

Q. 14.—Yes.

Q. 29.—Yes. I advocate compulsory legal powers for obtaining the necessary information.

Q. 30.—If we were to adopt compulsory legal powers for obtaining returns of production in different industries and establishments then I do not think it necessary to have a regular census of industrial production. Instead I would suggest that from the annual returns so secured a decennial progress report should be compiled and this should synchronise with the census report so that at regular intervals of ten years people interested in the welfare of this country may have a comparative idea of the condition of population and production in this country.

Q. 32.—I would prefer provincial statistical organizations for this purpose as well as a strong central statistical organization for the whole of India to sum up the results for the country as a whole.

Q. 33.—So long as information about the expenses of production in different rival concerns and other technical details is not asked for and for our purpose it is not necessary to ask for it, there seems to be no need for taking any precautions whatever.

Q. 34.—I would define large industrial establishments as those which are governed by the Indian Factories' Act.

Q. 35.—For the purposes of the census of Industrial Production I would adopt the classification given in "Large Industrial Establishments in India", published by the Department of Statistics.

Q. 36.—I would propose the omission of (d), (f), (h), and (i) and that for the reason of saving ourselves from the need of taking precautions to see that the information doesn't reach the rivals.

Q. 38 & 39.—It is both desirable to collect data about the cottage industries but we should ask for information only on the following heads; (1), (3), (5) and (6). In the urban areas this information should be secured through the Municipal Board and in the rural areas through the Subordinate Officer.

Q. 40.—I share the view detailed in the question and at least in the United Provinces no regular returns of wages in agricultural areas are submitted by any one. So far the wages in agricultural areas are concerned they change but slowly for a number of years. At the same time the rates for the same vary for different occupations and for different *fasals*. It is very difficult therefore to have uniform and regular returns. In this connection I would strongly recommend that just as in the town areas we have a *choudhri* for a market who reports once a week to the Tehsildar about the prevailing prices of different commodities in the market, similarly in the rural areas we should entrust the task of reporting wages of different classes of labourers and the prices of different commodities both to the *mukhya* and the Patwari once a week and both of them be required to send their reports to the Halka Kanungo. The Kanungo thus will receive information about the same set of things from two independent quarters and thus be in a better position to find out the facts.

Q. 42.—We should have a uniform classification for all the provinces in India and that preferably the one adopted by the Bombay Labour Office.

Q. 43.—It will be very difficult for the agency available in the rural areas to give an accurate idea about the average monthly wage of the

different classes. We should, therefore, aim at finding out the frequency of employment.

Q. 44.—The extra payments received at the harvest time should be apportioned and added to the *fasal* wage.

Q. 45.—The kind wage should be converted into money wage in terms of the prevailing price of the commodity received in that locality.

Q. 46.—The wage return should be classified according to the small economic enquiry units that I have recommended. By fixing those units we will naturally have to take into consideration similarity of economic conditions and this would cover demarcation on the valuation of canal irrigation, well irrigation, and so on.

Q. 47.—While calculating wages in rural areas I am not in favour of classing dwelling as one of the supplementals and that for the simple reason that in rural India, I have never heard of, and never came across, a case where people had to pay rent for their houses. About others, it should not be difficult to make a rough estimate.

Q. 48.—I would prefer the median together with quartiles for representing the rates of wages in each district and that because it is easier to calculate by people like myself who know little of Mathematics.

Q. 49.—Certainly utility of wage returns will be enhanced if we could know the total number of people getting a particular wage in a particular area.

Q. 50.—Yes.

Q.—51.—Yes, it would be possible to ascertain the hours of labour of agricultural workers.

Q. 52.—None.

Q. 53.—Yes.

Q. 55.—Yes.

Q. 56.—Yes.

Q. 57.—I am of opinion that not only detailed survey similar to that of census of wages in the Bombay Cotton Mills is desirable to undertake but I am also of very strong opinion that all kinds of large industrial establishments should submit regular, weekly returns, number of people employed in each kind of work and this preferably under legal compulsion.

Q. 58.—Yes. In the present state of feeling in India legislative steps will have to be taken.

Q. 59.—The day should be taken for recording wages for statistical purposes.

Q. 60.—Yes, it would be necessary to ascertain the number of days worked by an individual.

Q. 61.—I do not know if I am correct in premising that the main object of finding out the average rate of wages paid to a certain class of worker in a certain industry is to see that he gets enough to maintain a reasonable standard of living for that kind of work. If this is true then the complications arising out of the habit of people working in industrial

centres periodically migrating to rural areas is not of much significance so long as the labourer gets enough from each particular industry on which he is working during a particular period.

Q. 62.—Yes, the diversity of figures is due partly to the part played by assumptions in the determination of results from data which are considered imperfect and partly to the fact that some have included the money value of services while others have only confined themselves to production. If the system of returns about large industrial establishments, cottage industries and agricultural statistics recommended above is given effect to then certainly statistics will become more reliable.

Q. 64.—The unit should be a household.

Q. 65.—I would have different periods of time as the unit for measuring income for different classes. For the cultivators, I would have half year *kharif* and *rabi* period and so on.

Q. 66.—Yes.

Q. 67.—Yes.

Q. 68.—By no method can we hope to get a reliable idea of the total wealth of the country. And even if we could get it would mean so much labour wasted because I really do not know to what practical use could we put the figure of total wealth of India and as I do not consider it worthwhile to find out the total wealth of the country, I pass over all the questions relating to this item.

Q. 76.—In order to have a correct idea of the cost of living of any class we must know two things (i) the standard of living or an Inventory of Different Commodities that the class is in the habit of consuming both in quantity and quality, and (ii) the prices of those commodities in that locality. Therefore, in order to measure variations we should have periodical collection of budgets and regular returns of prices of commodities.

Q. 77.—No, it is not.

Q. 78.—I would adopt B.

Q. 79.—One year.

Q. 80.—Say 10 per cent.

Q. 81.—Yes, these expenses should be included.

Q. 82.—I have already answered.

Q. 83.—I do not know of any official records besides those mentioned in the question.

Q. 84.—Household.

Q. 85.—We should try to find out information only about (i) outstanding debt, (ii) rate of interest, and (iii) security.

Q. 87.—From section 1, I will cut out (c) and from section 2, (d).

Q. 88.—For the purposes of finding out total production of the country it would be sufficient to ascertain the total production of the village, and for that I would recommend a small board of 3 men consisting of (1) *zamedar* or any other leading educated man in the village, (2) the *mukhya* and (3) *patwari* who should also act as the secretary of the board,

but for finding out the economic condition of the classes such an enquiry would be of no use.

Q. 89.—Yes.

Q. 90.—I think they will be sufficiently reliable.

Q. 91.—The enquiry should be by intensive study.

Q. 92.—The same board that I have mentioned above.

Q. 94 & 95.—If we are able to secure fairly accurate and regular returns of agricultural, cottage and large scale industrial establishment industries, then for the future we needn't have any periodical surveys. From this very data an estimate of production could be built up and published simultaneously with the population census.

Q. 96.—Yes.

Q. 97.—In this category I will place cotton, jute, iron, steel, tea and coffee plantations.

Q. 98.—There is no harm if we could do that. The information collected at the initial survey should be published only for economic units, provinces and the whole of British India.

Q. 100.—It will be highly desirable to have an official year-book of India.

Q. 101.—Most certainly.

Q. 102.—We must have for every province some sort of a bureau, call it either a census statistics bureau or publicity bureau, but I do not consider it necessary to have a branch in every district. However, as the Collector of a district has multifarious duties and little time to scrutinize the returns submitted by the tehsildars I would therefore strongly recommend that a deputy collector should be detailed in each district to supervise the collection of statistics.

Q. 103.—Yes.

Q. 104.—Yes.

Q. 105.—Yes.

Q. 106.—The cost of the initial economic enquiry should be borne by the Government of India and the cost of the recurring charges to be divided between the Government of India and the Local Governments.

Q. 107 & 108.—No.

Oral evidence, the 7th April 1925.

Chairman.—*Q.*—In some countries they publish papers about wealth. If you do not want to know about the wealth of India, your neighbours will be finding it out. In America, they publish the wealth of India, and they make mistakes. Would you allow them to publish such information without correcting their figures ?

A.—If they want to give themselves the satisfaction of publishing the wealth of India, let them do so. It is impossible to get correct information. I am quite sure nobody is going to tell us the value of jewellery in the possession of particular families.

Q.—In every country it is the same. They do not give the wealth correctly.

A.—But for what purpose ? Is it worth while doing it ?

Q.—For comparison between one country and another, and to see the relative position. If you know what wealth there was in 1915, and estimate what it would be in 1925, you will see from it how much you have prospered. Is it not an important object ?

A.—It is, but I say that it will be known by having an idea of production at various periods.

Q.—The production will vary with the seasons, and in a year of drought it will be much less.

A.—While determining the production in agriculture we will not take one year, but a series of years.

Q.—So you would be content with production ?

A.—Yes, because it is easier to calculate. We would not be able to get information about wealth here.

Q.—After all, wealth and income are the index of material well-being.

A.—Yes, they are, but even the income of the country during a certain period is not the absolute wealth of the country.

Q.—Are not both inter-dependent ?

A.—Yes, I do not say it is not important.

Q.—Do you know that in America the taxation is based on property only and not on income ?

A.—If your object is to find out the total wealth in India, it is useless for the purposes of taxation. If you want to find out the wealth of individual classes, it may be useful for purposes of taxation.

Q.—We want the wealth of the country.

A.—It does not seem to be a practical proposition to ascertain it.

Q.—You have referred to a number of homogeneous units and certain standard rates of rents for those units. Would you take the homogeneous unit as the unit of enquiry for economic investigation ?

A.—Yes.

Q.—What is your opinion regarding the much abused *patwari* and his methods of collecting statistics ?

A.—I believe that they are capable of improvement, but at present, in certain places, they are defective.

Q.—What are the defects in the agricultural statistics? What other means would you suggest in order to bring them up to the standard you have in view?

A.—What I find is this: there are two accounts of statistics, showing—(1) the area sown in a particular village, and (2) the average yield. My idea is that the figures of areas sown are generally correct, but the figures of yield are inaccurate, for, sometimes, I have found that the *patwari* never goes to the village to collect this information.

Mr. Kaul.—Q.—Do you want more supervision?

A.—Yes, as regards yield.

Chairman.—Q.—Would you take a census of live-stock? At what intervals of the year would you take it?

A.—I would have it yearly.

Q.—As regards the agricultural and industrial statistics, at what intervals would you have the stock-taking?

A.—Yearly.

Q.—You do not consider a periodical census of industrial production necessary? If we are to adopt the same, what would you suggest?

A.—If we are to adopt the system of annual returns of production from industries, then it is not necessary to have a periodical census.

Q.—They are detailed censuses at intervals, and general accounting according to the data available.

A.—If we get reliable returns, you may make out the details according to the decennial report.

Q.—What branch of economics have you been particularly interested in? Mr. Mukerjee dealt with rural economics?

A.—Rural study. That is my subject also in the Allahabad University.

Q.—Have you prepared any village survey?

A.—I have carried out a few village surveys. One or two have been published.

Q.—In what way do you think University Professors can help in this economic survey?

A.—They can help with their suggestions and by training students.

Q.—With what object did you make these individual enquiries? What results did you get, and did you publish any of those figures?

A.—One of the surveys has already been published, *viz.*, Bulletin No. 20 of the Economics Department.

Chairman.—Q.—Have you made any estimates of the standard of living and actual consumption? What proportion of the expenditure is incurred on food, on clothing, on rent, etc.?

A.—I cannot specifically answer these questions offhand, but I will submit details to the Committee.

Q.—You have suggested a small Board consisting of (1) the zemindar or any other leading educated man in the village, (2) the *mukhya*, and (3) the *patwari* in order to prepare the economic data of the village.

A.—I would like to modify this. In a village where there is a Co-operative Society you may utilise it. We must have some sort of a committee to carry out these investigations.

Q.—Do you want the committee to help the Government officials ?

A.—Of course. I want the committee to co-operate with Government officials.

Mr. Kaul.—*Q.*—Supposing it was decided to ascertain the total wealth of the country—which you do not consider necessary—what methods would you recommend for ascertaining it ?

A.—First of all, I should like to know one point, *i.e.*, whether you include, under 'wealth' land.

Q.—Yes.

A.—I will first start with the published data at my disposal. For every province you know the total area of land, and also the value of the land.

Q.—Would you take the value from the returns that are published here ?

A.—Either we can depend upon the returns or we can go to the sub-registrars' offices in the *tahsils*, and find out the sale value of the land in that particular locality ; or we could ascertain it by particular enquiries.

Q.—Would you do that from village to village and from district to district ? You could not do that for the province ?

A.—We could not do it for the district either, because I see that in different parts of a district the values vary.

Q.—So you have to work it up for each village.

A.—No. For a group of villages.

Chairman.—*Q.*—Then why do you not total up the figures for all the villages ?

A.—First of all we have to total them up for each village.

Mr. Kaul.—*Q.*—That is simple. As regards houses, for instance, how would you do it ?

A.—I have been thinking it over since yesterday as to whether we should include houses in rural areas. The difficulty is this. In rural areas, the house has a very small value. There is no rent and, as such, there is no definite information. We shall have to adopt some basis arbitrarily.

Q.—There is no rent basis in villages. What method would you adopt in valuing houses in rural areas ?

A.—Personally, I am inclined to put no value on them. I do not know what the practice in India is, but in my district, in Agra, when a tenant has left the house, the zemindar generally sells it to some other man.

Q.—In any case, the house has a certain value.

A.—It can be found out by an enquiry.

Q.—By an intensive enquiry ?

A.—Yes.

Q.—When talking about economic circles and economic units of enquiry, I did not understand what you were referring to. Do you mean that we should make enquiries by assessment circles, each district being divided into homogeneous units ?

A.—In the Punjab, you call it rent assessment circles. Here we call it rent rate circles. If the object of the Committee is to find out the economic condition of the people of the various classes, you had better confine your enquiries to rent circles.

Q.—We have to find out what are the factors we should consider in ascertaining the economic condition of the people. Would you suggest that for this purpose, six things might be taken into account, *viz.*, production, wages, income, cost of living, wealth and indebtedness ? These things will have to be considered in determining the economic condition of the classes. Would it make any difference if you wanted to ascertain their wealth or their annual income ?

A.—Certainly, you can have an idea of the individual wealth but you can have no idea of the total wealth of the country.

Q.—The total wealth of the country is quite different but as regards individual wealth, we have to ascertain the economic condition of the individuals, and for that purpose we shall have to bear certain points in mind. Whatever those points may be, we shall have to make the enquiry from the individuals. Do you want to take the rent circle as the unit of investigation ?

A.—Yes, so long as your object is to find out the economic condition of the classes.

Q.—Suppose we want to ascertain the total wealth of India, then for that purpose, do we want rent circles ?

A.—Certainly not. You will have the total wealth worked out for all the villages in India.

Q.—For the whole of India at once ?

A.—If you wanted to have an idea of the total wealth of India, I would first of all start with villages. We have figures about industries, and they can be easily worked out. Then I would pass on to the value of the landed property, and then to the value of the Government buildings.

Q.—From the village to the district and from the district to the province. Further on you suggest making use of the co-operative societies where they exist. It is easy to select your typical villages, but where there is no co-operative society, how would you select your typical villages for the purpose of enquiry ?

A.—People should be divided into classes and then for each class enquiry should be made for, at the most, 10 per cent. of the people belonging to that class.

Q.—How would you have an idea as to what percentage of the selected typical villages have co-operative societies ?

A.—It is a very small percentage. I could not tell you definitely at present. I would do that by local enquiries.

Q.—Then, as regards the economic circles, you do not approve of Mr. Datta's classification, neither can you tell us of the improvements you would make ?

A.—I prefer Sir Edward Gait's.

Q.—What improvements would you make ?

A.—I may have to divide some of his circles into sub-circles.

Mr. Kaul.—Q.—I am glad to see that you do not reject the *patwari* altogether. Do you think that if there is more supervision, the present machinery would work ?

A.—That is my idea.

Q.—Have you any experience as to the work done by the *patwaris* and *kanungos* ? If so, in what connection ?

A.—My father is a landlord and besides that, a number of my family people are serving as *tahsildars* and *kanungos*.

Q.—Are they good for nothing ?

A.—They are only average men.

Q.—But the picture you have drawn is very poor ?

A.—I cannot say that.

Q.—In the Famine Code they definitely say that *tahsildars* report to the Collector who submits the report to the Revenue Board, and the *tahsildar* gets his information from the *patwari*.

A.—I have found from time to time that the District Magistrates and the higher revenue authorities do not know whether scarcity has begun in certain tracts.

Q.—I can quite believe that, and yet their returns may be perfectly correct. The subordinates lack initiative. They are afraid of reporting, although their returns may be quite correct.

A.—I do not think that they are afraid. My personal idea is this that if they do not give reports of a scarcity the senior officers would be pleased.

Q.—They do not want to take the initiative ?

A.—Whatever it may be, the fact is there.

Q.—Lack of initiative ? That does not detract from the value of the returns. He lacks initiative as regards making a certain report but his work is not defective.

A.—Sometimes he does not care how he makes his returns.

Q.—His returns are based on the *patwari's*. The *tahsildar* is supposed to tour for 15 days in a month.

A.—Here in the United Provinces the *tahsildar* has to tour for only $1\frac{1}{2}$ months in the whole year. We have *tahsils* divided into *pargannas*, but it is not the duty of the *tahsildar* to go to any village even once a year.

Q.—There are two things—one is the estimate of the crop on an individual field. The *patwari* goes round and sees it and estimates it as a 16, 14 or 10 anna crop. There is another thing—that is, the estimates of the yield of the *tahsil* or district. The first is made by the *patwari* and the second by the *tahsildar*. The *tahsildar* is supposed to make a report based on his own information which he collects while he goes round, and on the information he collects from his revenue subordinates, *i.e.*, from *zaildars* and other notables, and he reports this to the district officer. These people are supposed to build an estimate which they think will correctly represent the expected yield of the whole district. Then this return goes to the Director of Agriculture, who frames the estimates, for the whole province.

A.—Here, the practice is slightly different. Periodically the Agricultural Department makes estimates of standard yields for different classes of soil in a particular region and they are published. For other provinces we have got a report. In the harvest year or *fusli* year, the *patwari* submits a statement at different times to the effect that the expectation of the crop is so many annas.

Mr. Kaul.—*Q.*—Quite right. There are three crop forecasts—A, B and C forecasts ?

A.—Yes, the standard yield of a particular crop on a particular soil is taken at 16 annas. The *tahsildar* sends his report to the district officer.

Q.—How does the *tahsildar* collect information ?

A.—It is the *patwari's* report which gives him an idea.

Q.—Does the *kanungo* give his opinion about the *parganna* ?

A.—Yes. The *patwari's* reports are sent through the *kanungo*.

Q.—Does he not consult the *zaildars* ?

A.—We do not have *zaildars* here.

Q.—Are there any other officials of that status ?

A.—We have none here.

Q.—The *tahsildar* has to go on tour during the crop inspection ?

A.—*Naib tahsildars* and *kanungos* are supposed to check the results submitted by *patwaris*. The *tahsildar* is not supposed to tour during the crop season.

Q.—Who estimates for the *tahsil* ?

A.—It is not the *patwari* that estimates for the *tahsil*, but it is the *tahsildar* who is supposed to do so, on the information given to him by *naib tahsildars* and *kanungos*, and the *kanungo* bases his information on the *patwari's* estimates. The *patwari's* estimates are supposed to be checked by *kanungos*, *naib tahsildars* and *tahsildars*. There are half a dozen intermediate steps.

Q.—He lives in the village and he must be seeing the crops. Do you think that he does not inspect them at all ? He may be inspecting crops during the six weeks ?

A.—He goes out to one or two villages, and chiefly those near his house. The *patwari* submits his report and the *kanungo* passes it.

Q.—Then he does not go to the villages at all ?

A.—Sometimes he does.

Q.—Are you quite sure that he is sitting quiet in the villages ?

A.—Yes, I am quite sure. It is only for the last four or five years that the *kanungos* have been living in villages, but previously they used to be in *tahsils*.

Q.—How many *kanungos* are there in each *tahsil* ?

A.—Roughly speaking, three or four.

Q.—So many of them cannot sit at the headquarters of the *tahsils* ?

A.—Of course they don't. Their chief duty is only to inspect the work of the *patwaris*.

Q.—So far as the general condition of the harvest is concerned, you say it is not necessary to go from field to field.

A.—The work can be easily done at the house of the *patwari*.

Q.—But the *patwari* reports, in *khasra Girdawari*, the general condition of the crops, which is supposed to be checked by the *kanungo*, and it is that general condition, which the *naib tahsildar* or *tahsildar* is supposed to report. Do you mean to say that the *kanungo* gets the general idea from the *patwari* ?

A.—Yes, I think so.

Q.—Does he not check the field-to-field inspection on which the forecasts are based, and are they quite so unreliable, as you seem to think ?

A.—No. I never say that they are quite unreliable. What I say is this that there is plenty of room for further improvement.

Professor Burnett-Hurst.—Q.—In answer to question 36, dealing with the Census of Production of large industrial establishments, you advocate the omission of certain information, *viz.*, that relating to the value of the raw materials used, wages and salaries.

A.—Not wages and salaries.

Q.—Horse power and kind of engine, quantity and value of raw materials either purchased or used, cost of fuel, light and power and miscellaneous expenses. If you exclude these, how would you ascertain the net product of industry ?

A.—If we can find out the total production and not go into all minor details, and if we find out the amount of depreciation, then we can get an idea of the net production.

Q.—Do you not think that as the raw materials used, that is, the raw materials produced in the country, are taken into consideration in the agricultural statistics, there will be duplication and it will not be possible to ascertain the net product, unless the value of the raw material is deducted ? I am only pointing out to you that by obtaining the total production alone, you will be unable to ascertain the net production of the industry. Questions regarding raw materials, etc., are included in the censuses of other countries.

A.—Yes, it is true. I have to revise my idea of the quantity of raw materials, but all these details are unnecessary.

Q.—You would presumably be consuming Indian coal.

A.—You may get your coal from South Africa.

Q.—You may obtain it in India. In order to avoid duplication, you will have to take into consideration the value of the coal used to arrive at the net production of the industries. The Census of Production is quite distinct from annual statistics of production.

A.—I believe that the initial Census of Production is the best for comparison.

Q.—To frame an estimate of the total income of India ?

A.—Yes, you will have to do so.

Q.—Then you suggest that, for the Census of Production, a provincial statistical organisation would be useful ?

A.—I would prefer a central statistical organisation for this purpose, as well as to sum-up the results. If the enquiry is to be carried out by provincial organisations, there would be a likelihood, on the part of the owners of the concerns, to feel suspicious that their figures might get out locally. If they send the figures to a central organisation, miles away, they will have no suspicion.

Q.—In order to minimise the leakage as far as possible, would it not be best for the returns to be sent direct to some central organisation, even though it may mean heavier work for that body ?

A.—But you should have some head in the province. The provincial organisations will have greater facilities, and in my opinion they will be better.

Q.—Even though there may be some leakage ?

A.—I am prepared to give the provincial organisations credit for keeping the return secret.

Q.—Suppose there is only one mill engaged in the production of a particular commodity in a province ; if information is published, that mill would be immediately identified. In such cases, I presume you would approve of all-India figures being published rather than figures for each province.

A.—If you have only one mill, then it would be very easy to identify it. Only all-India figures should be given in order to avoid leakage.

Q.—In your answer to question No. 12, you state that ' as long as we know the number of cattle, we can deduce from that the quantity of milk produced '. Would it not be necessary to find out the quantity of butter, curd and cheese, because all these are produced from milk ?

A.—No. As all these are products from milk and if we have counted the value of milk the value of all these will have been accounted for.

Q.—Assuming that you have collected all-India figures for butter, curd, etc., how would you ascertain the quantity of milk consumed as milk ?

A.—Take the case of the United Provinces. We have different breeds of cows. For each class of cow it is possible to find out the daily yield of milk, and from that we shall be able to calculate the total quantity of milk given by each cow. I do not know what other methods can be adopted.

Q.—Do you think that if you ask a family to tell you the exact quantity of milk produced, you will secure the information for a specified period of time ?

A.—They can tell you how much it is per day, and my impression is that they generally give you the exact quantity of milk produced.

Q.—You would have to ascertain the length of the period that the animal is dry ?

A.—The period can be ascertained.

Q.—You think that, on such a basis, you can frame an estimate for the whole year ?

A.—That could be done.

Q.—Would not that be rather a rough estimate ?

A.—In any case, it would be a rough estimate. Besides, the house-to-house method would take a very long time.

Q.—In order to ascertain the value of milk would you multiply the quantity by its price in particular villages, and so build up a figure for India as a whole ?

A.—Certainly, you would not take the value of milk in the cities, because in a place like Calcutta, it is selling by seers per rupee. We will have to arrive at some average figure for the whole of India.

Q.—Would you ascertain the value of milk produced in each village ?

A.—That I think would be a better method.

Q.—If you are carrying out an intensive study ?

A.—Then I would take the prices prevailing in the village.

Q.—How would you overcome the difficulty of ascertaining the quantity of water mixed with milk ?

A.—I really cannot tell you. This is only true of the cities, but cities form a very small part of the country.

Q.—Nevertheless, this is a difficulty which will arise ?

A.—Yes, it will arise.

Q.—In your answers to questions Nos. 38 and 39, dealing with the suggested Census of Industrial Production, you say that it is desirable to collect data about cottage industries, but that we should ask for information only under certain heads. You exclude the quantity and value of raw materials used.

A.—There again you will have to take that into account.

Q.—How would you proceed to obtain the information about cottage industries ? You say that in urban areas, the information should be procured from municipalities.

A.—Yes. Every municipality has a certain number of tax collectors going from house to house.

Q.—You consider the collectors should be employed to obtain information relating to cottage industries in towns ?

A.—We should not depend entirely on them but we should utilise their services.

Q.—Would not the people say that they are enquiring for purposes of taxation ?

A.—Not if these tax collectors are placed in the charge of energetic persons who have character.

Q.—Would you not regard the tax collectors as unsuitable people ?

A.—They are in the habit of collecting information. They have the knack of eliciting information from the people. There ought to be some one at the head of the organisation.

Q.—The tax collectors will have to visit individual households. Would not the householders consider that the collectors had come for the purpose of increasing taxation ?

A.—They will have to be assured that it is not for that purpose. Somebody else might assure them.

Q.—You think that every tax collector should be accompanied by some one who should explain the object of the enquiry and leave the details to be obtained by the collectors ?

A.—If you can procure some other agency, I think it should be utilised.

Q.—Do you think the Municipal Boards will be prepared to undertake this work ?

A.—Yes, provided they are not asked to incur any cost. In rural areas I think it should be compiled by subordinate officers. I think the *patwari* or *mukhiya* should be utilised for these purposes. There are two or three agencies in the village—the *zemindar*, you might utilise his agency, if he resides in the village. We have *mukhiyas* who are liked by the people ; and the *patwari*. Personally, I would like the *patwaris* for revenue returns. We might utilise the services of *mukhiyas*, so that we may check the information supplied by these people.

Q.—If the *patwari* has to collect information, not only about agricultural production, but also about income and various other details regarding families and also the details of the production of persons engaged in cottage industries, do you not think that he would be over-worked ?

A.—I never recommended that the *patwari* should collect income figures. I recommended him for collecting agricultural returns and production of cottage industries ; nothing else.

Q.—Do you want to take all these subjects into account for the intensive village studies ?

A.—Personally. I am not really for an intensive study.

Q.—What do you want then ?

A.—You do not want to have the wealth of the country in order to find out the economic condition of the people.

Q.—Do you not want any information about income at all ?

A.—I would like to have a general idea about the income of classes.

Q.—How would you obtain a general idea ?

A.—What I would suggest is this. You have your economic units. From the existing records we can find out the number of cultivators. We

could divide these cultivators into classes. We could divide them into 'occupancy tenants', 'non-occupancy tenants', 'carpenters', 'blacksmiths', 'potters' and so on. And for these different classes, I would have sample budgets, say, 10 per cent., or any other percentage that may be considered necessary.

Q.—Would your enquiry terminate after collecting sample budgets ?

A.—Yes ; sample budgets so far as income is concerned.

Q.—Are you in favour of an enquiry into income ? Whom would you employ for collecting the information ?

A.—As I have suggested previously, I would have a board of enquiry, consisting of three members ; the *zemindar*, the landholder and any other leading man. Then we should have some strong man who can direct these people to carry out enquiries in the villages.

Q.—You regard these persons as untrained men ?

A.—They are not trained.

Q.—Do you think they will be able to collect information for family budgets, which is a very difficult matter even for a trained man to ascertain ?

A.—My idea is that we should utilise them for this purpose. I do not think we have even a sufficient number of students who come to economic classes. We must utilise some agency, and I really think we cannot get hold of a better agency. If we can get hold of some *zemindars* and *patwaris* and some other leading men, we could supply them with an elaborate questionnaire and the methods by which they should ask for information. They will have to undergo some sort of training. They need not undergo any long training. Two or three days would be sufficient.

Q.—Do you think they will be able to obtain accurate information ?

A.—Yes, if they go round the village and collect information for one year.

Q.—Is it your idea that this committee of three men should remain in a village throughout a year to collect the information ?

A.—The information should be collected for the past year.

Q.—Do you think they will be able to ascertain the family budgets for a year ?

A.—Yes.

Q.—If I asked you to give me the budget of your family for one year, would you be able to do so ?

A.—I could find out the expenditure and income.

Q.—May I remind you that in the village study that you have made there are certain statements with regard to securing information from villagers. Referring to the payment of rents in money and by other means, and the share taken by the Government and the share left with the *zemindar*, you state "most of the villagers do not like to answer questions of this kind, and if they feel inclined to do so, their answers may or may not be reliable. Only a few men give answers to the best of their knowledge".

A.—That refers to the percentage of net government revenue and the net yield of the farmer, but you were asking me to find out the total income of the cultivator.

Q.—Do you think that from the percentage taken by the Government, you would be able to ascertain the total income of the family ?

A.—The difficulty lies in what percentage the government takes. People fear that if the percentage taken by the Government is low, they will try to take more.

Q.—Do you think the people will include all the items which comprise their income ? There are a number of minor items which, when taken separately are insignificant but, when taken together, are appreciable.

A.—That all depends upon the man who makes the enquiries, and also upon the questionnaire that you give him.

Q.—Assuming there is a very elaborate questionnaire, it will still depend upon the man you employ whether successful results will be obtained or not ?

A.—Yes.

Q.—You may happen to obtain reliable figures, and at the same time you may happen to secure unreliable figures if the wrong type of man is employed ?

A.—Certainly.

Q.—You referred to wages and wage payments in kind. How would you convert payments in kind into money value ? Who would convert them ?

A.—The man who is carrying out the economic enquiry.

Q.—That is, your Board ?

A.—Yes.

Q.—You are leaving it to your Board of three persons. Then again, the data may or may not be reliable.

A.—I think, as regards the prices, every one knows what the price of wheat and barely in the village is. There could not be much chance of error.

Q.—Much would depend upon the time at which you carry out the enquiry. If you enquire at harvest time, the prices would be very low. If you did it later, it is quite possible that the prices would be higher. When would you make your enquiry ?

A.—Sometime after early winter, that is, after sowing has been done.

Q.—If you are not able to complete your enquiry, would you extend it for any length of time ?

A.—We may supply them with prices prevailing in the district.

Q.—You would take the district prices instead ?

A.—Is there any objection to taking the district prices ?

Q.—That might be taken into consideration. In such cases, how would you arrive at the average ?

A.—I am quite at home in taking averages.

Q.—Would you leave all these difficulties to the trained man ?

A.—Yes.

Q.—In calculating wages in rural areas, you state that you are not in favour of including the rents of dwellings.

A.—We do not have the system of rents in villages. My experience is, however, limited to the United Provinces.

Q.—In this respect, would you make any comparisons with the economic conditions in other countries where agriculturists have to pay rent for their dwellings ?

A.—I do not think there is any necessity to carry out comparisons.

Q.—It is stated that one of the objects of the enquiry should be to collect facts so that one can draw comparisons with other countries.

A.—Nobody has so far disagreed that India is poor. The degree of poverty is a question.

Q.—Do you mean India or the rural population of India ?

A.—The rural population of India is very poor. Their standard of living is very low. So long as we can do something to relieve them, there is no need to make comparisons.

Q.—The main object of the enquiry should be to ascertain facts with a view to the amelioration of the conditions of the people ?

A.—Yes, it will be necessary to find out what classes come within the taxation limit.

Q.—We have no such objects. What we want is to consider the feasibility, the desirability and the method of carrying out an enquiry.

A.—But it is clearly laid down in the terms of reference.

Q.—Would you collect family budgets from the middle classes ?

A.—I do not know what the definition of the ' middle class ' will be.

Q.—You would not select your class in the first instance, but you would make the survey and pick out typical families ?

A.—In certain villages I would put the occupancy tenants having twenty bigas of land in one class and non-occupancy tenants in another.

Q.—Would you include landlords ?

A.—Landlords will form a class by themselves.

Q.—Would you include *bantias* ?

A.—They fairly represent a class by themselves.

Q.—If you ask a *bantia* for his family budget, do you think he would give it to you so far as income is concerned ?

A.—Every *bantia* keeps accounts. He does so, because he lends money to other people. He will not show you the accounts very readily, but you must somehow or other compel him to show his accounts.

Q.—Do you want to compel people by legal powers ?

A.—People should be compelled.

Q.—Do you not think it would be most unpopular if a measure of that kind—to compel people to disclose their income—is carried out ?

A.—Compulsion is always unpleasant.

Q.—Is it not a fact that these money-lenders keep, not one set of books, but four sets ; one for themselves, one for their creditors, one for their debtors, and one for the income-tax officer ?

A.—Yes, they do.

Q.—In view of that, would it not be likely that a money-lender would use those very books when an investigator visits him to collect information ?

A.—He may.

Q.—So you are not sure of obtaining reliable information from these classes ?

A.—No, we cannot be sure.

DR. SHAFAT AHMAD KHAN, M.L.C., LITT. D.

Written statement.

I regret I cannot write a detailed and exhaustive memorandum on some of the points raised by the questionnaire in the Economic Committee. I should have been very pleased, indeed, to embody the results of my experience and study, but the time at my disposal was too short to enable me to do justice to the matter. However, I should like to jot down here a few of the problems which in my opinion need investigation. I did not grasp the necessity of an enquiry into the economic condition of the country until I went to Madras. During the tenure of my office as Assistant Professor of Indian Economics in the University of Madras, I came into contact with people of all classes—merchants, tradesmen, landholders, Government officials, journalists and representatives of various communities. I may add that I worked under Dr. Gilbert Slater, who was University Professor of Economics in the years 1920-21, and my work with students of the University gave me an insight into the economic problems of the various strata of society. The department of economics had organised with a view to the prosecution of researches into some of the economic problems of the Madras Presidency. The results of the investigations were embodied in a work called "Some South Indian Villages". I presume the members of the Committee have read that book. I carried on the researches for some time with my students, but I was called to the University of Allahabad only nine months after my appointment in the Madras University and the work was consequently left incomplete.

I can speak with first-hand knowledge of a part of this Province as I represent two lakhs of the rural population of Moradabad, a district in the United Provinces, in the United Provinces Legislative Council. I am not quite sure, but I believe there are more than 500 villages in my constituency.

The problem that seems to me to call for enquiry is the problem of indebtedness. I have been greatly impressed by the miserable condition of a very large number of my constituents. I should go further and say that wherever I went I found two miseries flourishing in nearly every village—litigation and indebtedness. I have been asked by a very large number of my constituents to bring in a measure for the relief of debtors. It is difficult to state with mathematical accuracy the percentage of the rural population who are in debt, but I shall not be exaggerating when I say that 80 per cent. of the peasants are in debt. I do not remember where any enquiry has been made by the Government into this problem, but I believe that Lord Dufferin instituted an enquiry into the economic condition of the people in 1887. In some of the works, for instance, "Digby's Prosperous India", there are copious extracts from some of the reports made in connection with this enquiry. I think it is necessary that an enquiry should be instituted into the extent of indebtedness in this Province. I asked a series of questions in the local Legislative Council requesting the Government to collect some material with regard to indebtedness. But the Government expressed its inability to do so. I believe it would be possible to collect information of a sort through the High Court. The High Court should be requested to indicate in its annual report of civil

cases the number of suits instituted for recovery of debt. Moreover, the co-operative credit societies could also furnish information. Moreover, under the Usurious Loans Act of 1918, the court can fix a "reasonable" rate of interest. It will be difficult, no doubt, to find out in how many cases this Act has been utilised, but circulars should, in my opinion, be sent to all the district courts to collect information on this point. To my mind, nothing is of greater importance to the rayat than freedom from the clutches of money-lenders and I am strongly of the opinion that it is essential to curb the propensities of the Mahajans. Every country in Europe has gone through the same experience, and every country has been obliged to devise measures against this evil. The writings of Sir Frederick Nicholson, late Director of Fisheries, Madras, a number of monographs by leading European writers bring this out clearly enough. I believe that registration of money-lenders will do some good, though I am not such a believer in its efficacy as people in the Punjab. If it is properly used, it will undoubtedly prove a boon to many a miserable rayat. This is not a remedy, however, it is merely a palliative. The remedy lies in the extension of principle of co-operative credit. Unless and until co-operative credit takes a firm hold in India, the peasant will remain the slave of the Mahajan.

The next great problem which I should like this Committee to tackle is that of fragmentation of agricultural holdings. Fragmentation is a veritable curse to India and in my opinion measures should be adopted for its removal. I drew the attention of the Government to this in a speech in the United Provinces Legislative Council, in March 1924. The Report of a Special Officer who had been appointed to enquire into this was also published last year. That the problem is serious, will be evident to anyone who has toured through any part of the Province. The holdings of a number of tenants are uneconomic, and they find it difficult to keep body and soul together. The miserable bits of land which they cultivate are a positive hindrance to reform in agriculture. I should like this Committee to organise enquiries into typical tracts, and to work in conjunction with the Department of Co-operative Credit Societies, Department of Agriculture, and the Revenue Department. The Oudh Rent Act of 1921 contains a provision with regard to this, and there is a clause in the Agra Tenancy Bill which will be introduced this year in the Council.

Organisation.

In an enquiry of such a nature it is necessary to gain the confidence of the public and I would suggest that the village should be the unit of the work. In the village the *Mukhiya* might be associated with 3 or 4 men belonging to the various sections of the village, such as the occupancy tenants, zamindars, etc. If the Panchayat Act could be worked in this Province the Panchayats could be used for this purpose. Above the village is the town. In the town I should also have a committee consisting of representatives of the Municipal Board if any; and above the town is the city or district station. This will be the headquarters of the district. In the district I should like to see an expert associated with representatives of the Municipal Board and the District Board. If the expert is not given adequate powers for the purpose, I should like to see the collector associated with the enquiry. My object in associating the Collector is that he wields enormous powers. I am against officialising this enquiry, and once the

people have an idea that the Government is actively interested in it they will avoid it like a plague. Its action is liable to be misrepresented.

After that the most practicable scheme is the establishment of a Labour Office or Bureau which will organise an enquiry of this character. It must be given wide powers by Law. It is necessary that the enquiry should be done by experts, otherwise I fear it might be utilised by various political parties for propaganda purposes. This is a danger which we must guard against. Hence, to my mind, the success of the enquiry depends on the employment of experts. I need not detail the functions of this Bureau. It will perform many of the functions which are performed at the present by the Bombay Labour Office. It will have an expert in every district who will organise the enquiry in that district in co-operation with the non-official representatives. If the proposed Bureau is given wide powers by statute then I should not have the Collector at all on the District Committee.

To my mind the problems that need solution are the problems connected with indebtedness and fragmentation of holdings, and I hope the Committee will decide to organise an enquiry on scientific lines into these problems.

— — — — —

Oral evidence, the 8th April 1925.

Chairman.—Q.—Perhaps you will give us a note later on. In what particular aspect of economics are you interested ?

A.—I was Assistant Professor of Economics in the Madras University in 1920-21, and have studied rural economics. I have come into touch with the people in rural areas. I represent about 1½ lakhs of rural population in the United Provinces Legislative Council, and have personal knowledge of the people I represent.

Q.—Talking as a member of the Legislative Council, what aspects of the economic condition of the people of this province would you like to investigate ?

A.—I should like to get reliable scientific data for the study of the problem of the indebtedness of the peasantry. That in my opinion is a most important problem. The thing the people desire most is some sort of relief from usury. They have expressly asked me to do something in the Legislative Council in order that they might be relieved from this crushing yoke of indebtedness, which hangs like Damocles' sword over their heads.

Q.—What other aspects of the problem would you as an economist wish to investigate in the province ; what other aspects regarding the production of the country ?

A.—I would take the economic condition of the different classes of the rural population. The standard of the occupancy tenant is higher than that of a non-occupancy tenant. Again you have the petty *zamindar* and the large *zamindar*. I should like to get the normal income of various classes of the rural population investigated, and obtain accurate figures which will throw light on the standard of living, etc., of these classes.

Mr. Kaul.—Q.—What classes do you want in the rural areas ?

A.—The big *zamindar*, the small *zamindar*, the occupancy tenant, and the non-occupancy tenant.

Q.—Would you divide them ?

A.—I would not like to make minute subdivisions for the present.

Q.—How would you differentiate them ? How would you distinguish between big and small *zamindars* ?

A.—That is, of course, only a question of degree ; and I would use for this purpose the test of *malguzari*.

Q.—How much would be the limit for a small *zamindar* and big *zamindar* ?

A.—I would include under the term ' small *zamindar* ' those paying revenue of about Rs. 5,000 a year, and the rest under the term ' big *zamindar* '.

Q.—How would you grade them ?

A.—We should grade them by the amount of revenue they pay. A person paying a revenue of Rs. 12,000 a year may be called a big *zamindar*. I do not include the rent-free grantee in this.

Q.—And a small *zamindar* ?

A.—A person paying from Rs. 2,000 to Rs. 3,000 a year.

Q.—Anybody below that ?

A.—May be included under a ' small *zamindar* '.

Chairman.—Q.—What information as to the economic condition of the people would be of value to the village people. You know that in some countries the villagers collect all the information about income and production, and then, from the inferences they draw, they build up their future. Now, do you think there is any prospect of the people here studying statistics and trying to shape their future ? Would it not be desirable to teach them ?

A.—Yes. I think it would be extremely desirable. Another problem which is vital to my mind, and which I regard as the most serious problem, is the question of fragmentation of holdings. Very few do know to what straits some of the peasants are put owing to the fragmentation of holdings. Fragmentation of holdings is second to indebtedness. I may mention here that I brought this to the notice of the Council last year. I suggested that the Co-operative Department and the Department of Agriculture and Revenue should work in conjunction, as is being done in the Punjab, and make investigations into the fragmentation of holdings. Mr. Calvert has mentioned this in his book. I may also mention that in the Oudh Rent Act which was passed in 1921, provision was made with a view to facilitate the consolidation of holdings. The Agra Tenancy Bill which will come up before the Legislative Council this year also contains such a provision.

Mr. Kaul.—Q.—What sort of enquiry would you like to hold as regards the fragmentation of holdings ?

A.—I would collect data as regards the size of holdings.

Q.—You know the total area of the village and the total number of holdings.

A.—We want individual cases.

Q.—How would you suggest that the data should be collected ?

A.—Personally, I think the Department of Agriculture should render us help in this matter.

Q.—Attempting to consolidate the holdings is one thing and collecting information to show where fragmentation is taking place and where consolidation of holdings is necessary, is another. We are concerned with the latter.

A.—I think the evil is prevalent in practically every district. Last year when I raised this point, the Junior Member of the Board of Revenue said that this had been started on a limited scale in some of the estates under the Court of Wards, and that some information had been collected. We were also informed that a special officer had been appointed by Government to investigate this problem and his report came out about six or eight months ago, showing what he had done.

Q.—The point is, how can this be done by an intensive enquiry? Can we make a general enquiry? Can you make any suggestions so that the facts may be collected and placed before the people with a view to enlightening them as to their conditions?

A.—Yes, I think the Board of Revenue, the Department of Agriculture and the Department of Co-operative Societies should take it up.

Q.—Have you any other suggestions?

A.—I have no other suggestions. I should like to make it clear that I do not think the Collector should be given power to compel the *zamindar* or tenant to consolidate his holding. This is fraught with abuse, and it should be voluntary at present.

Chairman.—Q.—You said that statistics should be collected about indebtedness and fragmentation of holdings and a remedy should be found for it. What is the area of the smallest holding in your province that has come to your notice?

A.—In some cases I have come across holdings the size of which does not exceed an acre and a half; and in some, where it is less than an acre.

Q.—What other information would you collect in rural areas?

A.—I should like to collect information with regard to the wages of various classes of workers in villages. The main difficulty is regarding the agency to be employed.

Q.—Let us first finish the heads 'wages', 'agricultural production' and 'industrial production'.

A.—Yes, 'wages' is one of the most important things. We should collect information regarding the wages of the village artisans and of persons who follow other occupations in the villages.

Q.—What agency would you employ?

A.—As regards agency I have been considering the question. In the first place, it cannot be purely official; on the other hand it cannot be a purely non-official agency. You cannot do the work at all without some system where the officials and non-officials can co-operate. If the agency is purely official, the people will be very suspicious and will rarely give any information. I know it from my own experience. If a small *panchayat* is used for the purpose, it may be able to dispel suspicion, and convince

the people that it is for their benefit. Then again, non-officials cannot do it without some help by the officials. They will be handicapped because they will have no power which an official, say, the Collector, possesses, so there must be co-operation between the two. I should suggest the appointment of an advisory committee for each district which should consist of some of the members of the Municipal Committees, District Boards and the Legislative Council. I must make it clear that I do not desire a preponderance of officials. One official will do. If a Bureau of Statistics is established in each province, and it is invested with adequate powers, there would be no need for any district official.

Mr. Kaul.—*Q.*—Are you talking of rural areas ?

A.—I am talking of the agency which is to be employed.

Q.—For the district ?

A.—Yes. I am taking the district as the unit.

Chairman.—*Q.*—But I think you agree that in a district there are three units ; city, town and village. If you take stock of these three classes of areas, then you have information for the whole district. For each of these units what agency would you employ ? For the whole district you have a census office which will submit its returns to the central office, while all the village units will submit their returns to the district office. Kindly tell us what agency you will employ and what information the returns should usually give ?

A.—I would start with the village. The headquarters of the district will be the centre of the enquiry, but you should start with a village, and in the village I would utilise the services of the *mukhiya*.

Q.—You cannot do without him ?

A.—No. I would also obtain the services of some of the *zamindars*. The *patwari* also must be associated ; you cannot do without him. I should also have some of the influential tenants.

Q.—Some intelligent men ?

A.—Yes. We have applied the Panchayat Act recently in some of the districts of the United Provinces.

Mr. Kaul.—*Q.*—Have you any idea as to the number of villages in which *panchayats* have been established ?

A.—Relatively to the population, very few villages have *panchayats*, but the *panchayat* is a most promising institution, and, if properly worked, will revolutionise our rural society. If the *panchayats* were developed, they would prove exceedingly useful for this purpose.

Chairman.—*Q.*—What about the services of the *patwari* ?

A.—In the absence of a *panchayat* I would use the services of the *patwari*, the *patel* or headman of the village and some *zamindars*.

Q.—These will form a sort of committee ?

A.—Yes. Then we come to the town. In the town we should have the *zamindar* and the *kanungo*.

Mr. Kaul.—*Q.*—Have you not municipal committees in the towns ?

A.—In some cases we have towns which do not reach that standard of population.

Chairman.—*Q.*—In towns where there are no municipalities, what would you do ?

A.—There I would take one or two tradesmen.

Q.—And in towns which have municipal committees ?

A.—I should have municipal commissioners to help. Now, coming to the headquarters of the district, there the Collector or some other person who possesses adequate power should be associated with the committee. I have no hesitation at all in saying that without the influence of an official things cannot be managed, but the majority must be non-officials. If, however, as suggested by me, a provincial Bureau of Statistics is organised, then there will be no need of an official.

Q.—The Collector will guide the policy ?

A.—Yes, with the help of expert statisticians. Also, I think the members of the Municipal Committee and of the local Legislative Council should be associated. There should be the members of the District Board also.

Q.—These gentlemen will have so many other occupations that they may not find the time, and they will simply come and fill the chairs.

A.—The mere fact that these gentlemen are associated with the committee will dispel all suspicion. For instance, in 1888, an enquiry was held by Lord Dufferin, and it was conducted in secret. The material collected was not by any means exhaustive, but the point is that even that material would not have been forthcoming if the people had been informed of the enquiry. It was never published, though extracts have been published in various works. If suspicion arises in connection with an official enquiry, the work is rendered impossible.

Q.—Would not a municipality, such as Allahabad, say that they have been treated more like children when compared with outlying municipalities, in that they are not entrusted with this kind of work ?

A.—Frankly, I do not think the Municipal Boards could do this kind, without some expert advice, and official help. We will do this for their own benefit. We must have the municipality's representatives. According to my scheme, the headquarters committees should have representatives of the whole district and not only of municipalities.

Q.—Kindly tell us what should be the agency for cities ?

A.—I am against the enquiry being handed over completely to local boards. Some experts must be associated therewith. They have not got special knowledge.

Q.—You have to prepare them for the purpose.

A.—They will not have the necessary power. If only a few of the members have been associated with Government, that will be good.

Q.—There may be some difficulty in the beginning.

A.—In my opinion, the work of the committee in the city or in the town will be guided to a very large extent by trained men who will be educated and trained by University Departments. I hope you will not mind my saying that officials alone cannot carry on the work. If you take only officials, they would look on it as a departmental job and would

have a little initiative. You should entrust the work to those who have specialised and taken a good class in economics, in their B.A. or M.A. degree. The man who is trained in this work and possesses adequate experience, is the man whose advice should be taken by the representative committee.

*Mr. Kaul.—Q.—*He will probably become a Government servant.

*A.—*I have not told you that he must be a Government servant. He might be deputed by the university or he might belong to some society.

*Chairman.—Q.—*After our stock-taking census shall we require a regular census staff ?

*A.—*I think it will be necessary.

*Q.—*What Mr. Kaul says is, would you not have graduates appointed to the regular census staff ?

*A.—*Yes, I would have no objection, but they must be permanently employed, and not dismissed when the census work is over.

*Mr. Kaul.—Q.—*We are trying to advise for the future.

*A.—*I suppose so. This work must be done by a type of man who cannot be manufactured to order. He must be well-trained ; he must know the locality well, and he must possess experience.

*Chairman.—Q.—*As regards the agency, what would you have ? You would not trust municipalities ?

*A.—*I would not hand the work over to the municipalities. I must see that other interests are also looked after. I would have one Government official, or, if a provincial Bureau of Statistics is organised, in his place, an expert statistician, who should be an *ex-officio* member of the proposed committee, and I would also have members of the corporation or municipality, by whatever name it is called. It must be a representative committee.

*Q.—*That is for the city and for the district as a whole, as you have already told us. Now can you tell me what would be the cost of a house-to-house census to collect all the information that you have in view ? Take a village of a 100 houses for the present.

*A.—*You mean a typical village ?

*Q.—*Roughly, how many villages would you take for the purpose of collecting information ?

*A.—*It depends upon the number of men employed.

*Q.—*How many families could one man deal with in a day ?

*A.—*I think if he wants to do it thoroughly, he cannot do more than ten houses in one day. That is my rough estimate.

*Q.—*Somebody said five houses.

*A.—*Yes, of course, if each house contains a large family.

*Q.—*And then, as to the cost of this enquiry, you suggest that the money should come from taxation. Would you ask the village to pay for it ? The money should come from the people themselves ?

*A.—*With regard to the municipalities, they may be asked to pay ; but not the whole amount. I would expect the Provincial Government also to contribute its share.

Mr. Kaul.—*Q.*—Except the supervision charges.

A.—I should certainly make them pay a substantial part, because the money derived from Land Revenue is mostly spent on urban areas, and the rural have no amenities of life, and very little is spent on the roads, education and sanitation of the villagers.

Chairman.—*Q.*—Village people cannot pay ?

A.—They do not want to pay and they have little to pay.

Q.—Why do you not get the money from them ? Why do you expect money for their benefit from outsiders ?

Mr. Kaul.—*Q.*—Can we get it from the Land Revenue ?

A.—I think the Government ought to pay a large part. I am convinced that the rural population is scandalously neglected. Part of the land revenue derived from a locality ought to be spent thereon. This is the principle on which the Americans act. They have no land-revenue system like ours, but they make a point of spending a large part of the yield from land values on the locality from which the duty on land value is levied. If the villagers are compelled to pay, they will avoid the enquiry like a plague.

Q.—Can you mention a few methods as to how you would collect the information in each city, town and village ?

**A.*—In the first place, in towns, I should like to investigate the problems connected with large-scale industries, especially the managing agency system. This system has developed industries remarkably.

Chairman.—*Q.*—You want to know whether there is a sufficiently large number of managing agents.

A.—I started this enquiry, though not on a very large scale, in Madras, but I could not find time to complete it. The second matter I should like investigated is the indebtedness of the villages. Here the *bahikkhates* of money-lenders in the village will be of use. Indebtedness is a growing evil, and I have met hundreds of my constituents and I can say that unless something is done in the near future to alleviate their lot, there will be a riot in many a village, like the Sonthal rebellion of Bengal, or the Maharattas riot against Marwaris in Bombay. I should like all money-lenders registered.

Mr. Kaul.—*Q.*—Do you want a Registration Bill ?

A.—Yes, I would like a Bill on the subject.

Q.—But can you suggest any way of bringing them down ?

A.—I will tell you. I have been trying to get information about money-lenders from various sources. I asked the Government authorities to let me have the figures as to how the Usurious Loans Act of 1918 was working in this Province ; but they could not give any information, as, of course, it is impossible to say. I think the reports of the High Courts of Judicature could also throw light on this subject, and supply information regarding suits filed for recovery of debt, etc. Then there are cases reported in the various Courts for debt, etc.

Q.—You mean you have been unable to find information which can be quoted ? Have you made any investigation with regard to the income per

head in this province, which was much talked about in the Legislative Assembly? What will it be per head?

A.—We have never talked about that in the Council. I think it is most difficult to calculate this. The various estimates framed by economists are pure guesses, and nothing else.

Q.—It is a very modest statement.

A.—It varies with the position of the class to which a person belongs, and I cannot give you off-hand a cut and dried answer. I have certainly thought of it, and I have also helped in getting family budgets compiled in Madras by some of my students. As to how far they can be relied upon for another province is difficult to say.

Mr. Kaul.—Q.—While on this question of income, would you mind looking at No. 63? What is your opinion as regards inclusion of some of the 'services' under 'income'?

A.—I received notice to give evidence only three days ago, and I could not study the numerous points raised in your questionnaire.

Q.—Would you mind looking at question No. 87, which gives a general sort of suggestion as to what the initial economic survey might include?

A.—I think, on the whole, I approve of it.

I think it gives all the information required.

Q.—Please see question 91—"With regard to question No. 87, Section II (c), (d), (e) and (f), should the enquiry be by intensive study..... or by merely recording answers to questions"?

A.—No; by intensive study.

Q.—You think that any general enquiry would be of any value?

A.—Personally, I should prefer an enquiry based upon individual study rather than an enquiry based upon the simple recruiting officers' principle.

Q.—Would you advise that these should be checked by intensive enquiries or by general enquiries?

A.—You must make intensive enquiries.

Chairman.—Q.—Would it not be possible to get the local agency to make the intensive study?

A.—You have various divisions in all the villages and in all the households. You take a village and select typical houses. There are various alternatives in every village, and it is desirable to collect the statistics in full.

Mr. Kaul.—Q.—Do you mind looking at question 93. In view of your opinion, just expressed, do you approve of an initial economic survey, and how long do you think it would take?

A.—Well, as regards this, if you want to have an intensive enquiry, we might be able to do it in about six months, if you employ a sufficiently large staff in every district.

Q.—How long will this enquiry take? Much less information has to be collected in the population census than in the census with which this question deals.

A.—It all depends upon the staff you will be able to get.

Q.—Would the staff be available ?

A.—Yes, if the money is forthcoming.

Q.—Can you give us an idea of the amount of money that will be needed ? The population census cost 14 lakhs.

A.—I would put this at 30 lakhs.

Mr. Kaul.—Q.—It is not much.

Prof. Burnett-Hurst.—Q.—You are to some extent acquainted with the enquiries conducted by Dr. Gilbert Slater ?

A.—Yes. I was associated with him in the Madras University.

Q.—Can you tell me the length of time taken in making each of those village studies ?

A.—I do not remember exactly what it was in each case. I believe it took a student about three months to write an account of his village, but in most cases it took longer.

Q.—In view of that, would you be able to carry out surveys in typical villages all over India in six months ?

A.—Yes, in six months provided you employed a large staff and paid them well, and provided you selected very few villages to begin with. If, on the other hand, you have a provincial Bureau of Statistics, then you could do the work much more thoroughly, and take in a number of villages for investigation. Then, of course, your enquiry will take much longer. But you must have a qualified staff.

Q.—What exactly do you mean by general enquiry ?

A.—I am referring only to extensive enquiry in only a few villages in each district. We should investigate the wages of the village artisans, and those of the village labourer.

Q.—That is to say, the number of artisans and their wages ?

A.—Yes.

Q.—Do you mean the wages of each individual ?

A.—The wages of each class of workers in the village.

Q.—The average rate ?

A.—Yes.

Q.—Do you think it would be of much use ?

A.—I think it would be fairly representative average.

Q.—What would you regard as a fairly representative average ?

A.—There are cases in which the people are, say, partly in villages and partly in factories adjoining the village, or, say, ten miles from the village.

Q.—We are dealing with a particular village.

A.—If you are dealing with a particular village, then I should have investigated the wages of each individual.

Q.—You want the wages of each worker, the number of artisans, what else ?

A.—I would like to know something about the indebtedness of each individual in the village.

Q.—And anything else ?

A.—Of course, the question of supplements to income, comes in here also, but I include that in the wages. I think that is all.

Q.—In your general enquiry, you would carry out studies into the number of artisans, the wages and supplementals of each worker, and the indebtedness of each individual ?

A.—Yes.

Q.—You leave out entirely the purely agricultural population—workers other than artisans.

A.—As I pointed out in my reply, I include workers of all classes—field worker, as well as artisan.

Q.—You would ascertain particulars for practically every one in the village ?

A.—Yes.

Q.—Would you not regard that as an intensive study, rather than a general enquiry ? If this is your general enquiry, what would be your intensive study ?

A.—It is an intensive enquiry. As regards the general enquiry you need not enquire into so many details.

Q.—In a general enquiry into what would you enquire ?

A.—All that you need enquire into is the question of wages of the various classes of workers in the village. That is all which you really need.

Mr. Kaul.—*Q.*—What about the cost of living ?

A.—The cost of living has to be ascertained.

Prof. Burnett-Hurst.—*Q.*—Would you also study the cost of living in your intensive study ?

A.—Yes.

Q.—It is rather essential to go into the details. A scheme of this nature breaks down in its details, unless we thresh them out.

A.—Mine is only tentative and provisional. As I said already, I had no time to go into it in detail.

Prof. Burnett-Hurst.—*Q.*—Your enquiry would deal with the wages of different classes of workers in the village and the cost of living in the village—that would be obtained from each village in India ?

A.—As I pointed out, this would be an intensive enquiry, and I would select only a few typical villages for investigation and not every village.

Q.—Do you realise the number of villages that there are in India ? Taking British territory alone, there are 500,000 villages.

A.—I know that it is a very difficult task, but as I have pointed out before, the enquiry will be limited to a few typical villages only.

Q.—We are talking of the general enquiry. What villages would you take ?

A.—I should take, say, ten villages, but I cannot answer and commit myself to any definite number.

Q.—I should be glad if you will outline it.

A.—I would rather not commit myself to any cut and dried scheme, at the present. I will content myself with saying that only a few villages should be selected at present.

Q.—Would you employ a large staff ?

A.—Yes.

Q.—In the census, they had to employ a very large staff. The greater part of that staff consisted of voluntary workers. You suggest that you could raise a staff provided you paid them ?

A.—I think there should be some paid workers, and some voluntary workers.

Q.—What type of men would you have for the paid workers ?

A.—I would have the paid workers at the headquarters of the district to direct operations. They would be able to guide the village workers and give them special training for a few weeks. Some of them might be persons who are willing to work voluntarily, and they may be trained in the work.

Mr. Kaul.—*Q.*—I was Census Superintendent and I had very great difficulty in training voluntary workers, even for one day.

Prof. Burnett-Hurst.—*Q.*—You mention that in villages, districts and cities, you want expert statisticians. From where will you get them ?

A.—I would get them from the University.

Q.—Do you consider that expert statisticians are produced by the University ?

A.—They can be trained by the University Departments of Economics.

Q.—You would have trained men ? You would not call them experts ?

A.—No.

Q.—Would you agree with the opinion of a witness who stated there were no such persons as coolies in the United Provinces ? Would you say, as a United Provinces' man representing lakhs of people, that there are coolies in the United Provinces or not ?

A.—I think you know that quite as well as I.

Q.—How would you define ' coolies ' ? Would you say that coolies are unskilled labourers ?

A.—I should place them under that category.

Q.—You would not consider them as skilled labourers ?

A.—Certainly not.

Q.—You do not mention at all that information relating to income and wealth should be ascertained. Are you of opinion that we should not endeavour to ascertain income ?

A.—I think it ought to be ascertained. We should include that as one of the items in our programme, in addition to wages.

Q.—What about wealth ?

A.—‘ Wealth ’ is a very comprehensive term.

Q.—Then we shall say, ‘ private wealth ’, and ‘ individual wealth ’.

A.—It would be rather difficult to ascertain this.

Q.—Would you be able to ascertain the quantity of jewellery and clothing possessed by people if you asked them ?

A.—We might do so, but I do not think the answers would be reliable.

Chairman.—*Q.*—Would the advisory committee be able to collect it ?

A.—Not in every case.

Prof. Burnett-Hurst.—*Q.*—Do you think you would be able to obtain reliable data ?

A.—I am not sure if I could.

Q.—Would you take their valuation of clothing or would you leave it to the investigator to find out ?

A.—I think the investigator should estimate it.

Q.—Would it be possible for him to do that if he is going to do ten houses in a day ?

A.—If the investigator knows the locality, and is conversant with the people, he ought to find no difficulty at all.

Q.—Do you not think that if intensive studies are to be done thoroughly the investigator should reside in a village and study it thoroughly ; or would you send a group of investigators periodically to the village in order to get a picture of the conditions during different times of the year, for instance, at harvest time and other times ?

A.—I would conduct the survey in this way ; I should have an assistant whom I would send to the village and expect him to live there for some time and take notes. He would go again the next season and take notes of important events which take place during that period, so that he might form a good idea of the condition of life in each village from one season to another. Then I would be able to have a picture of the life in the village.

Q.—If he visits the village for a week at one time and then again for a week later in the year, do you think he would have a good picture of the village ?

A.—I did not say for a week at one time, and for a week later in the year. The man selected for the work must be a man who knows the district thoroughly. I think he would get the information if he knows the village. It is no use keeping him confined to one village for a year. It would be most expensive.

Q.—If you are going to send him twice a year, would it not take longer than six months ?

A.—I did not say twice in the year. I said “ some time.” He might be there for a month all told, or for more or for less.

Q.—How would you select and determine a typical village ?

A.—That depends upon the points you obtain from the representative you send to the village. If you have fifteen villages and if one village reflects the special conditions of those villages, then you will say that village is a typical one.

Q.—Would you not study the other villages besides that particular village ?

A.—I would have a rough idea of the conditions prevailing in, say, fifteen villages, and as they will be uniform, and form a type, one village will be selected.

Q.—What do you mean by 'other villages' ? Do you mean all the villages in the district ?

A.—No ; I mean villages exhibiting the same general features as the "typical" village, which mirrors those villages. In logic, there is a term which is called "type". These villages will form a type.

Q.—That is to say, you would study all the villages in a tract ?

A.—I would divide the district into tracts exhibiting the same features, and one village will be selected from each tract.

Mr. Kaul.—Q.—There may be no village which reflects the conditions of all the villages in the tract ? Supposing the group consists either of very good villages or only of very bad villages, and there is no middling village ; how would you find out the typical village ?

A.—You can easily form a type of a "good" village, and a type of a "bad" village. You select a village which mirrors a good village, and a village which mirrors a "bad" village. It is a question of classification.

Q.—Then you would take more than one typical village ?

A.—The number of typical villages will depend firstly upon the number of tracts into which we divide the district and secondly upon the time and money at the disposal of the investigation.

Prof. Burnett-Hurst.—Q.—Suppose you select a typical village after making a general survey of all the villages and carry out your intensive studies in the village ; would the investigation not be open to objection ? If the results are bad, the Government will say that it is not a typical village, and if the results are good, the public will say that it is not a typical village.

A.—If the committee is composed of non-officials who inspire confidence, and is guided by an expert who knows his job, and is well-known in the locality, then the enquiry will prove more useful.

Q.—You consider that the committee should be a mixed committee of officials and non-officials, and that it should be financed by Government ?

A.—Yes. I think it should be financed substantially by the Government, and to a small extent by Municipal Boards but not by District Boards, as they are bankrupt.

Q.—Do you think that Municipal Boards are in a position to finance ?

A.—I think they will finance it, to a small extent, say, 10 per cent., if you explain the advantages that will accrue to them. I believe they might be called upon to pay not more than 10 per cent. of the expenditure.

Q.—I should very much like to have your further ideas with regard to ascertaining information under the Usurious Loans Act.

A.—It is difficult to get this information, as we do not know in how many cases this Act is availed of by the parties to a suit. The Government cannot collect this information. I am, however, collecting some information and hope to do something in the Legislative Council.

Mr. Koul.—Q.—You should approach High Court Judges.

A.—I do not think the High Court Judges can give us much information yet on the working of the Act of 1918.

Prof. GURMUKH SINGH, M.Sc. (Econ.), Bar-at-Law, Senior Professor and Head of the Department of Economics and Political Science, Benares Hindu University.

Oral evidence, the 8th April, 1925.

*Chairman.—Q.—*What have been your opportunities for studying the economic conditions of the people ?

*A.—*I have had no special opportunities of going to village or other areas to make enquiries on the spot. Whatever study I have made is from books, and I speak mainly as a theoretical man.

*Q.—*To what particular phases of economics have you given special attention ?

*A.—*Unfortunately, I have not been able to do any special study. I teach in a university where the staff is inadequate, and therefore it is not possible to take up special studies. I have been teaching Economic Theory, various branches of General Economics, Indian Economics, Indian Administration, various branches of Politics, etc.

*Q.—*For what examination do you prepare your students ?

*A.—*I am teaching all the University classes.

*Mr. Kaul.—Q.—*You are a University Professor ?

*A.—*My designation is not 'University Professor' but 'Senior Professor and Head of the Department of Economics and Politics' in the University.

*Chairman.—Q.—*We have been asked to prepare a scheme for the economic survey. Have you prepared a reply to the questionnaire ?

*A.—*I have not written out a reply as I had no time, and the questionnaire was received very late. If you will permit me, I will speak about every question serially. As regards the object of the enquiry as to the economic condition of the people, I think there should be three main objects :

The first is a supply of accurate economic information. At present, we find that we have very little information. The second purpose which I think will be served, is what we may call 'national'. It may be useful for the Government to know the condition of the people. The third purpose, which I think will be most important, is that it may serve as the basis of economic and social reconstruction of the country. I attach the greatest importance to the last. It is no good merely to state the *per capita* income. It does not give the economic student any useful idea to know exactly that the income is Rs. 30, 40 or 50 or whatever exact sum it may be. To my mind it is important to know the actual condition of the various classes of the people. Index figures would serve again as a basis of social reconstruction. We should have a detailed economic survey of the country. We should know exactly all about the industries, agricultural conditions, state of mining and large and cottage industries. We should have a thorough economic survey of the country. We should have information as to what are the various industries, what are the materials at present existing, what are the sources of power which are still not utilised, and how these sources can be utilised. If an enquiry is to be of any value, it ought to give information which will be useful to the people. So far,

one of the complaints of the general public has been that information is given in a form which is not useful.

*Mr. Kaul.—Q.—*We want your suggestions ?

*A.—*I will give you definite suggestions in detail. Now, I will take up the question of cost and organisation.

*Chairman.—Q.—*Tell me what are your tests for finding out the economic condition of the people. What tests would you adopt in a town, city and village in order to find out the income, production, wealth, etc. ?

*A.—*As regards Question 1, I would find out their productive capacity and also their consumption. I would try to find out, after knowing the production as well as consumption, whether they are living up to the standard or not.

*Prof. Burnett-Hurst.—Q.—*How would you determine that standard ?

*A.—*Well, there have been minimum standards adopted by some of the jail regulations and I would work it out on similar lines.

*Q.—*What standard would you take ?

*A.—*The minimum standard.

*Q.—*I am asking you what standard you would take up ?

*A.—*I have not definitely calculated it, but I would say, roughly speaking, the jail standards which are adopted by Government, which they consider to be fit after much experience and examination.

*Chairman.—Q.—*Would you say the poverty line is rupees 8 per head

*A.—*I do not know. I have divided people into a number of classes and I have classified certain people as living below the poverty line. Now, in the first question you have put down certain heads under which you propose to collect information regarding the condition of the people. I would like to collect information not only about the condition of the people but also about the condition of the country. There is a difference between the two. I would only add one more head to the six heads mentioned in the question—perhaps you may adopt it also in your enquiry—*viz.*, “nature of occupation and kind of work that the person may be doing”.

*Q.—*Have you studied the system of census and survey in other countries ?

*A.—*I have not made any regular studies.

*Q.—*These are from your general study ?

*A.—*Yes, these are from my general knowledge.

In the second question, you ask me what sort of classification I would recommend. I personally find that the classification adopted in the Census of 1921 was too detailed. I would suggest the classification given in Appendix A. First of all divide the country into rural and urban areas. I would only suggest one or two additions thereto. Whether you have included them or not I do not know.

Mr. Kaul.—Q.—I suppose you would like to apply the principle of the occupation classification, something more or less on the lines of Sir Edward Gait ?

A.—He has gone into details. I do not want all these detailed classes. Of course, when I come to the question of production, I would certainly want to know how many persons have been actually employed.

Q.—You would take labourers as a class, irrespective of whether they are skilled or unskilled ?

A.—I think you have divided the rural occupations into three groups. Similarly, you have got under 'industries' various small heads. I will keep them as they are.

Q.—And you would treat these classes as sub-heads to 'industries' ; for instance, 'transport', 'exploitation of minerals', 'plantations', 'forestry', 'public force' and so on ?

A.—I would suggest a fresh classification after you have done these. Divide the people into two classes, rural and urban. Divide rural into three classes—agricultural, pastoral and village, and divide each of these again into six or seven classes according to the income of each person in each class. This applies not only to agriculture but also to persons engaged in other industries as well. I have divided, roughly speaking, the incomes of persons into seven classes, that is to say, first—those with an income of about 1 lakh or more. Of course, I would call these very rich ; the second would be those with an income of Rs. 20,000, and above ; the third those earning from Rs. 5,000 to Rs. 20,000, which I would call the upper middle class. Then the 4th those earning from Rs. 2,000 to Rs. 5,000, which I would call the middle class. Then the lower middle class would be from Rs. 1,000 to Rs. 2,000. Lastly, under the sixth class 'poor', I would include those with an income of from Rs. 500 to Rs. 1,000.

Chairman.—Q.—Per family ?

A.—I have taken it per head.

Mr. Kaul.—Q.—What about those with incomes below Rs. 500 ?

A.—Yes, the last class, those below Rs. 500, which I would call 'very poor'.

Prof. Burnett-Hurst.—Q.—This is the income per annum, I suppose.

A.—Yes.

Mr. Kaul.—Q.—So that you would like us to adopt an entirely new classification, and then to sub-divide them by incomes. Our idea is to have these classifications as they are and then to sub-divide the numbers under each class. It may be possible later on for these censuses to synchronize with the population census but according to your advice we have to take a separate census of occupation ourselves.

A.—The occupation census may be taken along with the census of population, but you will have to group them afterwards. Otherwise, how would you classify the people ?

Prof. Burnett-Hurst.—*Q.*—May I interrupt for a minute? After having obtained the information as a result of enquiry, you can proceed to grade the classes according to their income as is customary in statistical publications; that is, the classification should not be primary but secondary classification?

A.—I am personally not acquainted with statistics, but I would like to know the condition of the various classes of the people of the country, so that I may be able to find out whether they earn incomes above the poverty line or not.

Q.—Are you not of opinion that the poverty line of a clerk is entirely different from that of a ryot?

A.—Well, I do admit that there are differences in the standard of living of the various classes.

Q.—There are certain clerks who are getting scandalously low wages yet they have to maintain a standard which is different from that of an unskilled labourer?

A.—That is so, but what I consider of greater importance to know is whether an individual is earning enough to maintain himself or not. Is he living above or below the poverty line?

Mr. Kaul.—*Q.*—So you consider that the income of each individual should be taken into account

A.—Well, I consider it necessary to determine the income of every class, because it may be necessary, as long as the income varies, that each class will have to be taken up for finding the income.

Chairman.—*Q.*—You want to know what percentage of the population is living above the poverty line?

A.—Yes; rather, how many are living below the poverty line?

Q.—Kindly go through the more important things which you wish to urge?

A.—First, I will come to the question of organisation. I have very rough ideas on the subject and have not worked out the details. I would first of all have a central department of census and statistics. Under the Central Department, I would have a provincial department of census and statistics. I would divide each province into economic circles, and for each economic circle I would have a small committee under the provincial department. Of course, these economic circles may be of different areas, sometimes they may be one city, sometimes a few villages and sometimes separate districts. It depends upon the similarity or otherwise of the economic characteristics that they may possess and it is those characteristics that should form the basis of the economic unit.

Q.—Who would find out the characteristics of an economic area?

A.—I would leave the question to the provincial departments. It is not possible for any single person to know the economic condition of even a single province in full detail; much less of the whole country. The persons best fitted to make this division are the Directors of Agriculture, Directors of Industries, the Registrars of Co-operative Societies or other officials or non-officials who have travelled in particular areas.

We will have to divide each province into economic circles. I attach a great deal of importance to this organisation. I would have one officer in charge of each circle who has been specially trained in economic survey, and I would like to have a committee under him consisting of six members—it may be seven or five—composed of officials and non-officials. I would divide each economic circle into local units of which the village may be one. These local units will be in charge of special officers who have been trained for that particular purpose. Then I would recommend that there should be a local committee with three members on it ; one, the officer in charge, and two other men—influential men—of the locality. These are, roughly speaking, the details of the organisation I would suggest for the purpose of an economic enquiry. You have the central department, the provincial department, the economic circles and under them local units.

Now, as to the persons who ought to be put on the Committee, I would suggest the following classes of persons in order that you may have some rough idea ; we should have men like the presidents and secretaries of co-operative societies in the various places. We should have some teachers of economics in the colleges. We should have persons, like bankers, traders, who are intimately connected with the life of the villages, towns and so on. If we can induce some of the money-lenders, they should also be put on the committee. As for the officials, I would suggest that greater importance should be given to those who have worked in the Revenue Department, in the Settlement and the Census Offices.

Then, there is one more small proposal ; some of the University Departments have carried out local surveys, the Economics Department of the Madras University, for instance. Dr. Mann has done the same in Bombay and in the Punjab there is a Board of Economic Enquiry with which non-officials are connected. They have done fairly good and useful work. I would suggest, if I may, that the Government may even give a little help to encourage the departments and colleges to carry on this branch of economic study. They will be useful to the country, to the universities, to the Government, etc. I may mention that there should be trained officers in the economic circles and on the committees and I would leave to the provincial department the work of training the particular officers. This is in regard to the agency.

As for the cost, I would suggest that for the present the cost of the first general economic survey should come from the national exchequer but afterwards it should be met by the Provincial Governments. Although there is the precedent of the Census reports, I am not in favour of burdening either the municipality or the District Board or the village with the cost of these surveys. The resources of the municipality are already limited and they will not be sufficient. If money has to be obtained from somewhere, it should be from either the Provincial Government or the Central Government. This is as regards the general plan which I have mentioned. I will not touch on the fourth point, because I have nothing particular to say.

Now, as far as the agricultural conditions are concerned, regarding production under agriculture, I would like information collected upon the following points, which are not mentioned in the questionnaire. You will remember that the object with which I start is that there should be

useful enquiry for the purpose for social and economic and reconstruction. From that point of view, I am making these additional suggestions. I would like to know the area under cultivation. We know it is roughly given in Government publications. I would like to know the nature of the soil, the kind of manure used, the division into fields and the size and scatteredness of holdings.

Prof. Burnett-Hurst.—Q.—That you can do only by an intensive study of the village.

A.—I will come to that question also. I personally think that, if you want a really useful survey, it cannot be done without an intensive study in certain places. Then, I would also like to know the system of ownership and tenancy prevalent.

Mr. Kaul.—Q.—You can get that from Government reports and publications ?

A.—Yes, but what I want is that the information should be collected in a certain definite place. You cannot judge the economic condition, exactly unless you have the whole information collected together at one place. If the outside public is again referred to various other publications, it would be very difficult for them to have any definite ideas. If an economic enquiry is to be made, the whole information collected should be in one place.

Q.—Supposing all this information is published in the Year Book ?

A.—The first thing I have in my mind is a thorough investigation of the whole system. It may be that certain official material is already available, but some may have to be supplemented. For instance, a particular official goes to the village and finds out on his own investigation whether a particular item is right or not. I want this to be checked by the agency you are going to employ for the purpose now. I would also have information on extensive and intensive cultivation, on the kind and frequency of crops raised, the methods of cultivation, the implements used, the agency through which the seed is obtained and the peculiar classes of agricultural diseases. Then I would also like to know whether the cultivation is independent of irrigation and, if there is any irrigation, of what kind it is. I would also like to know the capital which is used in agriculture, from where it is obtained, *i.e.*, from the money-lender, from the co-operative society, the cultivator's own, or other sources. These are some of the points which I do not find specially mentioned in the questionnaire. Perhaps you thought them to be outside the range of your enquiry.

Q.—We are not going into the details of an intensive enquiry.

Prof. Burnett-Hurst.—Q.—Your idea is that there should be a thorough, intensive study, very detailed, to ascertain all facts. Could you give me an example of any such similar investigation that has been carried out in any other country ?

A.—To tell you the truth, I have only gone into what is required for this country, and not into what has been done elsewhere. These, I consider ought to be done, if there is time and money available for the purpose.

Q.—So far as you know, you are not aware of any country which has carried out any such investigation ?

A.—Censuses of production are carried out in various countries.

Q.—Censuses of production are separately dealt with in a particular portion of our questionnaire. Do you intend to collect information about every village ?

A.—I would not collect information about every village. I have already suggested that the country should be divided into economic circles or sub-divisions and that in each sub-division a few of the villages may be taken, which may represent the conditions prevailing.

Q.—How would you determine them ?

A.—After all, you have some basis when you divide villages into circles. You have a certain amount of details about villages and it may be only necessary to re-arrange them.

Q.—You would leave this to the proposed Census Bureau to determine ?

A.—Yes.

Q.—What proportion of the villages would you take ?

A.—It is very difficult to say off-hand. One village may be taken out of five, but if you find in other cases that there are some variations, you will have to take a larger number. I should think that at least about ten per cent. of economically similar villages should be taken.

Q.—There are about 500,000 villages in British India. Would you take ten per cent. of these for intensive studies ?

A.—Yes.

Q.—Roughly speaking, you suggest investigating 50,000 villages and in each village you would have a trained officer ?

A.—It is not necessary that there should be an officer for each village, but for a sub-division there should be a responsible officer, and he may have some local men to help him in the work.

Q.—How many villages do you think there would be in a sub-division ?

A.—I am afraid I will not be able to express any number.

Q.—What I want to ascertain is the cost ?

A.—I have no idea as to how long it will take and what would be the cost.

Q.—What lectures and training would you suggest for the investigators ?

A.—I cannot give an opinion as to this question at the present time. Persons who have already done the work will be able to give you information. Intelligent men will take a few days, while others may take longer periods.

Q.—You would endeavour to recruit, as far as possible, graduates in economics ?

A.—I would not confine them to graduates. Some of the graduates may not be useful persons.

Q.—Then, leaving aside the details of the scheme, I should like to question you about the poverty line : who would determine the poverty line ?

A.—It would be for the proposed department of census and statistics, on the basis of information collected.

Q.—You would leave it to the central department to determine the poverty line, after the classification by incomes has been made ?

A.—Yes.

Q.—Would it not be open to objection from certain quarters that the poverty line was either too high or too low ?

A.—The conclusions of every committee are criticised. The Committee should not be afraid of criticism. The Bureau would be an official body. Such heavy work cannot be carried on by a non-official agency without the help of an official agency.

Q.—That is to say, the poverty line would always be open to criticism and there would be no satisfaction that it was correct ?

A.—Yes. It is for the people to judge whether the line fixed by the Bureau is too high or too low or right. They will know how to make allowances.

Q.—How would you determine individual income or family income ?

A.—For the purpose of studying family budgets in the villages selected for intensive studies, we should select families and then roughly divide them into various groups, *i.e.*, how many belong to the rich class, how many to the middle class and so on.

Q.—There may be the objection that they are not representative families ?

A.—Objections are always raised ; but they ought not to stand in the way of making the experiment.

Q.—The investigator's results would be open to the objection that in selecting houses for enquiry he took all the bad cases. Under the circumstances, would you not prefer the system of random sampling for collecting data and make a random selection of, say, every twentieth or thirtieth house for enquiry ? Would you approve of that method ?

A.—No. Everything depends upon probability. I cannot say that according to my method there would be no error, or there would be very little chance of error, but I cannot say how the probability or random system will work. In the first place, I would suggest that statistics should be taken for every household, but it would be expensive and it would take too long ; and therefore the second best solution I can suggest is that a body which is expert and impartial and contains local men should do this work. The committee which contains influential local men will be considered trustworthy.

Q.—You will leave the choice of members to the official bureau ?

A.—Yes.

MR. DAYA SHANKAR DUBEY, M.A., LL.B., University Lecturer in Economics, the University, Lucknow.

Written Statement.

A brief outline of the Scheme for an All-India Economic Enquiry.

(1) The Central Government should establish an Imperial Department of Census and Statistics. The cost of this Department should be met from the central revenues.

(2) This Imperial Department should be responsible for the following :—

(a) Organising and controlling the work of Provincial Departments of Census and Statistics.

(b) Preparing and publishing in an improved form all those periodical reports and blue books which are now-a-days published by the Department of Statistics.

(c) Organising and taking census at the end of ten years and publishing the census reports.

(d) Estimating, on the basis of information supplied by provincial departments, the following at the end of every ten years :—

(1) Income *per capita* in British India.

(2) Wealth *per capita* in typical parts of a region.

(3) The number of persons in different economic classes.

(4) The burden of taxation on different classes of people.

(e) Comparing the conditions of Indian people with the conditions of people living in other civilised countries of the world.

(3) Each province should have a Provincial Department of Census and Statistics. The cost of this Department should be met from provincial revenues.

(4) The Provincial Department should be responsible for the following :—

(a) Organising and controlling the work of regional boards in making intensive study of typical areas in each region.

(b) Collecting and publishing correct and reliable information regularly with regard to the following :—

(i) Production (agriculture, large industries, factories and mining).

(ii) Wages of labourers of different grades in different industries in different places.

(iii) Prices of representative commodities in representative places.

(iv) Cost of living index numbers for different classes of people at different places.

(c) Taking census at the end of every ten years and publishing the report.

(d) Estimating the following every ten years on the basis of information obtained from the intensive study of typical areas in each region and other sources :—

(i) Income *per capita* in the Province.

- (ii) Wealth *percapita* of the typical part of various regions
- (iii) The number of persons in different economic classes.
- (iv) The burden of taxation on different classes.
- (e) Publishing the annual reports of the regional boards with regard to the intensive study of typical areas in each region.

(5) Each Province should be divided into tracts or regions which are more or less similar in economic characteristics. Urban regions should be separated from rural ones. For each region, a regional board for economic survey, consisting of officials and non-officials, should be constituted. The cost of these boards should be met from provincial revenues.

(6) Regional boards should do the following works :—

- (a) helping the Provincial Department of Census and Statistics, in getting correct and reliable information with regard to production, wages, prices, and cost of living.
- (b) making very intensive inquiries and detailed economic surveys of typical parts of the region with a view—
 - (i) to find out the actual annual production of agriculture, cottage industries, minor forest products, fruit, dairy and pastoral products and fishes,
 - (ii) to find out the wages and hours of work of different grades of labour in the area,
 - (iii) to get approximately the income, individual wealth, indebtedness, and cost of living of all the families in the area,
 - (iv) to get the number of persons in different economic classes,
 - (v) to calculate the burden of taxation on different classes of people,
 - (vi) to get family budgets of cultivators, zamindars, artisans, labourers, clerks, officers and other workers belonging to different classes,
 - (vii) to calculate the profits and losses of cultivators, artisans and workers of different classes in different industries,
 - (viii) to find out the extent of the scatteredness and smallness of holdings in the rural areas,
 - (ix) to find out the extent of rackrenting,
 - (x) to find out the extent of underfeeding and underclothing,
 - (xi) to collect any other information which might be required by the Provincial Department.

(7) The intensive study of the typical parts of every region should be made on the following lines :—

- (a) The inquiry should be conducted by investigators specially trained for the purpose. They should know how to make adequate allowance for biased errors.
- (b) The investigators should live for at least one year in the area they are investigating and they should try to get first hand information on the spot in sympathetic spirit.

- (c) The investigators should be supplied by the board with all necessary blank forms and questionnaires. They should never be satisfied by merely recording answers to questions but they should study the various problems by personal observation and independent verification of information elicited.
- (d) The investigators should try to gain the confidence and sympathy of the people of the locality and they should, before beginning the inquiry, convince the people that their object in making the inquiry is to find out the true economic position of the masses with a view to meeting their grievances.
- (e) Local Committees consisting of the influential men of the typical parts under intensive study should be constituted to help the investigator in his inquiry.

Oral evidence, the 8th April, 1925.

Chairman.—Q.—Kindly give us your opinion as to what organisation we should have, what staff should be employed and what method should be adopted for conducting an enquiry into the economic conditions of the people of India? Of course, we shall have to study the existing information and find out how far the information falls short?

A.—I have submitted a note. I think the Central Government should establish an Imperial Department of Census and Statistics, the cost of which should be met from the central revenues. This Imperial Department should be responsible for organising and controlling the work of Provincial Departments of Census and Statistics, and also for preparing and publishing in an improved form all those periodical reports and blue books which are now-a-days published by the Department of Statistics. The Imperial Department should also be responsible for estimating, at the end of every ten years, the income *per capita* in British India and the wealth *per capita* in typical parts of different regions, the number of persons in different economic classes and the burden of taxation on different classes, on the basis of information supplied by the Provincial Departments. I think it would be good to find out the wealth of the people of the country. If you obtain information from only selected places and from different classes of people, that would give you a fair idea. That would also be quite sufficient to give us a fair idea of the distribution of the wealth of the different classes of people.

I would divide the people into ten different economic classes, and they are as follows :—

- (i) The 'rich' class with a non-agricultural family income of Rs. 8,000 or more.
- (ii) The 'rich' class with an agricultural family income of Rs. 8,000 or more, consisting mostly of zemindars, cultivators and dependants.
- (iii) The upper middle class with a non-agricultural income of between Rs. 2,000 and Rs. 8,000 per annum. They are mostly income-tax payers and their dependants.

- (iv) The upper middle class with an agricultural income between Rs. 2,000 and Rs. 8,000 per annum.
- (v) The lower middle class in the Urban areas with a family income between Rs. 400 and Rs. 2,000 per annum.
- (vi) The lower middle class of non-cultivators in the rural areas with a family income between Rs. 350 and Rs. 2,000 per annum.
- (vii) The lower middle class of cultivators in the rural areas with a family income between Rs. 350 and Rs. 2,000.
- (viii) Poor class of people in the urban areas with a family income of less than Rs. 400 per year.
- (ix and x). Poor classes of cultivators and non-cultivators in the rural areas with a family income of less than Rs. 350 per annum.

The poor class which I refer to above is the class of people who have not sufficient subsistence, say, those without sufficient food, clothing, etc. For calculating the maximum limit of income of this class of people I depended upon Professor Lyons' statistics. The cost of this estimate is based on the jail regulations, and this is the minimum. The number of people falling in these three last classes, (viii), (ix) and (x), are those people who are not getting the minimum subsistence. The poor people according to the above classifications are destitute. I would first divide the people of different occupations into different classes, and would then sub-divide, in secondary classification, each occupation into ten classes. At the end of ten years information should be collected as to the distribution of income. This work should be done by provincial departments.

Another point is the burden of taxation on different classes of people. The family budgets of the different classes of people should be studied. All this will form the basis for the information that should be supplied by the provincial departments. The provincial departments who will collect the information will send it to the central department, and they should publish it once in ten years. The central department should make a complete study for the whole country. In this way we would be able to know as to how and where the people stand.

Each province should have a provincial department of census and statistics, the cost of which should be met from provincial revenues. The provincial department should be responsible for :—

- (a) organising and controlling the work of regional boards in making intensive study of typical areas in each region,
- (b) collecting and publishing correct and adequate information regularly with regard to the following :—
 - (i) Production (agriculture, large industries, factories and mining). This is referred to in question No. 7, Census of Production.
 - (ii) Wages of labourers of different grades in different industries in different places. (This must be collected every year and published.)
 - (iii) Prices of representative commodities in representative places, and

- (iv) Cost of living index numbers for different classes of people at different places.
- (c) taking census at the end of every ten years and publishing the report,
- (d) estimating the following every ten years on the basis of information obtained for the intensive study of typical areas in each region—
 - (i) *Income per capita*.
 - (ii) *wealth per capita* of the typical parts.
 - (iii) the number of persons in different economic classes.
 - (iv) the burden of taxation on different classes.
- (e) publishing the annual reports of regional boards with regard to their intensive study.

Each province should be divided into tracts or regions which are more or less similar in economic characteristics. This must be done by provincial departments with the help of the people. First of all, these boards should be established by the provincial departments with the help of the experienced officials in the Revenue and Co-operative departments. Urban regions should be separated from rural ones. Now, for each region there will be a regional board for economic survey consisting of officials and non-officials. The cost of these boards should be met from provincial revenues.

Regional boards should do the following work :—

- (i) help the provincial department of census and statistics in getting correct information with regard to production, wages, prices and cost of living,
- (ii) make very intensive enquiries and detailed economic surveys of typical parts of each region. The regional board make a first preliminary survey and they would decide what parts they should select according to the characteristics of the regions for intensive study. These typical parts would be selected by the Board after a number of preliminary surveys with the help of the investigators and this is not to be done by provincial departments.

With regard to finding out the wages and hours of work of different grades of labour in the area, the information should be collected by intensive study.

With regard to getting approximately correct information about income, individual wealth, indebtedness and cost of living of all the families of the area, you should select representative families from the various classes of families. Then, for the same class of people, you should take a random sample. Before making enquiries, we should consult the local committee in each typical area, and with the help of the local committee we can go on with the work. The persons of the committee will be living in the local area and they will be able to divide the people into different classes very easily.

With regard to getting family budgets of cultivators, zemindars, artisans, labourers and clerks, officers and other workers belonging to the

different classes, the investigators will give us accurate information for typical parts from the income figures which they possess.

As to calculating the profits and losses of cultivators, artisans and producers, there is nothing from which to calculate the profits and losses as they do not keep any accounts, but it is necessary to find out whether the agricultural industry is working at a loss or profit. They do not know whether they are making any profit.

As regards finding out the extent of scatteredness and smallness of agricultural holdings in rural areas, in most cases, where the holdings are very small, intensive study should be made.

I would like the intensive study of the typical parts of every region made on the following lines :—

The enquiry should be conducted by investigators specially trained for the purpose. The investigators should be graduates in economics or commerce with knowledge of statistics and they should be specially trained and used for intensive study.

*Mr. Kaul.—Q.—*How much would you have to pay for each investigator ?

*A.—*I think you would have to pay at least Rs. 100 to Rs. 125.

*Chairman.—Q.—*How much would it cost for 1000 families ?

*A.—*It will cost a good deal. The investigators should live for at least one year in the area they are investigating and they should try to get first-hand information on the spot in a sympathetic spirit. The investigators should be supplied by the Board with all the necessary blank forms and questionnaire. They should never be satisfied by merely recording answers to questions, but they should study the various problems by personal observation and independent verification of the information elicited, because people do not keep accounts and do not know the exact expenditure. Sometimes they overestimate and sometimes underestimate. If the investigator lives in the village, checks by personal observation and studies the actual condition of the village by living there for one year, the information collected would be more accurate, more reliable and will be of very great use for practical purposes and also for the economic development of the region. The investigators should try to gain the confidence and sympathy of the people of the locality and they should, before beginning the enquiry, convince the people that their object in making the enquiry is to find out the true economic position of the masses with a view to meeting their grievances. Lastly, I would add one thing more. A local committee should be appointed for each typical area consisting of the village headman and the school teacher, if the village contains a school. If there is a co-operative society or a *panchayat* it should also be utilised.

*Mr. Kaul.—Q.—*If there is none ?

*A.—*Some influential men of the village who may be educated may be put on the committee. This Board would be an advisory committee helping the investigator in his works. It will not be an executive body.

*Q.—*Have you any idea of the expenditure that would be involved ?

*A.—*It will all depend on the number of economic regions you have.

*Q.—*You say that intensive study of the typical parts of every region should be made. What is your idea of a typical part ?

A.—The typical part will be two or three villages.

Q.—Suppose each investigator is investigating a typical part. You will have to pay him Rs. 150 a month. You will have to give him one *chaprasi*, and there is also the cost of printing the forms. The investigator will probably be able to do three villages in the year. That will come to about Rs. 2 per head.

A.—We would not have these surveys in all the villages in India. We are taking only typical regions.

Q.—Have you any idea as to how many villages you would take in one district ?

A.—Personally, I would be satisfied with three villages for the whole district every year.

Q.—You think that the result would represent the whole district ?

A.—It would represent the whole district where the districts are homogeneous. But the information collected in this way will be of very great help. Rather than have a general enquiry over a much wider area, I would have more intensive work done in typical parts. I would make a general preliminary enquiry in order to divide the province into regions and to select typical parts.

Q.—Then you will make a general enquiry ?

A.—This will all be done by the Provincial Government. What would happen is this : if the organisation I have suggested continues, say, for ten years, at the end of that period you will have obtained sufficient information for thirty villages in each region. That is not a small area.

Q.—Three villages each year to a district ?

A.—Yes.

Q.—You would make some general enquiries to begin with. What sort of enquiries would you make ? Would you take a census of production of industries, mining and agricultural produce ?

A.—I am more interested in rural economics and rural surveys.

Q.—Would you include the production of agriculture ? Would you also make enquiries about wages ?

A.—There are two separate organisations. One is already collecting information and publishing particulars as to price, outturn, wages, cost of living, etc. This will be supplemented by intensive surveys.

Q.—So you want the intensive enquiry to be supplemented by general enquiries ?

A.—Yes.

Professor Burnett-Hurst.—Q.—I think you have not had time to go into the details ? You are taking three villages to a district. There are fifty districts in the United Provinces, so that you would carry out an enquiry in 150 villages per year, and you would like this to go on every year. It would be a recurring charge. There would be lean years and fat years, so that you could not always say that the figures you obtained for a particular year were exact. In certain years, your figures would be vitiated through conditions being abnormal.

A.—But the investigator can make enquiries for that particular year. He can collect information for past years also. He can collect that with a fair degree of accuracy.

Q.—It is difficult to obtain information for the past year. A man is likely to forget, and the mind of the agriculturist is untrained.

A.—The investigator would have an idea of the calamities. He would be able to make some allowance for calamities, or for good crops, etc.

Q.—You would allow the investigator to make allowances ?

A.—Yes. With regard to the other years, he can make estimates.

Q.—You say he would get accurate information. Do you think he would be able to obtain accurate figures about wealth ?

A.—With regard to wealth, it would be possible, but with regard to jewellery, it would be difficult.

Q.—You do not think he can secure accurate information about jewellery ?

A.—If he possesses the sympathy of the people and if they know well that the information will not be abused, he may.

Q.—How are they to be assured that the information will not be abused ?

A.—There is a local committee there, and the investigator should try and convince them that the enquiry is being conducted for knowing the actual condition of the people, for finding out the means of meeting their grievances and increasing their material prosperity.

Mr. Kaul.—Q.—What about income ?

A.—Income can be estimated.

Professor Burnett-Hurst.—Q.—Do you want results to be compared with those obtained in foreign countries ?

A.—*Later on.*

Q.—Would you include the value of the free dwellings that these people live in ?

A.—Certainly. You mean the dwellings in the villages ?

Q.—Yes.

A.—They construct their dwellings, but they get land free. In comparing the income you might take the rent into consideration.

Q.—Would you try to estimate the rent of the dwelling ?

A.—Yes. That is included in real income. People think that if no rent is paid, no value should be considered.

Q.—There are villages where people obtain fuel for practically nothing, whereas in foreign countries they have to pay for their fuel. Would you value the fuel that they get for nothing ?

A.—They have to put in labour for that. Of course, real income must be considered and not money income. All the advantages must be taken into consideration not only in India, but in other countries also.

Q.—How would you determine a representative family ?

A.—What I suggest is that first of all you should divide the people into different classes and then from each class take a random sample.

Q.—You desire to support the method of random sampling ?

A.—Yes, within each class. I think it would be better done at random within the class, and there would be no bias if the samples are taken in each class.

Q.—Would the ordinary man in the street accept the random sample method ? Some say they have not much confidence in it.

A.—If they find that the method is really a random system they will accept it, otherwise not. At the same time, if the local committee consists of local influential men, then I think the people would not think that it is being done with a certain motive.

Q.—Suppose you procured certain figures for each region and the returns were forwarded to the provincial bureau, would you average them for the whole of the province ?

A.—They can be taken as average figures for the province.

Q.—Would you not use weighted averages ?

A.—I think it would be better.

Q.—What system of weighting would you employ ?

A.—The number of persons in each class.

Q.—Let us take the case of income. How would you arrive at the income *per capita* in each province ?

A.—Take the number of persons, find out the total income and divide one by the other.

Q.—Let us confine ourselves to, say, fifty economic regions in the United Provinces. These economic regions would be of varying sizes. You propose to take figures for each region, add them together and divide by 50 ?

A.—No. What I would do in order to find the average income of a class in each region is to multiply the income of that class by the number of persons in it.

Q.—That is what I say. You would utilise the number of persons in each class. I mean that you would assume that the distribution of classes would be the same in all regions ?

A.—Yes.

Q.—What particular opportunities have you had of studying economic problems ?

A.—I have made a study of the Indian food problem. I have written an article on " Inequality of taxation in British India " and a book " The Way to Agricultural Progress " which has been published by Messrs. Thacker Spink & Co.

Mr. E. A. H. BLUNT, C.I.E., O.B.E., I.C.S., Financial Secretary to the Government of the United Provinces.

Written Statement.

(The questions referred to are those in the questionnaire).

Question 2.—The scheme of classification of occupations which was used in the census of 1911 and again at that of 1921 was not invented by Sir Edward Gait. It is an adaptation of the International Scheme of Classification which was devised in 1899 by M. Jacques Bertillon. Though it is admirably suited to the needs of a census it is not suited without considerable modification to the needs of an economic inquiry. Occupation is no doubt important but it is not the only element in the economic condition of an individual or class. Again from one point of view the classification is too elaborate, from another point of view not elaborate enough, for an economic inquiry. It is too elaborate because many occupations which must be shown separately in census statistics can be grouped together in economic statistics. It is not elaborate enough because for economic purposes, occupations or classes require sub-division into such groups as 'master' and 'man', 'skilled' and 'unskilled'—sub-divisions that are not necessary in census statistics.

2. Nevertheless I advise the committee to make this census classification the frame-work of their economic classification for the following reasons :—

- (a) It covers the whole occupational field ;
- (b) It is easy to comprehend and handle ;
- (c) It is elastic ;
- (d) The census figures will enable the committee to judge of the comparative size and importance of the economic groups.

3. As I understand question 2, Appendix A is an economic classification based upon the census classification. If that is so, I think it is inadequate. The question invites criticisms on Appendix A but it will be better, I think, to frame an economic classification of my own, for criticism by the committee.

4. I would have the following major classes :

- (I) Agriculture ;
- (II) Forestry, fishing, hunting ;
- (III) Stock-breeding ;
- (IV) Industry and transport ;
- (V) Trade ;
- (VI) Public administration ;
- (VII) Professions and liberal arts ;
- (VIII) Domestic servants ;
- (IX) General labour ;
- (X) Unproductive—respectable ;
- (XI) Unproductive—disreputable.

I deal with each of these groups one by one.

5. (1) *Agriculture*.—In deciding the classes to fall under this major group we have to take note of the following facts :—

(1) *Landlords*.—(a) There are probably few, if any, landlords in this province who do not cultivate a certain amount of their land—as a minimum, sufficient to supply the needs of their own household. To a certain extent, therefore, every landlord is a cultivating landlord.

(b) On the figures of 1911, over 90 per cent. of all landlords derive the *greater part* of their income from their cultivation and under 10 per cent. derive the major portion of their income from their rents.

(c) On the figures of 1911, some 12 per cent. of all landlords were also tenants.

(2) *Tenants*.—(a) Tenure is an important economic factor in this province. Many tenures are heritable ; some transferable ; other are safe for an extended period (e.g., the tenant's lifetime). In such cases the tenant has many advantages. Enhancement of rent is generally difficult and always restricted by law. Ejectment is almost impossible. The tenant who accordingly possesses almost complete security of tenure and fixity of rent, can afford in various ways to make the most of his holding.

The principal tenures of this kind are as follows :—

In Agra.—Fixed rate tenants, permanent tenure holders, exproprietary tenants, occupancy tenants, tenants-at-will who have held for more than 12 years ;

In Oudh.—Underproprietary, exproprietary tenants, occupancy tenants, statutory tenants.—

Tenants-at-will, tenants with a restricted lease, and sub-tenants in Agra, and non-statutory tenants or sub-tenants in Oudh, pay much higher rents and do not possess the same advantages.

(b) From the point of view of rent, it can, I think, be stated as a general principle that all the favoured tenants mentioned above with the exception of tenants-at-will who have held for a period of over 12 years in Agra and of statutory tenants in Oudh, pay a relatively low rent. Tenants-at-will who have held for over 12 years in Agra, and statutory tenants in Oudh pay a fair rent ; tenants without advantages pay a high or even a rack-rent.

On the whole, I should say that the economic conditions of the following classes are approximately equal—

- (1) *True Cultivating Landlords*.—i.e., those who cultivate the whole, or a major portion of their lands.
- (2) *Cultivating Landlords who are also Tenants*.
- (3) *Tenants holding on favoured terms*.—If the first and second of these have no rent to pay, they pay revenue in respect of the land that they cultivate. For the economic inquiry

therefore, I would divide agriculturists into the following classes—

Group 1.—Non-cultivating landlords ;

Group 2.—Cultivating landlords, and tenants holding by favourable tenures ;

Group 3.—Ordinary tenants.

This in my opinion better represents the truth than the classification proposed in Appendix A, namely rent-receivers, rent-payers and peasant proprietors. Strictly speaking, rent receivers would include not only non-cultivating landlords but tenants who had sublet their lands. Rentpayers would include not only tenants cultivating their holdings but landlords cultivating their own land. I am not sure what is meant by "peasant proprietor"—possibly it applies only to provinces where the *ryotwari* system is in force. At all events I can find no room for it in the United Provinces classification, unless indeed it is regarded as equivalent to cultivating landlords ; when rent-payers would be restricted only to tenants. This classification is unsatisfactory because it takes no advantage of the economic importance of the tenure ; whilst it includes with non-cultivating landlords a small and unimportant class of tenants who have sublet their holdings.

To the three classes mentioned I would add—

Group 4.—Estate servants, i.e., land agents, managers of estates, clerks and rent collectors, etc.

Group 5.—Farm servants and field labourers.

The classification proposed in Appendix A omits the former group and subdivides the second into 'farm servants' and 'field labourers.' Possibly the difference between this classification and mine is merely a difference in name ; and by 'farm servants' in the former is actually meant what I have called 'estate servants.' At all events I think the distinction which I have made is the only real distinction. There is little economic difference between the permanent farm servant and the field labourer.

These groups correspond to the following census groups :—

Non-cultivating landlords—1 (a) ; cultivating landlords and tenants holding favoured tenures—1 (b), 2 (a), 2 (b) ; ordinary tenants—1 (c), 2 (c) ; estate servants—3 ; farm servants and labourers—4.

(II) *Forestry, fishing and hunting.*—Forestry should be restricted solely to exploiters of forest produce, i.e., woodcutters, charcoal burners and collectors of firewood, lac, rubber, catechu, etc. Two other classes would be possible under this head, namely—

(a) forest officers, rangers and guards ;

(b) contractors ;

but the former in an economic classification are better placed under 'public administration', and the latter under 'industry'.

Fishing and hunting can be appropriately placed in this class, for their economic conditions are very similar in this country to that of exploiters of forest produce. No further sub-division is necessary under this head. This group corresponds to the census groups 8, 14, and 15.

(III) *Raising of stock*.—Appendix A suggests a sub-division into ‘skilled’ and ‘unskilled.’ I think a better sub-division would be into—

Group 1.—Breeders and owners ;

Group 2.—Servants, i.e., herdsmen, shepherds, goatherds, etc.

Breeders correspond to census groups 9 to 11 ; servants to group 12.

Agriculture, forestry, fishing and hunting, and raising of stock are all purely rural occupations.

(IV) *Industry and Transport*.—In the census classification the sub-class ‘industry’ comprises 14 orders and 73 groups ; whilst the sub-class ‘transport’ comprises 4 orders and 22 groups.

For the purpose of economic classification, it is, I think, possible to combine many of these groups and even of these orders. I make the following suggestions :—

Group 1.—*Sweepers and scavengers*.—This is, for obvious reasons, a group entirely apart. This group is both rural and urban, and should be subdivided accordingly. It corresponds to census group 93.

Group 2.—*Rice pounders and flour grinders*.—This group is peculiar because it is almost entirely restricted to women. Out of 239,000 workers under this head in 1911, some 228,000 belonged to that sex. In many, perhaps a majority of, cases, it is an occupation pursued by women as a means of livelihood subsidiary to the occupation of their male relatives ; but it is also the principal occupation of very poor women who have no male relatives—notably widows. For this reason I think this should also form a separate group.

This group is both rural and urban, but sub-division is scarcely necessary. It corresponds to census group 56.

Group 3.—This group comprises a number of primitive occupations of a low kind. The occupations in question are tanners, curriers, leather dressers, basket-makers, potters, brick and tile makers, toddy drawers, washermen and barbers. In this group there is no need in my opinion to subdivide into ‘master’ and ‘man’, or any similar groups. In all these cases the master works for himself with no assistance, save that given him by his relatives.

This corresponds to census groups 32, 37, 47, 48, 65, 71 to 73. This group is both rural and urban, and should be subdivided accordingly.

Group 4.—The next group comprises a number of occupations many of which are essentially primitive in character, but are not regarded as low.

The occupations are as follows :—

Workers in wood, metals, rope and other fibres ; makers of oil, tobacco, sugar, sweetmeats, garments, carts, boats, saddlery, bangles, toys ; butchers, bakers, grain parchers.

No sub-division into ‘master’ and ‘man’ is required. This group is both rural and urban and should be subdivided accordingly. It corresponds to census groups 24, 25, 36, 38 to 44, 47, 48, 53, 57 to 63, 65, 66, 67 to 73, 76 to 82, 90, 91.

Group 5.—This group consists of a number of more important industries as follows :—

Textile, other workers in ceramics (than potters), other workers in leather (than tanners, etc.), other workers in chemical products (than makers of oil) ; workers in fur and bones, brewers, distillers, furniture makers, other workers in industries of luxury (than makers of bangles and toys), transport by water and road.

These occupations are all obviously of a higher grade than those placed in former groups—

Most of these occupations are mainly urban, though of course a certain amount of work in textiles, bones, and some of the industries of luxury, are to be found in the villages. It should therefore be divided into urban and rural. The urban sub-division should be further divided as follows :—supervising staff, clerical staff, skilled workmen, unskilled labourers. I do not think that it is necessary to subdivide supervising staff into managers and technical staff as suggested in Appendix A.

They correspond to the census groups 21 to 23, 26 to 31, 33 to 35, 45 to 46, 49 to 52, 54 to 55, 64, 74 to 75, 83 to 89, 97, 99 to 101.

(V) *Trade.*—The sub-divisions of this class are similar to the industrial sub-divisions.—

Group 1.—This group deals with more or less disreputable or low trades and includes—

dealers in rags and refuse, hawkers and other itinerary traders, conjurors, acrobats, fortune-tellers and wandering entertainers.

No sub-division into 'rural' and 'urban' seems necessary and certainly no sub-division into groups of the nature of 'master' and 'man'. The corresponding census groups are 134, 136, 137.

Group 2.—The second group deals mainly with traders who supply the more primitive needs, or are relatively of lower economic status than other traders. It includes—fishmongers, grocers, dairymen, confectioners, green-grocers, tobacconists, fodder dealers, sellers of clothing, firewood, bangles, toys, etc. Such traders are to be found both in rural and urban areas and must therefore be subdivided accordingly.

No sub-division however is necessary into groups of the nature of 'master' and 'man' as the master almost invariably works without any assistance save that of his own family.

Group 3.—The third group includes more important trades. It includes :

dealers in textiles, leather, wood, metals, pottery, chemical products, liquor, grain, live-stock, furniture, hardware, building materials, means of transport ; hotel keepers, jewellers, publishers, booksellers and other traders. These trades are found both in country and town and the group must be subdivided accordingly. The

urban sub-group should be further subdivided as suggested in the case of the fifth group under 'industries.' The corresponding census groups are 108 to 115, 121, 123, 126 to 129, 131, 133, 135, 138.

Group 4.—The fourth group comprises generally dealers in money, and includes—

bankers, insurance agents, exchange agents, money changers, brokers, commission agents, commercial travellers ; and their employees.

This can be regarded as a purely urban group and be subdivided into groups similar to those under group 5 under 'industries.' The corresponding census groups are 106 and 107.

(VI) *Public administration.*—This includes all Government servants whatever, with a possible exception of medical men (who generally can secure an addition to their salaries by private practice).

This group should be subdivided as follows :—

- (1) gazetted officers ;
- (2) non-gazetted officers ;
- (3) clerical establishment ;
- (4) menials.

The corresponding census groups are : 7-forest service ; 66-A-opium factory ; 96-irrigation ; 98-roads and bridges ; 103-railway employees ; 105-post office ; 139, 140-army ; 142, 143-police ; 144 to 146-servants of the state or local bodies ; 147-village officials ; 154 (part)-medical practitioners.

These may be treated entirely as urban except in the case of groups 143 (village watchmen) and 147 (other village officials).

(VII) *Professions and liberal arts.*—The only sub-division required under this head is into 'superior' and 'subordinate'. The superior group will consist of priests and ministers of religion, lawyers, medical practitioners not in Government service, professors and teachers, architects, surveyors, engineers, authors, photographers, artists, etc., music composers and masters. The subordinate group will consist of religious mendicants, temple or church servants, pilgrim conductors, servants of burial or burying grounds, lawyers' clerks, petition writers, midwives, vaccinators, compounders, nurses, etc., clerks and servants of educational establishments, public scribes, stenographers, employees of engineering firms, singers, actors, dancers and players of musical instruments.

The group can be regarded as urban in nature. The corresponding census groups are 148 to 160.

(VIII) *Domestic servants.*—I doubt if any sub-division is really necessary in this case, though possibly a sub-division into superior and subordinate is advisable. Cooks, indoor servants, coachmen, motor drivers, etc., would fall into the former group ; water-carriers, door-keepers, chankidars, grooms, etc., would fall into the second group. The groups can be regarded as urban in character. They correspond to the census groups 162, 163.

(IX) *General labour.*—There is a huge class of persons who can only be described by the general term "labour." They are prepared to

undertake any type of work that requires no particular skill. The work of this class is sometimes agricultural, but generally earth work of various kinds. Their economic conditions are different to those of the regular agricultural labourer and I think it necessary to make a separate group of them. They correspond to the census groups, 102-porters and messengers, 104-railway labourers, and 167-labourers and workmen otherwise unspecified.

(X) (a) *Unproductive—respectable*.—This consists entirely of persons living principally on their income, pensioners and proprietors of various kinds, other than landed proprietors.

No sub-division is necessary. This corresponds to the census group 161.

(b) *Unproductive—disreputable*.—This consists of inmates of jails, asylums and hospitals, beggars, vagrants, prostitutes, etc. It needs no sub-division and corresponds to groups 168 and 169.

The important census groups which I have omitted are :—

Group 5—plantations.—These are insignificant in this province.

Group 6—growers of special products and market gardeners.—These are not of sufficient importance to be treated as a separate group and could best be placed under 'agriculture'.

Group 13—raising of small animals.—This is insignificant.

Groups 135, 164, 165 and 166.—These are occupations of various kinds which are insufficiently described and are unnecessary in an economic classification.

Appendix A suggests groups for old and infirm, and incapacitated respectively. I can see no advantage in such groups. Such persons either have no means of livelihood at all—in which case they are to be regarded as dependent on the occupations of their relatives and form indeed an economic disadvantage in the latter's environment; or else they belong to the group—Unproductive—respectable.

The group of village craftsmen suggested in Appendix A is in my opinion better dealt with by the sub-division of appropriate major groups into rural and urban respectively. There are practically no craftsmen which belong purely to the village.

Question 3.—(1) The answer to the first part of the question is in the affirmative. The economic characteristics of different tracts vary enormously; the economic data will certainly vary enormously too. To compare for instance Kumaun, a hill tract with huge areas of forests, with the Allahabad division, which is a fertile and well cultivated area in the Indo-Gangetic plain, would be to compare two entire dissimilars.

(2) Sir Edward Gait's classification is based entirely on rainfall. In a country like India, rainfall no doubt is an important economic factor. But it is certainly not the only economic factor to be considered. In this province I am not sure that it is even the most important one. The distribution of the rainfall (not only in respect of time but of place) matters even more than its amount; whilst there are artificial means of correcting the inequalities of the natural water supply (canals and wells).

To come from the general to the particular, there is no United Provinces officer who would not regard it as utterly wrong to place Banda and Hamirpur (Allahabad Division as it was then) in the same "natural"

or "economic" division as the districts of Lucknow and Benares : or to equate Kumaun to Jalaun and Jhansi on the one hand, or to the fertile and canal irrigated districts of the Meerut and Agra divisions on the other.

Mr. Datta's classification is very much better, but not the best available, which in my opinion is the "natural divisions" of the provincial census report.

The two differ as follows :—

1. Mr. Datta's "Eastern Districts" correspond to the provincial census's Indo-Gangetic Plain East" cum "East Satpuras." The East Satpuras division consists of a single district half of which really belongs to the Indo-Gangetic Plain East rather than to the division in which it is placed. It does not very much matter whether the Eastern Satpuras natural division remains or is amalgamated with the Indo-Gangetic Plain East.
2. Mr. Datta has placed the whole of Oudh in one division. This is bad classification ; some of the districts differ greatly from the rest. In the census natural divisions one Oudh district (Kheri) falls in Sub-Himalaya West, two (Gonda and Bahraich) in Sub-Himalaya East, and the rest in Indo-Gangetic Plain Central.
3. Mr. Datta's central districts are shown as one : they correspond to the Rohilkhand division. In the census natural divisions three are in Sub-Himalaya West, three in Indo-Gangetic Plain Central.
4. Of Mr. Datta's Doab districts, one (Saharanpur) is in the census division Sub-Himalaya West, ten in the census division Indo-Gangetic Plain West, and three (Cawnpore, Fatehpur and Allahabad) in the Indo-Gangetic Plain Central.

I would strongly recommend the Committee to take the natural divisions of the provincial census report. These have been used in successive censuses since 1901 at all events, and make as good "economic" divisions as is possible, unless the Committee are prepared to sub-divide by units smaller than districts. They have moreover this advantage that statistics of all kinds based on the census returns are already available, so that to this extent less fresh statistical work will be required.

The natural divisions in the United Provinces are :—

Himalaya West.—Dehra Dun district and the Kumaun division.

Sub-Himalaya West.—Saharanpur, Bareilly, Bijnor, Pilibhit, Kheri districts.

Indo-Gangetic Plain—

(a) *West.*—Meerut division (except Dehra Dun and Saharanpur) : Agra division : Farrukhabad, Etawah, Budaun, Moradabad, Shahjahanpur districts.

(b) *Central.*—Lucknow division (except Kheri) : Fyzabad division (except Gonda and Bahraich) : Cawnpore, Fatehpur, Allahabad districts.

(c) *East.*—Benares division (except Mirzapur district) : Azamgarh district.

Central India Plateau.—Bundelkhand division.

Sub-Himalaya East.—Gorakhpur, Basti, Gonda, Bahraich districts.

East Satpuras.—Mirzapur district.

(If desired, this could be amalgamated with Indo-Gangetic Plain East).

The natural divisions number eight (or seven if East Satpuras disappears) as against Mr. Datta's seven divisions.

Questions 5 to 7.—I venture to refer the committee to the criticism of the agricultural statistics which will be found in one of the appendices to the Taxation Enquiry Committee Report. All these criticisms so far as this province is concerned are justified. I also append a copy of a note which I have prepared for the Taxation Enquiry Committee which deals with this subject.

2. Generally I should say that the defects of the present returns are these :

- (1) The standards of yields are now 20 years old and are probably inadequate. Revision is necessary. This applies not only to the standard of yields of various crops but to the standards applied to mixed crops.
- (2) The estimates of the yield of a particular crop in terms of annas is generally too low. This is due to the innate pessimism of cultivators and village officials, and can only be corrected by independent reports by superior officers (kanungo, tahsildar and Sub-Divisional Officer). Such officers of course could not make a complete report, but their figures could be used to test the complete figures sent in by patwaris.
- (3) The statistics ultimately depend on crop cutting experiments. These are not always conducted with sufficient intelligence. The fields for the experiment are often selected rather with a view to their convenience than for their representative character.
- (4) There are no standards of yields for many important minor crops. Though they may not be of much importance for ordinary purposes yet they are necessary for anything in the nature of an economic inquiry, and I consider that the system at present in use for major crops should be extended to them.

3. There is little wrong with the existing machinery for crop reporting, though as I have said more testing by superior officers is desirable. At all events it is the only machinery available. Nor is anything seriously wrong with the system. All that is required, in my opinion, is to correct the formulæ and standards used in applying it.

Question 9.—I should say that the cattle census in the United Provinces is as accurate as can be expected. It must be remembered that the staff who carry out this census are regularly employed in the census of population, the accuracy of which has never been impugned. If they can count heads of one kind with accuracy, I see no particular reason why they should fail to count heads of another kind with accuracy. It is only in urban areas that any measure of inaccuracy is likely, simply because the same kind of agency is not available. In such areas the error is probably on the side of omission.

Question 10.—There should be no serious difficulty in obtaining statistics of meat and skins in urban areas through the municipal slaughter houses where these exist (they exist in all large towns). But I can think of no means of obtaining such figures in rural areas or small towns unless a special staff of some kind is employed. It might be possible to frame an estimate of the yield of wool from the number of sheep, checked perhaps by returns of export from the railways. Sheep are amongst the livestock counted at the cattle census. As regards tallow, bones, hair, hoofs, etc., what applies to meat and skins applies also to these commodities.

Question 12.—It seems to me unnecessary to obtain statistics of the production of cheese, bacon, ham, eggs, poultry and honey. None of these articles are in great demand except amongst Europeans. The same applies to butter and cream. I can think of no method of obtaining data regarding milk and ghee, except possibly in urban areas in respect of milk. The dairy trade in the province is small. In 1911 there were only some 67,000 persons employed in the sale of dairy produce in the entire province. Most agriculturists have a certain number of cattle and consequently have no reason to purchase milk, whilst everybody who possesses milk makes his own ghee.

Questions 18-21.—A special officer investigated the fisheries of the province in 1923. The committee are referred to his report, which consists of some 40 pages ; but most of it deals with conservation and stocking, matters that are not of primary interest to the committee. On the question of the existing fish supply, his main conclusions are as follows. (I offer some criticisms upon them).

1. About 75 per cent. of the population are fish eaters : all non-Hindus, and all Hindus except Jains, Vaidyas, most Brahmans, women of all high castes, some special castes.

[On the basis of this information, the proportion of fish eaters would be about 83 per cent. I fancy, however, that the *taboo* on fish is more expensive than this and I should not put the percentage at higher than 70 per cent.].

2. Fish is a relatively cheap food ; certainly cheaper than mutton.

[In that case, it is about as cheap as goat. It is but a minor part of the population that can eat even goat flesh regularly : the proportion of the population that can make an *effective* demand for fish, therefore, cannot be larger than some 30 to 35 per cent.].

3. The supply is ample and well distributed, except in the hills.

[And it is in the hills that the demand is greatest].

4. There is no reason why supply should not meet the demand, for the man power of the fishing castes is adequate.

[The castes mentioned are Kahars, Kewats, Mallahs and Chains. But only a small proportion of the Kahars are fishermen : and the distribution of the other castes is very uneven].

5. In spite of these facts, the *effective* supply is not adequate to the demand. The number of persons employed in fishing in 1921 was under 11,000 in the whole province. And consequently the number of persons who actually eat fish is only a very small part of those who would eat fish if they could.

[The number of persons engaged in fishing in 1911 was 20,000 so that there has been a considerable decrease].

6. The reasons for the inadequacy of the supply are :—

- (a) The occupation is necessarily seasonal, and fish cannot always be obtained.
- (b) The trade is not well organized.

7. There are no subsidiary fish industries—canning, curing, manure and oil. There is no demand for canned or cured fish : the other two industries are at present inadvisable.

Questions 27-39.—I do not attempt a definite answer to this set of questions, which is the business of the Director of Industries, but make the following general remarks. There should be no particular trouble in taking a census of production so far as large-scale industries are concerned. The employers in such industries are enlightened, and consequently would realize its advantages without suspecting Government of ulterior motives. A certain amount of special information was indeed collected both in 1911 and 1921 from such industries as part of the census. But the same is not true of cottage industries. The employers are relatively uneducated : at present they would almost certainly regard a census of production with suspicion, as directed to an ultimate increase in taxation. I doubt, moreover, whether many of them *could* give accurate information regarding their raw materials, finished products and sales, even if they were willing to do so ; for their book-keeping probably leaves much to be desired.

Before a census of production in respect of cottage industries could be carried out successfully, I imagine that much education by means of propaganda is needed. I do not know whether the Industries Department does anything of this kind : personally, I should regard it as one of the department's most important duties. They have a certain number of divisional superintendents who are mainly, I believe, concerned with cottage industries, but I do not know the precise nature of their functions.

It is however possible that cottage industrialists would now be less suspicious of Government's officers than they were two years ago, as a result of the Wembley Exhibition. For the secretaries to that exhibition (both Government servants) got into close personal touch with many of them, and had great success with the exhibits entrusted to them. They, at all events, could probably carry out a census of production without much difficulty simply because the persons concerned would trust them. I cannot help expressing a hope that the Industries Department will take care to keep up the personal relations thus started.

Questions 40-51.—It is in the first place incorrect to say that a quinquennial wage census is taken in the United Provinces. It was taken in 1911 and 1916, but was not taken in 1921 and has not been taken since. Conditions have altered greatly since 1916, and it is safe to say, therefore, that we have no reliable information regarding the rate of wages in the United Provinces at all. I am bound to admit, further, that the wages reported in the wage census are of very little value. All the criticisms mentioned in question 40 appear to me sound. Apart from that, there is nothing to show how wages in kind have been calculated. And wages in kind make up a considerable part of the total wages of agricultural labourers.

It will, I think, be extremely difficult to get accurate returns of the wages of agricultural labourers. I venture to make the following points for the consideration of the Committee :—

- (a) I believe it is true that ploughmen, reapers, weeders, sowers, transplanters, etc., are paid different rates of wages. But the fact remains that in very many cases—probably in most cases—the persons employed are actually the same. A man is a ploughman at one time, a reaper at another, and a planter at a third ; and he will be paid at different rates according to the work that he does. That obviously means that though the different wage rates can be stated, they are going to be of little value for the subsidiary purpose of framing family budgets, or otherwise arriving at the economic condition of the average agricultural labourer.
- (b) Some agricultural labourers are doubtless employed practically all the year round, though their work will differ according to the seasons. Others are only casually employed when additional labour is required—for instance, at the seasons of weeding, reaping, or transplanting. That seems to me to mean that on whatever basis the wage census is taken, it will be necessary to distinguish between those who are permanently and those who are occasionally employed.
- (c) In question 44 reference is made to extra payments received at harvest. These payments made at harvest are in the nature of bonuses and must clearly be taken into consideration in calculating the wages. The simplest plan, I think, would be to add them to the wages of the month in which they generally occur.
- (d) In question 45 various methods of paying wages are mentioned as follows :
 - (a) wages in kind.
 - (b) wages in cash,
 - (c) wages partly in kind and partly in cash.

The list however is not complete. In some districts, I understand, there is also a method of paying wages in service or land—for instance, a ploughman is allowed, in part payment for his services, to use the plough and plough-cattle of his master for his own fields. In this case obviously wages are partly paid in service. Again, a permanent agricultural labourer may receive no wages in cash or kind at all, but be given in lieu a plot of land either rent free or at a nominal rent ; or he may be paid partly in this method, partly by wages in cash or kind, and partly by service. The difficulty before the committee therefore is not merely that of translating payments in kind into terms of cash, but also translating payments in service and land into terms of cash. Obviously in such circumstances it is impossible to lay down any definite standard for conversion. The only possible method is establishment, by as many instances as possible, of the wage rates when paid in cash alone, and to assume that wages paid in other commodities are worth very much the same as wages paid solely in cash. The difficulty however I imagine will be,

- (1) that cases of wages paid solely in cash will be relatively rare,

- (2) that *ceteris paribus* wages will be paid in cash to casual labourers ; whilst permanent labourers will be paid partly at all events, in other ways.

In question 47 mention is made of supplemental payments. I think myself that the extra payments made at harvest should be regarded as of this nature. In this province, so far as I am aware, the only constant supplemental is the dwelling, which always goes with the holding. I have, however, heard of another supplemental which may interest the Committee, namely that paid in the north of Basti to transplanters. To the best of my recollection (I only heard this orally from an English landlord who told me that the payment was invariable) transplanters, when their work is finished, receive certain presents of sweetmeats and clothes. The sweetmeats, I understand, take the form of a sort of celebration dinner ; the clothes, I presume, are given because the clothes worn whilst transplanting are certain to be spoilt. I do not know whether this is a wide-spread custom or not, but it certainly existed in the north of Basti.

It may interest the Committee to have some details of the work of transplanting in the north of Basti. I may say that I am quoting the same landlord whom I have mentioned from memory—so that I cannot make myself responsible for exact details. These can be ascertained if necessary, but I have a vivid recollection of the main facts. Transplanting is a work which must be done as rapidly as possible, and is paid relatively high. Some of the transplanters are of course permanent farm labourers, but the other labourers are specially engaged for the purpose—many of whom are women. In every tract, certain people are known as expert transplanters and there is considerable competition amongst landlords and other employers of labour to obtain their services. There are some so expert that they can transplant with both hands at once. The plants are held under each arm and the planter takes a plant from under his left arm to be planted with his right hand, whilst at the same time he takes another plant from under his right arm to be planted with his left hand. It is, I believe, common for landlords to institute competitions between their gangs of transplanters, and even to bet upon the results. The winner usually gives his winnings to his transplanters. In the circumstances, it seems to me that the question of transplanters' wages is not going to be an easy one to handle, for—

- (a) high wages are paid for a short time :
- (b) the shorter the time, then to a certain extent the higher the wages :
- (c) there are valuable perquisites or bonuses in the shape of clothes, food, etc.

I have mentioned this instance mainly to make it clear to the Committee that the question of agricultural wages is one that bristles with difficulties.

With reference to questions 49 and 50, it appears to me that it is absolutely necessary to obtain accurate returns of the wages paid, at least once, and preferably at intervals of 5 or 10 years. That means a wage census carried out in the utmost detail—not by the method of samples, but by definite inquiries made in every village and from every

labourer. Until such a wage census has been taken, I am convinced that no returns will be of any value, because nobody can possibly :

- (1) work out the average for the various methods of payment that I have described,
- (2) ascertain the extent to which any particular method of payment is used, or even
- (3) ascertain what the methods actually employed are.

It is just possible that such a detailed wage census might be taken in conjunction with the census of population. My experience is that it is possible to obtain almost any type of information in connection with the census of population simply because the people have long lost any suspicion that they had of that census, take a very real interest in the operations, and are willing to give any help that is required. I think, therefore, that one could collect information at that particular time without rousing suspicion, which could not be collected at any other time without rousing suspicion.

In reply to question 51, I think it will be impossible to ascertain the hours of work of agricultural labourers. They work when and as required, or when and as convenient—for instance, in Basti at all events, much irrigation work is done at night.

In reply to question 48—if a complete wage census of the type that I have suggested is carried out, then I can see no difficulty in using the median, the mode and the frequency distribution all together. I am not aware how the wage census of Bengal and Punjab are carried out. But certainly if they are carried out in the same method as they appear to be carried out in the United Provinces, I should say that the individual instances available are too inadequate for any statistical deductions to be based upon them. In fact, I regard wage statistics as practically non-existent, at all events in this province.

Questions 52 to 56.—What I have said above with reference to agricultural labourers applies *mutatis mutandis* also to village craftsmen. In the United Provinces the only two craftsmen for whom figures are returned are carpenters and blacksmiths. I venture to suggest certain others :

- (1) herdsmen, shepherds, goatherds, etc ;
- (2) barbers ;
- (3) leather workers ;
- (4) scavengers ;
- (5) village doctors and midwives ;
- (6) rice pounders and flour grinders ;
- (7) village watchmen and servants ;
- (8) potters ;

There are of course others who can be found in some villages—for instance, oil-pressers, grain parchers, basket-makers, grocers and so on ; but their occupations cannot be regarded as village occupations. They do not exist in a majority of villages and for the most part will be found in small country towns.

Professor DORI LAL DUBEY, M.A., Professor of Economics,
Meerut College.

Written statements.

No. 1.

Question 1.—The list is sufficiently comprehensive to determine the economic condition of the people, but for different professions different kinds of enquiries will have to be made.

Q. 2.—The classification of rural and urban occupations adopted by Sir E. Gait is not very happy. The object in view here is to enquire into the relative economic positions of different sections of the community. I suggest a more natural classification.

A.—I.—Rural: (i) Rent-receivers and owner cultivators. (ii) Tenants with secure rights such as occupancy tenants, fixed-rate tenants, or pattadars, etc. (iii) Tenants without any security of rights. (iv) Professional and ordinary agricultural labourers. (v) Money-lenders (even where it is followed as a subsidiary profession). (vi) Grain-storers or any other exportable commodity dealers.

II.—(i) Professional breeders who control large supplies (ii) Local dealers and fishermen and hunters.

B.—I cannot say much on the grading of professions in the urban areas. But a more suitable classification to weigh economic strength would appear to be to divide them into four classes: (i) Upper classes (ii) Upper Middle (iii) Lower Middle (iv) Poor classes (v) Unproductive. It is sufficient that population census gives us vocational distribution of the population. An enquiry should be made after grading the classes in the manner above outlined. In many cases particular castes would afford very good units for enquiry.

Q. 3.—Not only provinces, but even districts may be subdivided into distinct circles, each possessing special characteristics in production markets, etc. For instance, I can divide my part of the country as follows: (a) Jumna canal irrigated areas (b) Ganges canal irrigated areas (c) Dry or well irrigated areas (d) Khadar or lowlands of the Jumna and the Ganges. All these tracts possess more or less distinct productive characteristics. Any experienced district or Settlement officer, or an intelligent zemindar can give these natural divisions. I, therefore, do not approve of any other suggested divisions or circles.

Qns. 5-8.—The returns of area and crop are good so far as they go, but even the shrewdest and the most intelligent man cannot give a fair estimate of the yield. Sometimes crops yield much less when harvested than is expected of them. Average yield can, however, always be known. There is a round of good, bad and indifferent years for the cultivators and the latter know it. It is necessary that we should have in our possession figures regarding the normal produce of all these circles. Crop-reporting is likely to be more accurate in that case for it can easily be known from enquiries in different circles whether the year is a good, bad or ordinary one. Occasional checking by Senior Revenue officials of the crop-reporting work of their subordinates will tend to make the figures more reliable.

Q. 12.—She-buffalo, cow and goat are used in Northern India for the supply of milk and ghee. My part of the country is specially important for the supply of ghee which is mostly obtained from she-buffalo. At the

time of Cattle Census, we can not only have information regarding the numbers, but also regarding the lactation period of different cattle, as also regarding the approximate amount of milk and ghee obtained from them in one season.

Q. 35.—We should not only know the total number of working days, but also the number of working hours and the shifts, and the number of casual labourers. If possible, local capital, capital belonging to other provinces, and to foreign countries should also be shown.

Qns. 37-39.—In order to complete information regarding cottage industries, we should also keep a record whether the industry is permanent or only seasonal, for what amount of time the industry is worked, what are subsidiary industries or professions, what amount of help is got from other members of the family or dependants (whether $\frac{1}{4}$ or $\frac{1}{2}$ of a full labourer), what is the range of market of the industry. In many cases average produce for a whole year will have to be found out.

Qns. 40-51.—The prosperity of all kinds of agricultural labour depends directly upon the prosperity of agricultural production which again depends upon the turn the two monsoons take. Agricultural workers can best be divided into Permanent, Casual and Professional Labourers. The different kinds of wage-payment that exist in the country in the case of different crops for different kinds of work must at least once be ascertained. Kind payments may be turned into cash at the ruling market rate at the harvest time. Other rights and privileges that labourers enjoy from their agricultural employers should also be enquired into. It must also be ascertained what kind of agricultural work is available in different seasons and in the case of different crops, what kind of non-agricultural work is undertaken to supplement the main sources of income, what addition is made, and by what sources, to the family income by the female and younger members of the family. Typical enquiries of this nature once made in different areas will require to be reviewed at very long intervals. I may say that there is absolutely nothing in common between industrial and agricultural labourers so far as hours of work are concerned. Any amount of outdoor agricultural work promotes health. It is the general belief that idle and lethargic people fall ill. Recreation of agricultural workers consists in occasional smoke during working hours or gossiping. The above remarks mostly hold good in the case of village artisans too.

As regards industrial labour, I am of opinion that every five years an all-India statement dealing with its conditions in different industries and different industrial centres should be issued to the public which may include an account of wages paid, cost of living, organisation of labour, labour legislation, increase or decrease in the number of skilled labourers, relation of labour to capital, regularity of employment, conditions of housing, main currents of labour migration and other things connected with the problems of labour in India.

Qns. 62-67.—It is very difficult to get accurate statistics of income of an agricultural population. Money income figures, moreover, obtained by the various methods described in Q. No. 63 would not be a true measure of economic prosperity and strength of different classes. Differences in prices and conditions of life in different parts of the country make considerable difference in the relation of money income to economic prosperity. In villages for instance it is very difficult to convert into money income the value of all those services that require merely a small expenditure of time

to be made available, *e.g.*, fuel, vegetable, ordinary house repairs, fodder for cattle, sometimes a part of materials for clothing, and numerous other things that go to measure economic prosperity. If an intelligent worker may stir out of home, or engage himself even at home, for a couple of hours, he can without much difficulty have two annas to his credit. It is necessary to include the value of all these services in income. Family is the best unit for determining income, and for most of the agricultural classes a whole year would be the best measure of time. For the purposes of comparison of rural wages with urban wages rupee should be discounted in the case of the latter, for in rural areas things can generally be obtained directly from the grower. If a Production or Income Census is once taken, the best way to correct it would be to get family budgets of consumption of different classes of persons, for most of the classes in India live from hand to mouth and consequently there are very small savings.

Qns. 68-75.—Whatever method may be adopted for computing the total national wealth of India, it would be highly interesting to collect figures regarding the housing conditions: how many people have their own houses and how many rented ones, how many live in mud-built and thatched houses and how many in well-roofed ones, and how many lead a life of wanderers. The fairest way of estimating the value of agricultural land is to capitalize the profits of the zemindars, say at the rate of 2 or 3 per cent. An approximate estimate of national wealth should suffice for the purposes of an economic enquiry, but steps should be taken to make a distinction between what are popularly known as productive and consumptive forms of wealth.

Qns. 76-82.—I am a strong believer in Family Budgets. Of the division of the whole community into different classes I have already spoken above. Typical family budgets of different sections of the community or of different classes of persons should be obtained from a variety of official and non-official sources. Revenue officials, those connected with the Co-operative movement, College Professors and Research Scholars of Economics at Universities, district and settlement officers, industrialists and workers in the social field are in a position to prepare estimates of different sections of the community if printed forms including a comprehensive list of items of family budgets are supplied to them. Such forms should be prepared in consultation with the requirements of each section of the community. Intensive enquiries from house to house should be made with the help of local citizens at least at a few places in each of the circles into which the country may be divided. At other places families may be selected as samples or at random, and their budgets prepared. Typical families are however to be preferred to random samples. Very competent men will have to be employed and very elaborate instructions will require to be issued for the preparation of these family budgets, *e.g.*, they will have to make distinction between annual normal essential expenditure and casual essential expenditure. The latter may include such items as litigation, ceremonies connected with births, marriages, deaths, and departures of daughters, purchase of cattle, or construction of houses. The expenditure on all these heads will have to be spread over a long period of time. Expenses of production will be kept apart from the expenses of consumption.

Such budgets should be prepared in a normal year when there are neither very high nor very low prices. In many cases a caste can afford a very good unit for making an estimate of the cost of living of all the members belonging to it. If budgets of 5 per cent. good, bad and indifferent families are prepared, they can give a fairly good estimate. Every item except saving either in the form of investments or deposits should be included in the family budget.

Qns. 83-86.—As regards indebtedness, family is the best unit for the collection of statistics. I am afraid it would be totally impossible to collect so detailed statistics as are required under Q. No. 85. It would be sufficient if it is known from the agricultural classes what is the normal debt that they owe, at what rate of interest and on what security they borrow it, what are the purposes for, and the sources from which they generally borrow it, at what times do they usually borrow briskly, whether the debt repayment usually does not synchronise with harvesting. Typical intensive enquiries in villages in different circles will afford sufficient workable data to draw broad conclusions for an economic enquiry.

Qns. 87-93.—An initial survey of the kind proposed would be good, provided the country and its population are well classified into distinct circles and classes respectively, but it appears that it is very difficult to obtain even fairly reliable results from such an enquiry.

I now want to make a few general observations. The population in different countries of the west is more or less homogeneous ; rural population in India is heterogeneous ; it is no less so in the Indian towns. Where soil is fairly fertile, facilities for irrigation are fair, labour is easily got, agricultural classes can get all the necessaries of life in abundance and they enjoy full measure of economic prosperity. But where the zemindar is a little unscrupulous, or the rent and interest charged are high, there is bound to be litigation, indebtedness, poverty and all that the latter implies. I am inclined to think, however, that if the accounts given by Rowntree in the "Poverty and Town Life" are correct, our agricultural and labouring classes enjoy no less economic prosperity than the wage-earning population of England does. As regards the agency for the collection of statistics, there is vast room for improvement in the present methods of statistical collection. In my part of the country Revenue settlements are made periodically. If a Master of Economics or a specialist in statistics could be associated with the settlement officer, and provided a little extra facilities for consultation, the former could collect most reliable information regarding rural areas. Such enquiries will have to be reviewed in a generation. The present polling stations for election purposes can also be made rural centres for the collection of statistics.

No. 2.

A TYPICAL RURAL ENQUIRY.

This enquiry relates to a part of the country which is primarily agricultural, where single big estates are practically non-existent, where self-cultivation by the landholders is mostly prevalent, where artificial means of irrigation are fairly abundant and which is consequently less subject to famine conditions. I want to confine my attention here to two broad agricultural classes, namely : (i) landholders and tenants with security of tenure, (ii) tenants-at-will. From what I have been able to gather as a result of my enquiries in a typical village—and I have taken care to verify

the results of my enquiries in a number of villages. I can observe that the unit of cultivation in the agricultural areas is a plough. They call it one-plough cultivation or two-plough cultivation, and that gives you an idea as to what is the position or *haisiyat* of the cultivator, whether the land under the cultivation is the personal property of the cultivator, or he enjoys some sub-proprietary right therein, or he is only a sub-tenant or tenant-at-will. These differences matter a great deal in determining his economic position. The size of an economic holding in my part of the country is from 40 to 60 kacha bighas (from 8 to 12 acres). A holding smaller than 40 bighas proves costly and inefficient and a holding larger in size than 60 bighas is regarded as unwieldy and requires the investment of larger resources. I would here state the average produce of the one-plough cultivator, deduct from it the wear and tear of the existing wealth, show how net dividend is distributed among the various factors of production, and what ultimately remains with the cultivator and how he disposes that of. While at it, I want to make one more important remark in connexion with the produce obtained from different units of cultivation. It is generally believed that one-plough cultivation is the most productive unit, and therefore the best, two-ploughs cultivation is also good, but cultivation of more than 25 acres or so by one family with help of hired labourers is not very remunerative. The more we extend the area under cultivation, the greater is the loss of all those advantages which we get from the intensive cultivation of a small area.

Gross Produce.—One-plough cultivator in my part of the country, who has got 50 bighas or 10 acres of land to cultivate, generally distributes his land on different crops as follows : 15 bighas on sugarcane, 20 bighas on asari or wheat crop, and the remaining 15 bighas on sawai or kharif crop. The latter area alone is double cropped area, and generally fodder crops are the second crops. It is believed that attempts to take double crops from the fields intended for growing rich crops (cane and wheat) result in decreasing the nourishing capacity of the soil for the latter crops, in many cases time taken by the rich crops does not permit of double cropping. Consequently the practice is not generally resorted to. Where it is persisted in, inevitable results follow. From one bigha of cane crop, we get about 10 kundis of juice, each of which gives about 22½ seers of gur. The total quantity of gur obtained from 15 bighas is about 80 maunds, which on an average sells for about Rs. 480. The 20 bighas of wheat crop give us about 55 maunds of grain which sells for about 220 rupees. The remaining crops are intended mainly for obtaining fodder and grain for the cattle. In some years this crop also gives the cultivator cotton which the latter so urgently requires for the clothing of his family. It need hardly be said however that this crop has no importance to the cultivator as a source of income, in fact he never counts on the produce of these crops except for the supply of fodder for his cattle. The value of these crops may however be averaged at Rs. 100 annually. The outside world generally believes that the cultivator has both, the grain and the straw. It is only a bare fact that the cultivator has only the former, the latter is only sufficient for the up-keep of his living stock. Even official records corroborate this view regarding the self-sufficiency of the cultivator in respect of his fodder-supply. The idea seems to be abroad that the she-buffalo of a cultivator is a great source of income to him. It is not so. The retention of a she-buffalo is a physical necessity to the cultivator's family. The family requires all its products, milk, butter, curd and all other things. A

surplus for sale is available only when richer diet is given to the she-buffalo. Then every two or three years the cattle grows old and is replaced. It fetches only half the purchase price. Taking the price of young ones also into consideration, let us have Rs. 20 as the income from keeping a she-buffalo, but I daresay an agriculturist would never yield on this point. The total gross income of the cultivator thus comes to Rs. 820.

Wear and Tear.—The capital of an agriculturist are his seed, living stock (including his pair of bullocks, a she-buffalo, one or two young ones of the latter or of the cow, in some cases also a cow), a cart, plough and various other tools and implements. A pair of ordinary average plough-bullocks can be had for about Rs. 400 in these times. That serves on an average for a period of 8 years. It cannot sell for more than Rs. 100 after serving for that period. Thus the wear and tear of bullocks comes to about Rs. 35 per year. A new cart can now be prepared for about Rs. 150. Its frame can work for 30 years, if necessary repairs are made in it costing about Rs. 7 annually. But the pair of wheels requires to be changed every 7 or 8 years, and generally costs about Rs. 60 for replacing. The cart thus costs the cultivator over Rs. 20 annually. All cultivators may not keep carts, but the majority does, those who do not, suffer in efficiency. Seed of cane they do not purchase annually, but preserve from year to year, but whenever once in 3, or 4 years it becomes rotten, they get it at the rate of about 3 rupees per bigha. The average expenditure may be kept at Rs. 10 annually. What crop seed requires the expenditure of about one rupee per bigha or Rs. 20 in all. On the remaining two fodder crops, the expenditure on an average is 8 annas per bigha or Rs. 15 in all. Adding to all these, Rs. 5 for wood, 5 for iron tools, and Rs. 10 annually for water-lifting implements, the total wealth destroyed by the cultivator annually during the process of production comes to about Rs. 120. The net produce thus got comes to Rs. 700 annually. Let us now see how this wealth is shared among the different agents of production.

Distribution among Agents.—The net dividend is distributed under the following heads : (a) Permanent labour (b) Casual labour (c) Rent or revenue (d) Interest on loans (e) Irrigation charges (f) Customary obligations (h) Grower's earnings.

(a) A plough-man is a necessity to a one-plough cultivator. The former costs the latter about Rs. 100 annually (including pay, interest on advance money that the ploughman generally takes, cost of grain, gur and a certain amount of clothing).

(b) Casual labour is required for a number of purposes, the main of them being connected with the cane crop operations. Thrice harrowing costs Rs. 20, another Rs. 5 are spent on certain other operations before harvesting. Boiling charges come to about $2\frac{1}{2}$ annas per kundi or Rs. 25 in all. Excluding several other kinds of work for which the cultivator pays in kind, let us include Rs. 10 in casual labour paid to different members of menial classes such as potter, washerman, blacksmith, carpenter, barber, sweeper, waterman. The total casual labour charges thus come to Rs. 60 annually.

(c) If a landholder, the cultivator pays about Rs. 50 as revenue, if occupaney tenant, he pays Rs. 100 as rent, if a tenant-at-will he pays at least Rs. 200 as rent annually (provided in half the land under his cultivation he enjoys security rights).

(d) The average cultivator remains indebted to the Sahukar to the extent of more or less Rs. 200. If a landholder can borrow money at the

rate of 12 per cent., the tenant with security of tenure can have it at the rate of 19 to 24 per cent., and the tenant-at-will at the rate of from 24 to 37½ per cent. Thus the three kinds of cultivators pay about Rs. 20, 40 and 60 annually as interest.

(c) The rich crops require irrigation, cane Rs. 25, wheat crop Rs. 25. Sometimes additional labour is required to lift water from the wells when rain or canal water is not available at the proper time. The total irrigation charges thus come to Rs. 50 annually. The irrigation charges in the case of tenants-at-will are sometimes higher. To their lot fall the worst qualities of land where produce is less and expenses under every head are very high, except under permanent labour. One more remark may be made here on the dependence of agriculture here in these areas on canal water. So much produce would not be possible if canal water were not available, and the tendency now is towards diminishing yield, in spite of the existence of the canals.

(f) Annual payments to such persons as village patwaris, canal patrols and others come to about Rs. 10 annually. Thus the total under these heads is Rs. 360. Thus produce to the extent of Rs. 340 is left for the use of the family of the cultivator. He retains a portion of that produce for home consumption and the rest he disposes of in order to get other articles of every day necessity in exchange.

Family Budget.—Let us now throw a glance at the family budget of the selfsame cultivator. On an average they are five members of the family (husband and wife, two children one old male or female). The ploughman is also half the member of the family for he enjoys his sufficiently heavy breakfast at the expense of the cultivator. They do not consume (both as flour and pulse) less than 35 or 40 maunds of grain in one year the cost of which comes to about Rs. 140. The quantity of gur required for home consumption is generally 5 maunds or so costing about Rs. 30. However much these cultivators use cloth made of yarn spun at their own home, they do purchase dhoties, cloth of a finer character, shoes, and other like things to the extent of Rs. 25 annually, and pay to the weaver, dyer, and tailor the sum of Rs. 10 annually on an average. Light demands another rupee per month, and house utensils of 8 annas per month are worn and torn. Tobacco charge is Rs. 10 per year, and salt, vegetables and other condiments are certainly purchased to the extent of Rs. 12 annually. Medical aid, even though very rarely required, does take away Rs. 10 annually. Travel by rail and other conveyances has become rather very cheap and however frugal the cultivators, they do spend another Rs. 10 on the same. A roofed house does not cost less than Rs. 150 and serves for the lifetime of a generation. At any rate, the charges under shelter do not come to less than Rs. 15 per year including house repairs and periodical thatching charges. Yet the two most important heads of expenditure which shake the rural classes from their very foundations still remain to be mentioned : (i) expenses connected with the ceremonies of births, deaths, marriages, departures of daughters, (ii) litigation. The minimum cost of the former ceremonies is not less than Rs. 1,000 per 20 years. I daresay it is infinitely more. The average thus works out at Rs. 50 per year. (ii) The anxiety of the cultivator for retention of his existing rights in the land, and the prospects—more or less of a doubtful character—of the accrual of some security rights in any further piece of land sometimes lead the cultivator to the road of ruin. Litigation in many cases proves the cause of ruin

of the cultivator, for he stakes his all to win a suit. Some litigation is unavoidable. If the cultivator litigates thrice during a period of 20 years, and spends Rs. 200 on each occasion, the average per year comes to Rs. 30. (The habit of fighting the issue to the final appellate court is general). Adding all these items and providing a paltry sum of Rs. 10 per year for miscellaneous contingent expenditure, we arrive at the figure of Rs. 370. Thus we find that the cultivator struggles hard. He ekes out a miserable living. He lives from hand to mouth. There is a round of good, bad and indifferent crops. Bumper crops sometimes enable him to start with clean slate, but bad years break his back-bone. When he has another adult male member in the family or an ox bred at home; his expenses under labour and wear and tear are sometimes reduced. His position is also improved when he can have a little more land on fair rent, for that increases his wealth without much increasing the cost in other respects.

7. But when all is said and done regarding the economic condition of the agricultural classes one thing has got to be prominently borne in mind, namely that agriculture in India is after all a gamble in rains. The industry is subject to the highest kinds of natural and artificial fluctuations which no other industry can possibly bear. From nature down to the little white ant all can do the cultivator greatest possible injury in his agricultural work. There is no limit to his calamities and misfortunes. There are a hundred and one ways in which heavy odds are placed against the agriculturist. Death of his cattle, scarce, immoderate and inopportune rains, or want of canal water, hail or frost pests, strong or unfavourable winds, fall in prices at the harvest time (which is a usual phenomenon in India) or rise at the time of sowing, entanglement in some unnecessary litigation, high rents or high rate of interest, casual necessity to purchase fodder or other articles of agricultural or personal consumption—all these are some of the more important factors which sometimes hit the cultivator very hard.

No. 3.

HEADS UNDER WHICH ENQUIRIES INTO RURAL AREAS CAN BE USEFULLY MADE.

1. *Population.*

Number of members in the family, age, sex, civil condition : number of births, deaths and marriages in the last 20 years.

2. *Area.*

Total area, cropped area, waste, cultivable waste, total revenue, total rent, total irrigation charges, comparison with conditions a few generations back.

3. *Holding.*

Extent, number of fields, own, with secure rights, irrigated (well or canal), or dry, total number of fields in the village by what number they have increased during the last few generations.

4. *Crops.*

Area under different crops, double cropped area, changes in crops in the last few generations, average yield per bigha, whether increasing or decreasing.

5. *Labour.*

Permanent, casual, agricultural and non-agricultural, kinds of agricultural and non-agricultural work available in different seasons and parts of the year, privileges that labourers enjoy from their agricultural employers, shape in which they get their wage-payment.

6. *Professions.*

Kinds of work performed by female and male members of the family main profession, subsidiary professions.

7. *Cattle.*

Number, price, homebred, purchased, length of life of each cattle, extent of the rise in prices of cattle during the last one generation, quantity of milk and ghee they give in one season.

8. *Other agricultural materials.*

Carts, ploughs, lifting materials, number of agriculturally suitable wells in the village, extent of the rise in prices of those materials.

9. *Indebtedness.*

Debt owed, rate of interest, security, purposes of borrowing, different systems of loaning, total indebtedness, total interest paid, number of money-lenders, extent of their loaning operations, the range of interest charged by them.

10. *Housing.*

Condition, number, thatched, roofed, parlours, cattle yard, manure godowns and cane-pressing mill houses, etc., number of houses built during the last 20 years.

11. *Litigation.*

Number of suits fought during the last 20 years, cost incurred, purposes for which litigated.

12. *Subsidiary products and free gifts.*

Fodder, milk, ghee, young ones, fuel, manure, vegetables, cotton for clothing, hemp, cotton seed, often times timber.

13. *Artisans and craftsmen.*

Their number, the number of full-plough cultivators whose work each of them does, the amount of cash and kind they get, the amount of time they get for non-agricultural work, and the extent of gain therefrom.

14. *Total gross production.*

Wealth destroyed, rent, interest, labour, other charges, earnings of the grower.

15. *Exchange.*

Methods of purchasing, system of marketing produce, time of sale of the produce.

16. *Family budget.*

Part of produce retained for personal consumption, amount of produce got from the home farm for personal consumption, other items.

17. *Windfalls or misfortunes.*

Chronic, casual, artificial, natural, their periodicity.

18. *Social and economic customs.*

The Hon'ble Mr. S. H. FREMANTLE, Finance Member, Government of the United Provinces.

Written statement.

Questions 2 and 3 of the questionnaire.—I agree in Mr. Blunt's views.

Question 5.—The statistics of outturn depend on (a) area, (b) normal yield, (c) estimates of yield of each year.

As to (a) in these provinces there is an elaborate system of land records and the estimates of area under each crop are approximately correct.

As to (b), crop-cutting experiments are made in 17 districts mostly by Deputy Collectors but partly by officers of the agricultural department. Such estimates are made for 15 different crops : but in each district experiments are made for only four or five different crops. For each crop crop-cuttings of one-tenth of an acre are generally made. The orders are that the tract should be typical and that the experimenting officer should choose the crop which after looking round he considers to be a fair average specimen of the season's harvests. When the statements are received, very high and very low estimates are struck out and moderate estimates are taken and averaged. It is also seen whether the class of soil shown in the statements is typical for the particular crop. At the expiry of five years the estimates so found are discussed and the question whether the normal yield should be altered on account of these estimates is considered. The normal yield was apparently first made out in 1892 and has been open to revision at five quinquennial periods since then : but, except in the first quinquennial period there have been only two or three alterations of minor consequence. It is, I think, not surprising that the Director of Agriculture has not found these estimates to give a result definite enough to justify him in altering the normal yield. A perusal of some yearly statements which were obtained from the office of the Director shows the following :—

- (i) In several years the estimates were quite useless for a calculation of the normal yield because of the exceptional character of the year.
- (ii) It was very frequently the case that the experimenting officer chose land which from the settlement classification was obviously much superior or inferior to average land. From a perusal of the statements it seems quite clear that the instructions to look around and then choose the crop which is considered to be a fair average specimen of the season's harvests were not generally observed.
- (iii) Where the land chosen was as shown by the classification to be of average fertility and there was nothing abnormal in the season, I think that high or low estimates should not have been rejected in tabulating.
- (iv) The result of the system as worked at present is that in the case of wheat, for instance, all estimates which are within about 250 lbs. of the normal (1,050 lbs.) either way are accepted and the rest rejected. It seems very much a matter of chance in these circumstances whether the average for the year which

is expected to be used for revising the normal yield is above or below 1,050 lbs.

- (v) It is undoubtedly the case that during the last twenty years the yield of wheat, and to a less extent sugarcane, has increased on account of the new varieties and improved methods of cultivation introduced by the agricultural department, but such an improvement is not reflected at all in the normal yield. I feel that crop-cutting experiments provide very unsafe data for calculation of the total yield.

As to (c), the estimate of the season's yield shown in the crop forecasts is derived as follows :

There are a large number of unofficial reporters who at the time of each forecast make special reports of the condition of certain crops. These are averaged in the Director of Agriculture's office and the estimate of the district officer of the condition of the crop as reported monthly, is compared. The estimate used in the forecast is based on the above two figures after comparing those of the neighbouring districts. On the whole, I think it to be fairly accurate.

Question 6.—I am inclined to think that the normal yield could be better ascertained for each district by making enquiries in an average year through selected kanungos who would be instructed to ascertain the actual average outturn in average villages to be selected by the district officer.

Question 7.—In these provinces the areas under minor crops are known and in some cases are shown in the Season and Crop Report. I think that it would be quite possible to apply to these minor crops the same system of estimate of yield as has been recommended for the main crops in reply to question 6. In the case of vegetables other than potato the money value would be easier to ascertain than the yield.

Question 9.—The quinquennial census of cattle, etc., is considered in these provinces to be fairly accurate.

Question 10.—Reliable statistics of the products named could not be obtained by any kind of enumeration. It would be best to calculate their quantity and value from the number of each class of cattle from which the yearly wastage could be calculated.

Question 12.—I do not think any reliable information is obtainable as regards any of the products named. The estimate of the amount of milk production could be made by local enquiries as to the average yield of cows in each district.

Question 23.—There are no minerals in this province of any importance except (a) building stone in Mirzapur, Bundelkhand and Agra; (b) kankar in most district, (c) tuffaceous limestone in Dehra Dun.

Question 38.—I think that a census of production relating to cottage industries might be made by patwaris in communication with the Industries Department.

Questions 40-51.—I agree to Mr. Blunt's reply except that with reference to questions 49-50 I do not believe that a wage census made either at the time of the regular census or at any other time would be of much practical value. It is impossible for any enumerator to ascertain from a large number of the individual agricultural labourers exactly what remuneration in cash or kind each has received during the year and no shorter

time would give a fair result. I think that such matters can only be ascertained by careful and patient enquiries by trained investigators and that the only means of obtaining reliable information as to agricultural wages is to have enquiries made in typical villages by such trained investigators as stay long enough in the village to get into the confidence of the people and so are enabled to get accurate information.

Question 51.—The hours of labour of agricultural workers—I believe the almost universal custom is to work from sunrise to sunset with two hours off in the middle of the day. This is a matter which could easily be ascertained by enquiry from those who have direct knowledge on the subject.

Questions 52-56.—The returns in the two wage censuses which we have had are very vague indeed and are really only useful for comparison with similar statistics of former censuses. I doubt if it is possible to get anything much more reliable.

Questions 57-61.—The statistics now published of wages in large industrial establishments are somewhat misleading, especially in the case of piece-work because they show the average wage received by all the workers in the department without considering irregularities of attendance. It would in my opinion be quite possible to get accurate statistics of the average wages received by regular workers through the factory inspectors. I do not think that large industrial establishments would object to their books being examined for this purpose.

Questions 62-67.—I have not seen the data on which most of the estimates mentioned in Appendix I have been prepared, but one of the best known (No. 3 on which also is based No. 8) was arrived at by calculating agricultural income according to estimates of yield and adding 50 per cent. on account of industrial income. This seems very vague indeed and I have no doubt that nearer results could be obtained by more careful estimates of production than this. I do not think that a census of income is practicable and consider that the basis stated in question 63 (b) is the only possible basis. The period of time should be a full year, financial or agricultural, as may be found most convenient in practice.

Question 68.—The inventory method seems the only possible one.

Question 70.—Agricultural land should be valued for this province for each district on the basis of a multiple of the land revenue after enquiry from district officers who would take into consideration the average sale price reported and other necessary factors.

Question 71.—I would value buildings in villages by a rough estimate of the cost of their construction in labour and materials actually paid for. I would exclude the value of materials and labour when not paid for.

Questions 73 and 74.—I would not advise detailed enquiry in respect of any form of public wealth.

Question 76.—The only reliable method for measuring variations in the cost of living in either urban or rural area seems to be by the preparation of family budgets.

Question 77.—The Bombay index numbers will not apply properly to other parts of the country for the reason given. The index numbers would have to be prepared separately for other towns and tracts.

Question 78.—Family budgets should be prepared for typical families as proposed in (b).

Question 79.—One year would appear to be sufficient.

Question 81.—I think that such expenditure should be shown, but treated separately from necessary expenditure.

Question 82.—I do not think it is a fact that statistics of prices are generally unsatisfactory and unreliable. I have examined a number of the figures included in tables 15 to 18 of Prices and Wages in India and it seems to me that the record of prices in this province at least is fairly accurate. I do not know how it can be improved.

Question 84.—I think the household must be taken as the unit.

Question 85.—I think the proposed enquiry is unnecessarily elaborate. I would omit (i), (ii), (iii) and attempt to find out only the outstanding debt.

Question 86.—I think that enquiries into indebtedness should be conducted by the Co-operative Credit Department and that it should be made by intensive enquiries in average villages in the different tracts included in a district.

Question 87.—Sec. 1 (b). I do not think, as already stated, that a census of wages is a practical proposition.

Question 88.—Sec. 2 (a). The total production of the village should be ascertained through the agency of the Land Records Department.

Question 90.—Sec. 2 (b). I would ascertain wages by intensive enquiries, also through the Land Records Department, or by any other agency which may be at the disposal of the proposed statistical bureau.

Questions 91-92.—The enquiry into income, indebtedness and cost of living should be by intensive study and the agency should be determined by the proposed statistical bureau.

Questions 98-99.—I agree with these proposals.

Question 102.—I think that there should be central and provincial bureaux of census and statistics. I am not sure whether branch offices in districts would be required. For each province a board of economic enquiry should be constituted to work in collaboration with the statistical bureau in order to take full advantage of the universities and other non-official bodies and persons who would be ready to assist in economic research and enquiries. Such enquiries can in my opinion be only successful when the enquirer is a person who is prepared to live for some time among the people and so have an opportunity of gaining their confidence and acquiring accurate information regarding their circumstances.

Mr. R. MILNER-WHITE, I.C.S., Deputy Secretary to the Government of the United Provinces, General Department.

Written Statement.

COST OF LIVING.

Question 76 of the questionnaire.—The preparation of index numbers based on the varying prices of commodities principally consumed by different classes, weighted in each case according to the relative importance of those commodities to each class or section of the population is the obvious method of measuring variations in the cost of living. Fairly accurate figures can be obtained by collecting family budgets and using them to fix the list of commodities and to assign the weights. It may, however, be observed that this method takes no account of any rise or variation in the *standard of living*. There appears no reason why urban and rural areas should be treated differently.

Question 77.—The “mass-unit” system provides a good general indication of the trend of prices throughout India, but obviously it is never accurate for any particular class or any particular locality. It is, however, simple and until family budgets are collected in sufficient numbers it is better than nothing. It must be recognised that the use of family budgets has some objections owing to the large number of different classes and communities and their different modes of living in the different parts of India. This necessitates the preparation of a very large number of different index numbers.

Question 78.—Presumably this question enquires which of the three alternative methods is considered most suitable. The first is obviously the most satisfactory if it can be done, but it is probably impracticable owing to the enormous labour involved. The third method is the more practicable provided that a sufficient number of random samples is obtained to enable a typical family to emerge. The second method seems to beg the question. Until the information has been collected it is not possible to isolate a typical family.

Question 79.—A year is the most convenient unit of time. A smaller period might fail to allow for seasonal variations and expenditure on items like clothes, which have a fairly long duration. A longer period is probably impracticable.

Question 80.—Five hundred authenticated budgets should suffice irrespective of the strength of the class to which they pertain.

Question 81.—The use of drink and drugs is apt to become a habit and in some classes is the rule rather than the exception. Expenditure on these items should therefore be included. The other items are in general indulgences which vary according to the financial position of the moment and are therefore not constant. Variations in cost in respect of these items are also very difficult to measure. So in measuring the cost of living these latter items can be disregarded, but of course information on these points is valuable from other points of view in an economic enquiry and if genuine figures can be expected, it is all to the good that they should be collected.

Question 82.—The grading of commodities can only be done by enquiry as to the most common and easily classified varieties in the market. An attempt to standardise the grades was made in this province in 1921.

Wholesale prices can best be reported by wholesale firms. Retail prices are more difficult to obtain, and probably the tahsildar is the best agent for this purpose, provided that his figures are more carefully scrutinised and checked. In urban areas the income-tax officer might be used as a supervising officer as he is in intimate relations with retail firms and has access to their books. Price inspectors might be used as was suggested by the Government of India. The objection to their use is that they will be very costly and it is doubtful whether it will be possible for them to utilise their time profitably.

UPPER INDIA CHAMBER OF COMMERCE.

Written Statement.

Before considering the questionnaire the Committee of the Chamber desire to state that the general economic enquiry referred to in Government Resolution No. 655-F. of the 22nd January—and to which your present enquiry is preliminary—is in their opinion, unlikely to be of any real benefit to the country. They do not consider that the proposed enquiry would secure results that would be of assistance to the business community, or of assistance to anyone, commensurate with the cost of carrying out such an enquiry. Having regard, further, to the time necessarily involved in prosecuting such enquiries my Committee fear that the results would, in these days of rapid development in industry, be out of date when they finally became available. The information obtained would thus be of merely academic interest, at most affording a basis of comparison with the results of some future enquiry or figuring in the history of the country's industrial development. My Committee therefore desire to say that they do not consider expenditure which they feel may prove so unproductive should be undertaken at the present juncture. To be of value moreover, even from the purely academic point of view, the enquiry should at least be reasonably exhaustive, and my Committee feel that the necessary completeness could not be assured in the absence of legislative powers compelling the production of such information as might be required. To such compulsion the Chamber would be strongly opposed.

Turning to the questionnaire, the only questions which are of interest to this Chamber are from No. 27 to No. 36. In regard to these my Committee desire me to convey the following views:—

Question 27.—Appendix F. (2), referred to in this question, contains a long list of industries for which it is said information does not appear to be regularly published. My Committee, however, consider that Government have at hand information relating to the following industries mentioned in this list, *viz.*:—

Hosiery Factories.—Those using cotton yarn pay cotton excise duty and statistics in connection with this are available.

Opium Factories.—These are entirely under Government management and statistics must be available.

Arms and Ammunition.—

Arsenals.—

Gun Carriage Factories.—

Mints.—

Postal Workshops.—

Sappers and Miners Workshops.—

Telegraph Works.—

} The same remark applies to these factories.

Question 28.—No.

Question 29.—It has already been said that my Committee are opposed to the acquisition of legislative powers compelling the production by employers of information regarding their business. Leaving on one side the question of the utility of the suggested economic survey, my Committee feel that it would prove a practical impossibility to ensure that the information furnished did not leak out to reach competitors both in this country and abroad

Question 30.—For practically the same reasons which influence them to oppose an economic survey of the country, my Committee are against the institution of a regular census of industrial production. They cannot envisage results to the community commensurate with the cost of such a survey, more especially considering the doubtful accuracy of results that could be compiled without legislation of an objectionable nature. Here too, they fear the results when available would be out of date, giving only a historical picture of the industry in the past.

Question 31.—In view of the answer to question 30 this does not arise.

Question 32.—In view of the answer to question 29 this does not arise.

Question 33.—In the opinion of my Committee it would prove impossible, even by heavy legal penalties, to prevent information reaching rival concerns.

Questions 34 to 36.—In view of the answers to questions 29 and 30 these do not arise.

Mr. W. H. WISER, Ph. B. (University of Chicago).

Written Statement.

Question 1 of the questionnaire.—I should like to suggest the inclusion of purchasing and marketing in your general list. Much of the economic status of village people can be discovered through uncovering the practices in purchasing seed, cattle, etc., and marketing their produce.

Question 2.—Seems comprehensive enough.

Question 3.—From the standpoint of this section of the United Provinces, Datta's classification looks best.

Question 7.—Yes, but only for limited typical areas.

Question 8.—Make special arrangements with the local officers for a limited number of type areas.

Question 10.—Arrange for special studies in type villages in each given area.

Question 11.—Bristles, lard.

Question 12.—Arrange for special studies in type villages in each given area.

Question 29.—Yes, but I would obtain the information indirectly through an Income and Expenditure Statement such as is prepared for the Directors of a Company.

Question 30.—Yes. Annual. It may then be of value to the very persons from whom you are requiring information.

Question 32.—Provincial.

Question 33.—The material need not go further than the office of the Local Officer.

Question 34.—Yes.

Question 35.—(b).

Question 36.—Daily output with full quota of staff and hands. Number of days working with full quota and approximate condition the rest of the year.

Question 37.—No.

Question 38.—To a certain extent.

Question 39.—The middlemen dealers can supply a good bit of information. The local jails also can contribute very valuable information regarding the cottage industries in which they are engaged. Where the jails foster cottage industries typical of their own area they can furnish much information.

Question 40.—Yes.

Question 41.—Make present system more efficient through intelligent supervision.

Question 42.—Use the Bombay Labour Office system, and make it uniform.

Question 43.—Can be worked out neither on monthly nor daily basis. Should be worked out as to the number of days labour per crop. Is there also not a fluctuation of wages paid per day, according to available labour ?

Question 44.—Yes, but use the crop as the unit.

Question 45.—Use the rate of the grain received, at the time of the harvest.

Question 46.—Would not the distinction of nearness to urban centres have something to do with variations in wages more than the matter of irrigation ?

Question 47.—By carefulness in collecting data.

Question 48.—Neither are worth much until the basic figures are more accurate.

Question 49.—Yes.

Question 50.—Yes.

Question 51.—Yes, by cross examinations as to the number of days spent on each of given fields, in ploughing, in planting, in weeding, and in harvesting. And the number of hours spent doing the same.

Question 53.—I doubt it.

Question 55.—Yes, by crops.

Question 56.—Only by observation.

Question 57.—If available through ordinary channels.

Question 58.—If there is a real need for these facts.

Question 59.—Month—because of absences.

Question 60.—Yes.

Question 61.—It would be impossible to state that a given man earned a certain amount each year, unless he is one of the few who has broken away from the village. It would be possible from the Mill records to get a man's yearly earnings. As a result of preparation of accounts for the award of bonuses to workmen at the end of the year it is possible to know what proportion of the men are stickers. Ordinarily bonuses are not granted to the men who make frequent trips to their villages. Some factories are making a careful study of labour turnover, and from them you may be able to get hints how to approach this problem best.

Question 62.—Part 1. Most certainly.

Part 2. Cease from making sweeping generalizations until more certain of facts.

Question 63.—Every family needs a certain subsistence allowance. If the family seem healthy and well they must be getting that allowance one way or another. When earnings cannot be definitely ascertained as in a factory, an intelligent investigator might fairly make an estimate.

Question 64.—The household.

Question 65.—By the harvest.

Question 66.—Adopt different units and convert.

Question 67.—Yes, because fuel is quite an item in city life

Question 68.—Experiment with each.

Question 69.—Add trees, fruit and fuel.

Question 70.—As a result of local enquiry.

Question 71.—Where there is an *actual* demand—the market value. Where there is no demand—the value of the transferable materials, such as timber, tile, brick, etc.

Question 72.—If there is a real demand for houses—on the basis of rent. If not—on actual selling value.

Question 73.—Not yet.

Question 74.—Leave it alone at present. Goldsmiths and Silversmiths might indicate present tendencies.

Question 75.—Yes, but make it clear that they are only estimates.

Question 76.—By comparison of certain essential commodities like fuel and wheat.

Question 78.—Use (a) for certain chosen villages.

Question 79.—Throughout the whole year. No one month or section of the year is typical. In a sense a decade or a generation is almost necessary, in order to get in the special expenditures and the "lean years".

Question 80.—Classify all villages and communities into types, such as good, medium and poor. The District Officers with very little guidance could do this easily. Then choose from each circle certain type villages and communities and rough estimates could be made as to the whole, with results that would be as accurate as any more general survey.

Question 81.—Yes.

Question 82.—Appoint honorary reporters among educated men. Pay them honorariums for time and trouble involved.

Question 83.—I have no faith in the *haisayat* statements of Co-operative Societies.

Question 84.—Household.

Question 85.—All right, if absolutely essential.

Question 86.—Both equally unreliable. I do not believe there will be much progress along this line until the people of India develop a conscience on this subject, or until they begin to get in debt for productive purposes rather than unproductive purposes.

Question 87.—If itemized according to previous questions it ought to be quite satisfactory.

Question 88.—No.

Question 89.—No harm.

Question 90.—They will be reliable if carried out by local officials of an educated grade or by local educated men who can supplement their personal knowledge by asking leading questions.

Question 91.—By (1).

Question 92.—No new agency. See Number 90.

Question 93.—A month for the preparation of the local agents and for them to note down information which is already theirs. The supplementary work of asking questions should take less than two weeks. The final drawing up of their facts would take another two weeks if done carefully and accurately.

Question 94.—Yes.

Question 95.—Yes.

Question 96.—Enough to lead to an adequate understanding of prices.

Question 98.—Yes.

Question 99.—No. Only for types, stating however the number of type villages in the area concerned.

Question 100.—A year book would be valuable.

Question 101.—Centralize systems but not the office.

Question 102.—Use existing District Officers with special Provincial Supervisory staff.

Question 103.—Yes.

Question 104.—Yes, so long as information is secured from organizations. The same power should not be extended over individuals.

Question 105.—No need for a new Bureau.

Question 106.—Locally.

Question 107.—Yes, but keep it on simple lines.

Question 108.—Yes, if not too elaborate.

CALCUTTA.

(*Note.*—Witnesses from Bengal, Assam, Bihar and Orissa and four witnesses of the Central Government were examined at this centre.)

Khan Bahadur MOHI-UD-DIN, Registrar of Co-operative Societies, Bihar and Orissa.

Oral evidence, the 11th April, 1925.

Chairman.—*Q.*—Could you kindly tell us what opportunities you have had of studying the economic condition of the people of your province ?

A.—I have had ten years experience in the Settlement Department as Settlement Officer and twelve years experience in the Co-operative Department.

Q.—How many co-operative societies have you got in your province ?

A.—This year the number will be over 6,000 for the whole of Bihar and Orissa ?

Q.—What is the total amount of money in circulation ?

A.—It will be about 1½ crores of rupees.

Q.—What class of people generally participate in the work of co-operative societies ?

A.—Our societies work almost entirely amongst the rural cultivators.

Q.—Do they conduct any other business besides credit, such as sales, purchases, etc. ?

A.—To an insignificant extent. They are mostly credit societies.

Q.—What about production ?

A.—We have bell metal ; but the production is insignificant.

Q.—Our work is to prepare a scheme for an economic survey of each province and the country generally. In what way can the co-operative societies help in collecting information regarding the economic condition of the people ?

A.—My idea is that the best and cheapest agency will be the co-operative societies. The reason is that if any other people approach the cultivators, they will never reveal the truth ; in fact, during my twelve years in the Settlement Department, I tried my best to arrive at the truth but they seemed to have some sort of fear that if they revealed the truth, they would be taxed ; and they would always say that their expenditure was more than their income. But they have got confidence in the officers of the Co-operative Department, to whom they would say many things which they would not tell anybody else. For instance, if I get two additional officers, say, on Rs. 150 to Rs. 450, I think I could collect figures quite approaching accuracy.

Q.—Do you think the Registrar with a small staff will be able to do this work ?

L71EEC

A.—So far as my province is concerned I have of course got Assistant Registrars for my regular work, but their own work is very heavy and I would not be able to spare them for this work.

Q.—Our problem is how to find money to meet the cost of this sort of work.

A.—I think for an important work of this kind two officers on Rs. 150 to Rs. 450 cannot be considered to be very heavy expenditure.

Prof. Burnett-Hurst.—Q.—Two officers for Bihar and Orissa alone ?

A.—Yes. I mean they should get just what the Sub-Deputy Collectors in our province get.

Chairman.—Q.—I suppose Sub-Deputy Collectors in Bihar and Orissa are equivalent to Tehsildars ?

A.—Yes, almost like them.

Q.—You think that with these two officers you will be able to collect the information ?

A.—Yes. Of course, they will be helped by other staff.

Q.—Assuming that we want a complete census of production, and probably of income, by house-to-house visits, can you give us a rough idea as to what other staff will be required ? Suppose you appoint enumerators ; how many houses will a man be able to deal with in a day.

A.—Just now my activity is confined to members of the co-operative societies, I cannot go beyond that.

Q.—Is not the number of members very small—and compared to the total population infinitesimal ?

A.—Considering that there will be about two lakhs of cultivators in our societies, if we can arrive at some data about their condition, I think it will give very valuable information to Government. I cannot go outside the range of my societies ; and I consider that an economic survey of the condition of the cultivators is the most important problem.

Q.—What is the total number of cultivators who are members of co-operative societies in your province ?

A.—It will be about two lakhs.

Prof. Burnett-Hurst.—Q.—Out of a total population of ?

A.—34 millions.

Q.—That is, about .6 per cent.

A.—Yes.

Chairman.—Q.—That is a very small proportion ?

A.—But we will be able to get correct information about these people and this will be very good data for making inferences.

Q.—Assuming that we want to collect information from house to house in rural areas about the economic condition of the *raiyat*, his income, his family budget, how many households do you think one enumerator will be able to deal with in a day—assuming, of course, that the people are willing to give all the information ?

A.—As I said, they will never give correct information to outsiders. They will give some sort of information which will be of no use.

Q.—Supposing you associate an advisory committee with the enumerator in order to correct any errors which he may make, would that not obviate the difficulty ?

A.—In that case a very big establishment will be required. I would do these things with the help of the census staff.

Q.—There is no census staff now ?

A.—No ; but they can be utilised when they are doing census work. What I beg to suggest is this : various other enquiries are suggested in the questionnaire, but I do not think that they are of very urgent necessity. The most important matter, for instance, is the cattle survey, and that can be more conveniently done at the time of the census.

Q.—No census of an economic nature has been taken up till now. Do you think it will be possible to do it at the time of the census ?

A.—What I mean to say is that at the time of census, a very large establishment is entertained, and if, in addition, we want certain other information, it will be more easy to collect it then, and I think the expenditure will also be proportionately very small. But if you want to have a special census for this purpose alone, then I am afraid it will be a very gigantic affair.

Q.—Well, it will be a big affair, it is true, but what we want to know is what it will cost to collect information from each household.

A.—I think it will at least cost double of what the census costs now.

Q.—The population census costs Rs. 15 per thousand of population. Would Rs. 30 suffice to collect information regarding wealth, income, production, etc.

A.—Probably not. I should put it at double that, that is, Rs. 60.

Q.—Supposing you have intelligent enumerators drawing, say, Rs. 60 a month ; from how many households would each enumerator be able to collect this information in one day, forms of schedules and returns being handed over to them ?

A.—I think about 20 houses.

Q.—What staff would you employ between the enumerator and the District Superintendent or District Officer ?

A.—I should have at least a circle officer in each Sub-Division.

Q.—What is the population of a Sub-Division ?

A.—Probably 7 to 8 lakhs ; that is, about half the population of a district, which is about a million.

Q.—So, it will cost about Rs. 60 per thousand of the population to collect information in a village ?

A.—Yes.

Q.—What information would you collect in order to test the economic condition of the rural areas ? From your experience, what would be a good test of their economic condition ?

A.—I would first find out what is the outturn on their land, what sort of crops they grow, their indebtedness, whether they have got any subsidiary income, and then probably I would ask about their ornaments and other things. It will be very difficult, of course, to get information about ornaments, but the neighbours can probably obtain that. I would also ask them about the cattle they keep, also about the useless cattle they keep, because owing to our sentiment, thousands of useless mouths are fed, and that is an economic drain. Then I would find out what they usually spend on their ceremonies.

Mr. Kaul.—*Q.*—Do they spend anything on drink ?

A.—The people, at least the cultivating classes in Bihar and Orissa, are a very sober sort of people, and they do not spend much on drink ; except some people in Chota Nagpur. So I would not take that or any other luxury into account.

Q.—You want to take the expenditure on ceremonies. In that case these things should also be considered along with other expenditure.

A.—Yes, but I am speaking of normal expenditure—the amount of clothing they use. I sometimes found that males use four dhoties, and the poorer people use two dhoties during a year.

Chairman.—*Q.*—You will have to find out what their family budget is.

A.—Yes, that is, what they spend on food, kerosene oil, tobacco, etc. The latter items cost them a very small amount.

Q.—What is the crop they live on ?

A.—“ Mandua ”. It is a very small grain. I do not know what they call it here. When they can, they consume it first.

Q.—From your experience, what do you think it costs them to live ?

A.—In Tirhut, I think it costs Rs. 5 per head per month.

Q.—What agency in the village would be able to help in this sort of work ?

A.—I am afraid in the permanently settled areas there is no agency, and that is a great disadvantage which we suffer from.

Q.—You have no agency to collect revenue or agricultural statistics ?

A.—None whatever, except the police.

Q.—Then why not use the police ?

A.—The police is the only agency I would not use. In India the connection between the police and the people is quite different from that in other countries.

Mr. Kaul.—*Q.*—What do you suggest for collecting necessary reliable information regarding agricultural production, etc., in permanently settled provinces ?

A.—We have got some sort of system. We have got the police, *chaukidars* and *panchayats*—village *panchayats*—who levy and collect the *chaukidari* taxes and whenever we want any information this is the agency we always use. Now we have got an Act—the Village Administration Act—which is just being introduced in a few select areas, and that is a sort of Village Local Self-Government Act. There also the *panchayats*

will be elected and they will look after the village schools, the village roads, the village water supply, the village sanitation, etc., like small Town Committees.

Q.—I understand at present the statistics regarding the area and the crops are furnished by *chaukidars* and village *panchayats*.

A.—Yes.

Q.—And then they go to the District Office, are there corrected according to information received by the Collector or by the officer in charge and then published. Do you think they are quite unreliable ?

A.—I think there must be about 40 per cent. incorrectness in it.

Q.—Can you suggest any means for making them less incorrect, that is, bringing them within the range of about five or ten per cent. of mistakes ? This is one of the most important questions we are faced with.

A.—With the present staff which Government has, I am afraid there is no other way, unless some sort of cheaper staff, e.g., *Kanungos* whose pay I believe ranges from Rs. 75 to Rs. 150, are employed, we increase the number of these officers, and Government can face the cost. then, I think, we can get more reliable information.

Q.—How would *Kanungos* help ? Can they be expected to go round the villages ?

A.—In the first place they will have to teach the *panchayats* how to collect information.

Q.—They are an altogether unpaid agency. Can you expect them to take the trouble of measuring crops, etc. ?

A.—I think they will do it—they are not altogether an unpaid agency, because they get something on the collection of *chaukidari* tax—about ten per cent., and each man gets about Rs. 100 to Rs. 200 a year.

Q.—What is your *chaukidari* tax—about a rupee per house ?

A.—It is levied on income. I think it is six *annas* to a maximum of one rupee per family.

Q.—Supposing you have got 100 families in a village, how much will he get ?

A.—I think a *panchayat* has got about twenty to thirty villages under it and is responsible for levying the tax and collecting it ; it has got a *Sar panchayat* and four other *panchayats*. There is a group of villages and there are several *chaukidars*.

Q.—We'll suppose that they look after 20 villages and that each village has got a hundred houses. That means on *chaukidari* collection there will be a commission of Rs. 200 for the whole of the *panchayats* and that would have to be divided among five men.

A.—No, the other men will not take the money. They are only an advisory body.

Q.—Would the *chaukidar* be able to measure the crops of 20 villages at harvest time. You were a Settlement Officer yourself and that is why I am asking you this question.

A.—The thing is our men can do these things more quickly by estimating the crop on areas. For instance, in most villages in Bihar the

rent is levied on the estimate of crops. The man will say it is so many maunds per acre—the landlord takes half and the raiyat takes half. It is a sort of appraisement. They are very clever. I have checked their estimate and have always found them to be correct, although it is nothing but guess work.

Chairman.—*Q.*—Do they actually take measurements of the crops ?

A.—No.

Q.—Do any zemindars actually measure their crop ?

A.—Sometimes they do—whenever they have any doubt. They do not do it regularly—only after Survey and Settlement—because they have got maps and measurements. Otherwise, it is a rough measurement by the pole.

Q.—Who prepares the estimates of crops that are reported in the agricultural returns ?

A.—The police.

Q.—You say that they are 40 per cent. inaccurate.

A.—Yes.

Q.—In what other way do you think it is possible to make these returns accurate hereafter ? They may not be able to afford to keep a large staff ? What is the easiest way by which we can measure the quantities and the value of the crops, etc. ?

A.—The next way is to compel the zemindars to submit some sort of return.

Q.—Do they submit any returns at present to Government for any other purposes ?

A.—None, except when there is a road cess levied on them.

Mr. Kaul.—*Q.*—Is there not a permanent road cess levied on land revenue ?

A.—That is only when a revaluation is made.

Q.—Have you not a revenue cess, and is not road cess included in it ?

A.—No, road cess is not included in land revenue. The road cess is levied on the income. Sometimes they pay more cess than land revenue. Cesses always fluctuate.

Chairman.—*Q.*—Is the income ascertained correctly ?

A.—When there is a cess revaluation, which I believe takes place every five years, a special officer is appointed to estimate the income, the landlords are asked to submit certain returns of their income and these returns are checked by the special officer.

Mr. Kaul.—*Q.*—You say that even these returns of income are 40 per cent. out ?

A.—Well, the landlord tries to make it as low as possible and the officer tries to raise it as much as possible, so they take the middle course and strike a medium.

Q.—Do you think that the result is fairly accurate, or is it very much out ?

A.—I think it is fairly accurate. After all, when it is very much in excess the landlord can appeal.

Chairman.—Q.—Till now there has been no economic survey nor any census of production. Supposing Government want to do this now and begin with a stock-taking census. How long will it take to prepare correct returns and complete all the statistical tables and reports ?

A.—That will depend on the staff Government are prepared to employ.

Q.—Assuming that you get all reasonable assistance you want, how long do you think the initial stock-taking will take ?

A.—I do not think it should take more than a year.

Q.—At what intervals would it be necessary to have the detailed census taken of production, income, etc. ?

A.—Just as you take the census of population—that is, once in ten years. I think that will be quite sufficient.

Q.—Is there much trouble about fragmentation of holdings—in regard to zemindary lands ?

A.—Very much.

Q.—What is the smallest area that you have come across ?

A.—I think the average in Bihar and Orissa will be about three acres per tenant.

Mr. Kaul.—Q.—You have big landlords ?

A.—Yes, very big.

Q.—Have you any small landlords ?

A.—Yes, we have got landlords of five acres, but their number is very small. We have what you call actual farming landlords, I mean those who actually cultivate their lands with their own ploughs, but their number is not very large.

Chairman.—Q.—Have you any records of the wealth or poverty of the gentlemen who take part in co-operative societies—I mean the members of your co-operative societies ?

A.—Our "Haisiyat" register does not show that. It shows the area of land, the indebtedness and the approximate value of the land, the number of cattle and their value, then the deposit in the society—these are the main items.

Q.—Are they very much indebted ?

A.—In my province I should think about 80 per cent. of the tenants are in debt.

Mr. Kaul.—Q.—Have you permanent tenants or tenants at will ?

A.—Permanent tenants called occupancy tenants.

Chairman.—Q.—On what conditions do they hold the land ?

A.—They can never be ousted by the Zemindar unless they are in arrears of rent.

Mr. Kaul.—Q.—Do you know that agricultural statistics are published now in a compilation called the Agricultural Statistics of India ?

A.—Yes.

Q.—And there is also a provincial publication called the Season and Crop Reports of the seasonal crops, estimates of holdings. Have you seen these publications ?

A.—Yes.

Q.—Do you consider that the figures given in them are reliable ?

A.—The figures of area are reliable, but those relating to estimates, etc., are, I think, quite unreliable. There are two factors. One is the area under crops. In our settlement records the area is given—*viz.*, so much land under paddy, so much under jute, etc.,

Q.—Your experience is confined to Bihar and Orissa ?

A.—Yes.

Q.—And you cannot speak of other provinces ?

A.—No.

Q.—At present, there are no statistics of dairy produce and farm produce, such as milk, ghi, cheese, eggs, poultry or things of that sort. How do you think we can get figures relating to these articles ?

A.—I think it will be impossible to do it, because none of these articles plays a very important part. Supposing a man has a buffalo, he gets four seers of milk out of which he drinks some portion while the rest he churns and makes some ghi daily and goes on collecting it ; and after 15 days or so when he collects about a seer or so he takes it to the nearest *bania* and buys some other article in exchange for it.

Q.—Do you know how much milk is consumed by people who do not keep buffaloes ? Taking the total quantity, is it not very large ?

A.—Yes, it is very large. It seems a very considerable proportion of the production ; but it comes in such dribblets that I do not think it will have any statistical value.

Q.—Besides dairy farms, you have got villagers who keep hundreds of buffaloes and they do nothing but sell the milk—that is their trade.

A.—Well, in Bihar and Orissa we have only got such people in the municipalities, but not in the interior. Every cultivator who can afford to do so keeps cows, but cows' milk is very little used in making ghi.

Q.—If you want to get the total production and you want to compare the production of the country or the income per head with similar figures for other countries, do you think you should aim at collecting complete figures ?

A.—I think you can get some amount of information which will be good enough to form an idea : that is, when you take the census of cattle, etc., you might enquire how many buffaloes a man keeps and what is the average outturn of milk, because the average outturn varies very much. You will find, for instance, that in Orissa the average will never exceed a seer per cow, whereas in Bihar it might come to about 3 seers.

Q.—You would obtain the production of milk, for instance, by taking the total number of milch cattle and striking some sort of average per district ?

A.—Yes.

Q.—You would take the quantity of the normal yield of milk and from that find out the total quantity, and thus be able to say what quantity of ghi is produced ?

A.—Of course, we know what quantity of ghi is produced out of a given quantity of milk—but some proportion of the milk is consumed raw. So I think there will be some difficulty about that. In any case, we can find out the quantity of milk produced.

Q.—Would you like to ascertain it by means of a special census, by deputing special men to go from house to house and find out how much ghi a man produces, and how much he is able to lay by every month or every year, or would you do it at the time of the census simply by making general enquiries when you find out the man's occupation ?

A.—I would do it at the time of the census. It will not be worthwhile to do it otherwise, because after all it plays a very unimportant part.

Q.—Then, as regards poultry, chickens, eggs and things of that sort, would you enquire about them also at the general census ?

A.—Yes.

Q.—And you would not make any special enquiry about them ?

A.—It is not worthwhile.

Q.—You know that there are a certain number of cottage industries pursued in villages. How would you find out their production ?

A.—I would do it along with the census of population. I must say that in our province cottage industries do not play a very important part, except the weaving industry. About it we have got fairly good statistics—in the Industries Department.

Q.—Seeing that, in the Industries Department, you are making a survey of the weaving industry, would you extend that survey to any other cottage industry ?

A.—No, it is not worthwhile.

Q.—As regards indebtedness, would you ascertain it by special intensive enquiries or would you do so by a general enquiry at the time of the census ?

A.—As I said, I have got accurate information in my Co-operative Department.

Q.—If an intensive enquiry is made for the whole population, leaving out your co-operative societies, how would you obtain the information ?

A.—I think such an enquiry is most important. If any special agency is required, I think it should be employed to find out the indebtedness.

Q.—Would you employ a special agency to ascertain it right through your province, or would you have an intensive survey in certain places or villages, or in selected tracts, or selected villages ?

A.—It would be a good thing if we could do it right through.

Q.—Would it be possible, or would it be very expensive ?

A.—I think we might be able to do it along with the population census.

Q.—Would the information gathered at the time of the population census be reliable? You know that when the enumerator goes round a hundred houses, all that he can do is to ask the people about the total amount of indebtedness, etc.

A.—There is that danger about it. It seems to me that it is absolutely necessary that this sort of enquiry must be fairly accurate.

Q.—Do you think that it should be done at the general enquiry or should it be made by a special intensive enquiry?

A.—If any extra staff is required for this purpose, it should be entertained.

Q.—If it is attempted for the whole province, do you think the cost will be prohibitive?

A.—Yes.

Q.—There has been an enquiry in the Punjab, and it has taken two years in one place and one year in another to make a complete enquiry about one village. They have employed one officer on Rs. 150 a month, so the cost of survey in one village has come to something like Rs. 2,000 to Rs. 4,000. How many villages are there in your province?

A.—74,000 villages.

Q.—If you begin work like that, it would cost Rs. 74,000 multiplied by Rs. 2,000 which would be prohibitive?

A.—Yes.

Q.—Therefore, would you prefer to have intensive enquiries on a comparatively small number of villages at one time?

A.—Yes; and then I would group the Divisions. There are five Divisions—some typical.

Q.—Then you would select some villages and make an intensive enquiry in them?

A.—Yes; that is the only alternative.

Q.—You say that you would find out the normal and abnormal expenditure. Do you anticipate any difficulty in ascertaining it? Do you think that if a man is asked how much he spends on food, etc., he will give the correct figure?

A.—I think he will give correct information to the officers of the Co-operative Department.

Q.—But your officers operate only in 6,000 villages.

A.—But if we can get accurate information about 2 lakhs of people who are members of our Society, I think that will be a good basis for making inferences.

Q.—Would your special survey be confined to collecting information about the cost of living in co-operative villages only?

A.—Yes; otherwise it will be futile. The people will not unburden their mind to anybody else.

*Chairman.—Q.—*Would there not be a local advisory committee associated with your enquiry ?

*A.—*Yes : it is done in my department.

*Q.—*If you do it through the police, do you think that by associating a local advisory committee you can make the statistics more reliable ?

*A.—*My idea is that you will never get reliable information except through the Co-operative Department officers.

*Q.—*After all “ reliable ” is a relative term. In most of the countries the information is fairly reliable. There is, however, nothing like correct measurements in these matters.

*A.—*Here the difference will be very great. I mean the information will be of no statistical value at all. During my twelve years in the Settlement Department, I found it very difficult to get at the truth.

*Q.—*What sort of information do you collect at the time of the Settlement operations ? Are the data you collect quite reliable ?

*A.—*At the Settlement operations we collect all sorts of information and enquire about indebtedness also.

*Q.—*Do you collect information about the production of crops, the average net yield of land, etc. ? Is it reliable ? Through what agency do you collect it ?

*A.—*Through the Assistant Settlement officers, the Survey *Amins* and people of that sort.

*Q.—*Cannot the same information be collected by any other agency ?

*A.—*In fact, the Settlement Department is the only other besides the Co-operative which can collect the information.

*Chairman.—Q.—*Is the Settlement Department constantly at work throughout the year in your province ?

*A.—*They are constantly at work in one place or another.

*Mr. Kaul.—Q.—*They are not in one place always ?

*A.—*No. In fact, we have a cycle of about 25 years.

*Q.—*Is there a large, small or medium sized staff ?

*A.—*There is a unit and it depends on the area. We work on the unit system, *i.e.*, so many *amins* are required for a given area.

*Q.—*Is this question of collecting reliable statistics a very difficult problem in Bengal and Bihar and Orissa ?

*A.—*Yes.

*Q.—*Do you revise the revenue after a survey ?

*A.—*We measure the land and we prepare the record of rights.

*Q.—*If it is merely a revision of the record of rights it should not take very long.

*A.—*At first we have the cadastral survey which takes about two or three years.

*Chairman.—Q.—*It is an economic survey in some sense, is it not ?

*A.—*It is to a good extent an economic survey.

Q.—In your settlement operations, what areas and population do you deal with, roughly, in a year ?

A.—There are different parties.

Q.—What is the total area or population roughly ?

A.—I do not know anything about the area. Just at present it is going on in four different districts.

Q.—Do you think the staff employed on settlement work and co-operative work with some extra officers will be able to help in getting reliable data ?

A.—Yes.

Prof. Burnett-Hurst.—*Q.*—In giving your answers just now to the Chairman and Mr. Kaul with regard to the economic survey, you said you would collect information under certain heads. What is your conception of such a survey ? You suggest, for instance, indebtedness and size of holdings, wealth, normal expenses, outturn of lands, subsidiary income, ornaments, useless wealth and cattle, expenditure on ceremonials and also family budgets ? Was it your intention to collect information under these heads for every village ?

A.—As I said, it is possible in my department to have a survey like that of every member and I have got two lakhs of members.

Q.—But in the province as a whole there are 34 million people. Do you think that your two lakhs—which is approximately about .6 per cent. of the population—would be a representative sample ?

A.—I think it will be far better than utter ignorance.

Q.—Would it not be of a particular class—namely, the indebted class ?

A.—There are indebted and also non-indebted people.

Q.—You mean that enquiries should be conducted in those villages where there are co-operative credit societies—not enquiries relating only to members of co-operative societies—there is a difference in that.

A.—I can do the enquiry only so far as it relates to members of our Society.

Q.—If that is so, they are. I suggest, a special class of people who are indebted and who are sufficiently enlightened to try and get themselves out of debt. Would they be regarded as typical of Bihar and Orissa as a whole ?

A.—No. They are not typical.

Q.—So that would be an enquiry into a special class, viz., the indebted ?

A.—Yes.

Q.—Would you suggest, at the same time, that in order to attempt a survey of all classes, some other sort of enquiry should be undertaken ?

A.—I should make an enquiry as to the loss they sustain owing to the intervention of middlemen in the sale of their crops.

Q.—Would you make a special enquiry

A.—Yes.

Q.—About the other heads you have already mentioned, *viz.*, income, wealth, production and so on, would you suggest that a general enquiry should be made or a special enquiry undertaken throughout Bihar and Orissā ?

A.—That will be a very difficult task. There are about 85,000 villages. This can only be done, as I have said, either through my department, or through the Settlement Department. We have got a complete agency for it. I would be satisfied if the enquiries by these departments, are made more accurately and more intelligently.

Q.—Will the public be satisfied ? It will doubtless be an enquiry into a particular class. The public want an enquiry into the economic condition of the various classes.

A.—In the Settlement Department they enquire into everybody's affairs.

Q.—If you suggest the Settlement Department as the agency, would you advise that they should study the conditions in each and every village or in certain villages ?

A.—They can do it in the case of each individual ; and it will not be very difficult for them to do so.

Q.—There are 34 million people. Do you mean to suggest that they should ask each person ?

A.—Yes ; only where the settlement is going on. Now, for instance, five districts are under Settlement operations. There every individual has got to appear before the Settlement officer, whether he has lands or a house. Then an enquiry like this can be made.

Q.—So you would not approve of an enquiry by any other people, except the Settlement officers at the time of the Settlement in the areas where Settlement operations are conducted ?

A.—Yes ; that is so.

Q.—I understood you to say that you would not get information about income, wealth, etc., from individuals.

A.—Yes.

Q.—In addition to the Settlement officers, would you employ anybody else ?

A.—I cannot think of any other agency.

Q.—Would you employ only the official agency ?

A.—Yes.

Q.—You happened to discuss the consumption of milk in Bihar and Orissā and you stated that very little milk was consumed. Is that right ?

A.—I meant that the milk production does not play an important part in a cultivator's economy. A very small portion of the population can afford the luxury of milk.

Q.—Have you seen the family budgets collected by the Chanakya Society of the Patna College ?

A.—I have seen a few of them.

Q.—Are they reliable ?

A.—Fairly.

Q.—They collected information about 4,000 families of different classes, and in their enquiries it was ascertained that milk was consumed in 85

per cent. of the families which came under investigation, and ghi in 76 per cent.

A.—It is entirely wrong. I regard these figures to be entirely wrong if they mean the rural population, of course. I would not include the town dwellers.

Q.—The budgets were collected of 4,000 families of different classes in Bihar and Orissa—both rural and urban. I have seen some of these budgets. You have seen them too, and you regard them as unreliable ?

A.—If these percentages refer to rural areas, they are entirely wrong.

Q.—Would you not regard family budgets as rather dangerous ?

A.—If they are correct, they are not.

Q.—How can you ascertain definitely that the facts are all correct ?

A.—Well, that will depend on the men who collect the information. In the Co-operative Department we have surveys made amongst these people and we are able to find out who is telling the truth and who is not. We have got some sort of idea and we know what they eat and what they spend.

Q.—Your idea is to send an investigator to each family and you mentioned just now that you would cover about twenty households in a day. Do you think that you can question, cross-examine and get accurate facts of the food consumption, income and everything else relating to twenty households in a day ?

A.—If we have men like *Kanungos* they can do it.

Q.—Is it not likely that they may give certain figures in view of the *Kanungo's* influence, and would these figures be reliable ?

A.—After these officers have gained a little experience, they will be able to detect errors immediately.

Q.—How will a *Kanungo* approach a family—will he ask the family as to how they spend their income—how much on food, etc. ?

A.—A little experience will show that a man who is very poor cannot afford more than two cloths a year ; and if he says that he wears ten cloths, then the *Kanungo* will know that he is telling a lie.

Q.—Exaggerated statements can be checked, but what about under-statements ?

A.—The tendency is to understate income and overstate expenditure.

Q.—When a *Kanungo* goes to a family to obtain information with regard to its expenditure, for what period of time would you expect him to obtain the information ?

A.—They will have to give a rough sort of yearly estimate. What I would do is to lay down certain clear questions and distribute them to *Panchayats*, telling them to fill up the forms according to the family budget questions, and then I would ask the superior officer, *viz.*, the *Kanungo*, to check them. It will be impossible for a man to go from door to door and cross-examine people.

Q.—You would then employ village *panchayats*.

A.—We have got that agency. But what I would do is to have men of the *Kanungo* type to teach the *panchayats* how to gather this information and then have their work checked.

Q.—You know probably better than I do about the influence of the police in villages and you have already expressed an opinion as to their

employment as an agency. Do you think that if they were employed to collect information about income and family expenditure they will get correct particulars ?

A.—No ; they will not get correct information. And that is why any attempt by any agency to collect this sort of information will be very futile except through the co-operative department officers and the settlement officers during settlement operations. If you suggest any other agency, my decided opinion is that the information will be inaccurate and it will not be worth the trouble and expenditure.

Q.—Leaving aside the rural classes, our terms of reference cover not only the rural population but also other classes. We have to investigate the condition of all classes. How would you determine the different classes of people ? Would you say clerks, artisans, etc. ? Would you classify them in that way ?

A.—In our province probably about 85 per cent. of the people live in the rural areas. We have not very big cities.

Q.—Is there a very large population of clerks ?

A.—Yes.

Q.—Would you not investigate their conditions ?

A.—We can ask for some sort of statistics from them officially.

Q.—Do you think that the average clerk—other than a Government clerk—will be prepared to give his family income and expenditure ?

A.—I think being educated people their information will not be so very incorrect as that given by the rural people.

Q.—Do you think that they will be prepared to give the required information ?

A.—If Government ask them. I think they will.

Q.—Supposing they are non-officials—do you think that if they are asked they will be prepared to give their family budgets ?

A.—If Government ask them, they will, I think.

Chairman.—Q.—You mean to say they will refuse except under legal obligation ?

A.—I think so.

Q.—They will not also disclose their wealth ?

A.—I think everybody tries not to disclose his wealth.

Prof. Burnett-Hurst.—Q.—Is not fish one of the principal articles of consumption in your province ?

A.—It is one of the important articles.

Q.—It forms one of the products of your province.

A.—Yes.

Q.—There are no records of the quantity of fish produced. Can you suggest any means by which we can obtain the information ?

A.—I believe some sort of statistics can be obtained from the railway.

Q.—But that would only relate to fish traffic into Calcutta. Apart from that, there is no return either of the production of sea-fish or of fresh-water fish—is that not so ? Have you any suggestions to make, as to how we can collect this information ? Other countries collect such information. Would it not be possible to do so in India ?

A.—We have three different fisheries in the province. The biggest is the Ganges, the second is the Chilka Lake. Both come under "fresh water" and there is also sea-fishing. It is however insignificant. We have some sea-fishing in Puri which is negligible. The rest is from pools where water stagnates during the rains. And when the water begins to dry up the fish are caught.

Q.—Is there no means by which you can ascertain the production ?

A.—Yes. In the Ganges the whole thing is settled on leases by Government. So Government can get some sort of correct returns from the lease holders.

Q.—Would you make that a condition of the lease ?

A.—Yes, it may be made. About the Chilka fishery, practically the only outlet is Calcutta and there we can also get accurate information. We have now got all the fishermen brought under the Co-operative movement. With the aid of the Co-operative Societies and from the railways we can get accurate statistics.

Q.—You said that in the *haisiyat* statement certain items are mentioned. In certain provinces this statement shows the number of trees and their value. Is that information given in your statement ?

A.—No, we do not have that.

Q.—You have suggested that with the agency of the settlement officers it will be possible to ascertain the production of fish, fruits and other village produce. Would it be possible to get that information without difficulty ?

A.—In Bihar and Orissa fish production does not play an important part at all. As I stated, the Ganges and the Chilka are the two greatest fisheries. Fruit is an important industry in Bihar. But there is no record of fruit production.

Q.—Is not *mahua* consumed a good deal in Chota Nagpur ?

A.—Yes. But there is no record of its production though I believe that during the settlement operations this information can be gathered.

Q.—Are all trees numbered during settlement operations ?

A.—Yes. And I believe the percentage of mistakes will be about five.

Q.—So it would be easy to ascertain information about trees and probably their production from the settlement records if these were brought up to date by some local agency ?

A.—They are never brought up to date.

Q.—They could be ?

A.—I do not think the difference will be much. It is not worth the trouble.

Q.—You suggest that a good deal of information can be ascertained at the time of the census of population. If information about indebtedness, income and various other subjects is to be collected, would not the census officers be overburdened ?

A.—There are also cottage industries to be taken into account.

Q.—Should the unit of investigation for a study of cottage industries be the village or the individual family ?

A.—The household will be the unit. So if certain columns are added to the census forms, probably all this information could be obtained.

Q.—Would you be content with having this information once in ten years ?

A.—That will be sufficient. We are not progressing fast.

Mr. Kaul.—*Q.*—Would you wait till the next decennial census, or would you have a stock-taking now ?

A.—I would wait till the next census. In the meantime I would make all sorts of preparations after mature thinking.

Prof. Burnett-Hurst.—*Q.*—You mentioned that you would get information about cattle and other matters at the time of the Census ? Do you not think that it will make the census machinery very cumbersome, unless you employ a better type of investigators than at present ?

A.—A census of cattle along with the census of population is not a very difficult task.

Mr. Kaul.—*Q.*—Is it not taken separately now ?

A.—It is now taken at the time of survey and settlement operations. I think it will be more accurate if it is taken along with the census, because at the time of the census better and more staff are employed.

Q.—But the cattle census is not taken by the same staff ?

A.—I know there is a separate staff but I do not see any reason why it cannot be taken along with the population census.

Chairman.—*Q.*—It would make it too big—is that not the objection ?

A.—The counting of human beings is done quickly and the counting of cattle can also be very easily done during the census operations.

Mr. Kaul.—*Q.*—The counting of cattle must be done all at one time, otherwise the census may be wrong as some cattle may go over to other places and be counted over again.

A.—We count them according to owners—the margin of inaccuracy will be very low. In our province it is done in a rather slipshod manner.

Prof. Burnett-Hurst.—*Q.*—Then you think that the cattle census is unreliable in your province ?

A.—No. There may be a certain amount of error—say, about 10 per cent.

Q.—Would you suggest that with the census of population there should be a cattle census, a census of cottage production and a census of indebtedness ?

A.—I would not include a census of indebtedness in it.

Q.—Would you merely confine it to cottage industries and cattle ?

A.—Yes.

Q.—Do you not think that you would have to employ a more educated and more skilled type of man for this work than the present class of census enumerators ?

A.—Yes ; for the supervising work we shall have to employ a better type of man.

Q.—For the actual house-to-house enquiries the work requires a good deal of tact—to ask a man how much raw material he uses, etc.

A.—If you want further information regarding cottage industries, I think it cannot be done along with the census.

Q.—The nature of information suggested in the questionnaire could not be collected at the time of the census ?

A.—No ; it could not.

Q.—How would you collect that kind of information ?

A.—Now that we have got the Industries Department, we have a fairly accurate idea of the weaving industry.

Q.—But there are a number of other industries, *e.g.*, there are 1,82,000 potters, 1,25,000 basket-makers, and 1,22,000 persons engaged in preparing vegetable oils, and 1,29,000 men engaged in grain industry. I have picked them out at random, but it shows that cottage industries are considerable.

A.—I would not trouble myself with any of these at all.

Q.—It has been suggested that figures regarding the total production of the country should be ascertained ; but you do not think it necessary ?

A.—It may be very interesting, but at this stage of our progress it will not be of much actual value.

Q.—Do you think that there is no necessity for getting information about the wealth or income of the country as a whole ?

A.—Some people have ascertained that, but I do not know by what method.

Q.—On account of the great differences in these estimates, people have suggested a more thorough economic enquiry. Do you think that a thorough enquiry should be made ?

A.—No.

Q.—It appears that the manufacture of cow-dung cakes is an industry of considerable magnitude. Is it not very considerable in the villages of Bihar and Orissa ?

A.—Yes.

Q.—Are these cakes sold and also consumed as fuel by the people who make them ?

A.—Yes.

Q.—Can you give us a rough idea of the price at which they are sold in the villages of Bihar and Orissa ?

A.—I cannot. I was a Settlement Officer about 14 years ago and things have gone up considerably since then. It used to be sold then at two annas per hundred. The price has gone up several times since then.

Q.—You happened to say that you would not deal with all villages but that you would take five divisions and select typical villages. How would you select typical villages ?

A.—I mean there are fairly large villages with cultivators of good wealth, some villages with poor people and some with still poorer people ; and we can easily select the typical villages.

Q.—Do you think that this can be ascertained before the enquiry is made ? If so, by whom ?

A.—Yes, by the local officers

Q.—Do you not think that if the selection is left to officials the public may say that the villages are not typical ?

A.—Then I would take the non-officials into my confidence and ask them to help in selecting the villages. We have now got many Members of the Legislative Council, and I would ask them to help us in selecting typical villages.

Mr. K. M. PURKAYASTHA, Secretary, Indian Mining Federation.

Written Statement.

GENERAL.

Question 1.—In an enquiry primarily instituted to ascertain the economic conditions of various classes of people of the country, I do not consider it necessary to attempt any estimate of the aggregate national wealth. That is a problem which is entirely fiscal and financial and has had only an indirect bearing on the economic survey of the various classes of the population. To me the problem *par excellence* of an economic enquiry is the determination of *distribution of income* over the various economic strata of the community. Such a general study should no doubt be supplemented by intensive studies of the economic conditions of certain definite occupational classes and localised groups. Personally, therefore, I venture to suggest that *more stress should be laid on an examination of income and wages statistics* than on any other subjects referred to in this question.

Question 2.—I do not consider that an *exhaustive* occupational census is either possible or necessary. It can only be taken at the risk of sacrificing scientific accuracy of results. I would suggest, therefore, *a study into the conditions of only certain well-defined classes in particular centres* instead of extending it over a large area. Taking for instance the case of Bengal I would suggest only the following studies :—

Industrial wage-earner.

1. Jute mill labour.
2. Mining labour.
3. Factory labour near about Asansol.
4. Tea-garden labour in the Doars.
5. Labour in Railway workshop.

Other wage-earner.

6. Calcutta Dock Labour.
7. Railway station labour.

Agricultural classes.

8. Paddy cultivators (Barisal).
9. Paddy cultivators (Bankura).
10. Tobacco cultivators (Rangpur).
11. Gunja cultivators (Rajshahi).
12. Jute cultivators (Mymensingh).

Middle classes.

13. In the city.
14. In the mufossil town.
15. In villages.

Miscellaneous.

16. Domestic servants—
 (a) in the city,
 (b) in town,
 (c) in villages.
17. Agricultural wage-earner.
18. Rural artisans.

Cottage Industries.

19. Textile weavers of Dacca.
20. Silk manufacturers of Moorshidabad.

The above is absolutely a tentative list, drawn up to indicate what I consider should be the method of occupational census.

WAGES.

Question 57.—I am personally engaged in compiling some family budgets of the miners in the Jharia Coalfields. I attach herewith a preliminary report on the results which I have so far been able to obtain.

Question 58.—With my experience in connection with an industrial association, I can say that legislation would be ineffective. I would suggest instead Government availing of the co-operation of the employers' body and conducting through their agency a census of wages in large industries.

Question 59.—I favour a weekly basis.

Question 60.—That would be essential. Speaking for miners in the Jharia Coalfields, for instance, they are away from the Coalfields for four to five months during harvests.

Question 61.—This is one of the difficulties with which I have been personally faced. I would not make any attempt in ascertaining non-industrial income when computing industrial wages.

INCOME.

Question 62.—I should think so. I think the proper data for estimation of national wealth can be provided by proper tabulation of income-tax figures and by compilation of typical wages statistics.

Question 63.—As I have already stated, I would rely principally on income-tax figures and supplement them by other statistics. The income-tax figures provide fairly dependable working data. But if an income census could be instituted, it would no doubt be an ideal course to pursue. But I have misgivings as to the possibility of conducting such census on accurate lines.

Question 64.—I would adopt individual income as the unit.

Question 65.—I think the period of estimation should be annual. It is immaterial what particular year an individual presents his income for.

Question 66.—I think a uniform unit should be adopted for all classes at least in final tabulation. For many reasons an annual seems to be the best unit to adopt.

Question 67.—That opens a large question. If our endeavour is to ascertain real income, I fail to see *why* so-called free gifts should not be taken into account if its money value is appreciable.

COST OF LIVING.

Question 76.—Cost of living can only be studied comparatively. As a definite figure, it conveys little or no meaning for the standard of life varies so widely from class to class. The index figure, as used in this country and elsewhere, meets all practical requirements of a comparative study.

Question 77.—No.

Question 78.—Personally I can think of a further method, *viz.*, the average method.

Question 79.—I think calculations should be made on annual budget.

Question 80.—No definite figure can be mentioned. But it can be generally stated that the larger the field of generalisation, the more dependable are the results.

Question 81.—By all means. In fact, omission of such items would vitiate the results of such study.

INITIAL SURVEY.

With regard to the precise character of enquiry to be instituted, I have already expressed my views under Answer No. 1. I do not think that an enquiry on the lines indicated is within the range of practical politics and if accomplished at all, the results would be more of a tinkering than of scientific character. A study of the distribution of income over stratas of the economic community either on the existing data of income-tax or by instituting an income census should be principally aimed at. And this should be supplemented by numerous intensive studies of the economic conditions of well-defined occupational and localised classes. I desire in this connection to emphasise the importance of conducting an economic census only through the agency of specially qualified staff instead of the ordinary revenue and district officials, as often attempted at present.

A Memorandum on the results of compilation of family budgets of members in the Jharia Coalfields.

To my great regret, I have not yet been able to obtain sufficient number of budgets compiled yet. The following provisional conclusions, which are recorded with absolutely no pretensions to perfect accuracy, are based only on 74 budgets. The task of a dependable generalisation is much complicated by the fact that the labour population, partly local, partly drawn from eastern districts of the Central Provinces, partly from up-country districts represent a variety of economic types with wholly different social outlook and habits of life.

The average size of a labour family—3 adults and 2 children, generally 2 male, 1 female, but sometimes female outnumbering male.

Income.—With average of 4 to 5 working days a week, the earning is for an average family Rs. 10 a week.

Expenditure.—

Staple—Rs. 3 a week.

Other food (cereals, vegetables, fish, oil)—Re. 1 a week.

Salt—As. 1-6 a week.

Milk, meat and ghi—As. 2-6 a week.

Smoke—As. 2 a week.

Liquor—Re. 1 a week.

Clothing, male—Rs. 15 a year.

Female—Rs. 6 a year.

Children—Rs. 3 a year.

Utensils—Rs. 5 a year.

Social expenses—Rs. 20 a year.

Oral evidence, the 13th April 1925.

*Chairman.—Q.—*What is the strength of the Indian Mining Federation ?

*A.—*At the present moment, when there is a slump in trade, the members on the roll are in the vicinity of three hundred. The membership fluctuates on a seasonal basis. When the coal trade was in a booming condition, the whole section of Indian coal-owners joined the Federation. As a matter of fact Government look upon us as the representative of the entire Indian section of the coal mining industry.

*Q.—*Your Federation chiefly represent the coal mining industry ?

*A.—*Yes.

*Prof. Burnett-Hurst.—Q.—*The Indian Mining Association represents European Mining and the Federation Indian Mining ?

*A.—*Yes.

*Chairman.—Q.—*What is the value of the coal controlled by the two bodies ?

*A.—*I suppose as a rough figure we can take it that the Mining Federation controls 50 per cent. of the output and the Association another 50 per cent. Taking the output of the two classes at fourteen million tons and the average pit-head price of coal at Rs. 6 a ton, it comes to 84 million rupees, and so each body controls coal to the value of about 42 million rupees. The whole thing is of course a rough sort of calculation.

*Q.—*Is the estimate of production given fairly accurately ?

*A.—*I should think so—I mean the figures given by the Chief Inspector of Mines. That is about output. But as regards prices given in the Director of Statistics' Reports, they are in some cases misleading. As regards quantity, the figures are absolutely correct, because the rules under the Indian Mines Act about the submission of returns by mine-owners are rather drastic. There was again until the recent months wagon difficulty and under the rationing system of wagon distribution, mine-owners had to send out quarterly reports of the raising and stock to the Indian Mining Association and Indian Mining Federation, and this practice contributed largely towards the accuracy of the colliery outputs.

Q.—So far as the mining industry is concerned, are there any other statistics needed for your own purpose ?

A.—I do not think there is any. The question is, however, one of the accuracy of the present figures. As regards output we have very exhaustive statistics. But as regards price statistics and the current quotations that sometimes appear in the Government reports, I should not consider them to be of a very dependable character.

Q.—What would you do to make them more dependable ?

A.—Personally speaking, I am not a believer in statutory action. It is up to these bodies—the Federation and the Association—to attempt to compile a sort of periodic prices report. I think I have seen instances where statistical use has been made of the price figures which are absolutely misleading.

Q.—What opportunities have you had of studying the economic condition of the miners in your capacity other than that of Secretary of the Mining Federation ?

A.—I must confess I have none. As I have indicated in the report, my study has been in the direction of the general condition of the miners, and it is still in progress.

Q.—You have written something on Indian Finance ? What aspect of the economic condition of the country does it specifically deal with—other than finance ?

A.—I do not think it does at all. In the first part I have dealt with public finance. There are one or two things bearing on the question raised by the Committee in the first part of the book—relating to the computing of national wealth—but they are naturally rather sketchy.

Q.—Which Department of Government deals with the collection of mining statistics ?

A.—The Chief Inspector of Mines, who is under the Industries Department of the Government of India, and the Director of Statistics.

Q.—Your Mining Federation is interested in mining of certain provinces only ?

A.—Bengal and Bihar.

Q.—The Chief Inspector of Mines works directly under the Government of India, and Local Governments have nothing to do with mines ?

A.—No, because under the Devolution Rules ' regulation of mines ' is a Central subject. There are certain matters, however, for instance, labour welfare, with which the Local Government should be quite competent to deal, and if the Local Government decide to enquire into the economic condition of the miners, I think it is entirely within their province to do so.

Q.—But why should they take interest in these things unless they get some revenue from the miners ?

A.—They get some revenue in one sense ; that is, the road cess. Only a small slice of the income-tax goes to the Provincial Government, but road cess directly benefits the local exchequer. Unfortunately this is the only industry, as far as I am aware, which is subject to this local taxation. In every province you have got more or less similar taxation.

Q.—Is the road cess levied on the products or profits ?

A.—In the coal fields it is levied on the net profits.

Mr. Kaul.—**Q.**—Who levies the road cess ?

A.—The Local Government does it on the net profits of the mines. There is a proposal to levy it on the tonnage.

The Chairman.—**Q.**—What does it come to—rate and percentage ?

A.—It is one anna per rupee on the average profits of the previous three years.

Q.—How much of the work of collecting statistics is done by any Department other than the Geological Department ? Does the Revenue Department do anything in this direction ?

A.—No.

Q.—Do you know anything of Industries other than coal mining ?

A.—Nothing which would be of any value to the Committee.

Q.—How is your Federation financed ?

A.—By subscription.

Q.—What other mining industries are there in this Province ?

A.—I am almost certain that coal is the only mining industry in this Province. There are iron mines in Bihar, and there are kerosene or petrol resources in Assam.

Q.—Is there any information which mine-owners are unwilling to give for fear of commercial rivalry ?

A.—That is a very delicate question for me to answer. But to give my personal opinion, I suppose that whenever an enquiry comes from Government, the commercial concerns always look upon it with suspicion. I have advocated right through a non-official agency for compilation and tabulation of statistics.

Q.—I meant—are you unwilling to give any statistics of production or wages or value of machinery ?

A.—There is always a tendency towards reluctance, the reason being that the trade always wants to avoid publicity. They have to give the output figures under the Act. They do not give figures about wages. As I have always said it will be a fairly easy affair to compile wage statistics if the trades themselves take up the work.

Q.—Will they be unwilling to give information regarding the value of the machinery ?

A.—My personal view is that this can be estimated if one glances through the output figures. Anybody who has any knowledge of mining would know roughly what machinery would be required to raise certain amounts of coal.

Q.—What is the average depth of the mines ?

A.—The Jherriah mines are much shallower than the Rancegunge mines. In Rancegunge the average would be in the neighbourhood of 200 feet. In Jherriah sometimes it is open working there, otherwise the average is 50 feet.

Q.—At what point do you take the price of coal ?

A.—So far as the coal owners are concerned, it is the pit head price that counts or, to be precise, the price put into wagon at the colliery siding.

Q.—What is the difference between that and the average scale of price in India ?

A.—It varies according to the distance of markets. There is one price in Cawnpore and another in Allahabad, one price in Bombay and another in Calcutta.

Q.—What is the difference, roughly ?

A.—Unless you pin me down to a definite centre I cannot say.

Q.—Take the Calcutta port, for instance ?

A.—The railway freight from Raneegunge will be Rs. 3-8 and from Jherriah Rs. 4-8. That has to be added to the price.

Q.—What is the present price of coal ?

A.—The market is very depressed just now ; Jherriah coal of even 11-12 lower seams is below Rs. 4 at the pit-head. Raneegunge coal, of course, will fetch a higher price than even higher grade Jherriah coal.

Q.—Do you get all the statistics you want for the mining industry ?

A.—We have had no difficulty so far.

Q.—Does your Federation represent mining interests outside Bengal ?

A.—Some of the Bombay firms have joined us.

Q.—Any from the Hyderabad State or the Central Provinces ?

A.—No, not from Hyderabad ; the Central Provinces have their own organisation.

Q.—I think you are interested in national or individual wealth, etc., as is evidenced in your book. How would you compute national wealth ? Would you be content with an inventory method ?

A.—As I suggested before the Taxation Enquiry Committee, I would not. My own idea is that what is more necessary for a survey of economic conditions is to determine the distribution of income over the various classes. I am not so much interested in aggregation as in the distribution of income.

Q.—But you must first find out the total income.

A.—That has a more financial rather than an economic value. In order to ascertain the economic condition of the people you must know what percentage of them has got an income of say, below Rs. 500 and how many are below Rs. 200 and so forth. That I suppose, gives a more accurate picture of social economy than what you can get by merely computing the national wealth.

Q.—But both are required.

A.—Undoubtedly, computation of national wealth has a great value ; but my method is an easier one, and for this we have data in the income-tax figures and we can have wages statistics compiled.

Q.—How can you do that ? You have got an income-tax population of 2,50,000 only—a very small population—that will not take you very far.

A.—As I say, it is only one part. I would supplement it by certain intensive studies of occupational classes and typical classes.

Q.—Then, you are not in favour of a general survey ?

A.—No, for it is difficult to carry out, and even if it is feasible it can be done only at the sacrifice of accuracy. There is another reason too—for instance, take the cultivator class. If you take a general economic census of the cultivators of Bengal, that would not carry you far. You would have to take them by groups. The Barisal cultivators chiefly grow rice, the Mymensingh cultivators chiefly grow jute. There are the *ganja* cultivators of Rajshahi. If you take them by groups, you can have an accurate picture of their economic conditions, which differ greatly. For instance, the jute growers of Mymensingh have hard cash, with which they sometimes buy rice and, of course, other things. The ordinary cultivator of Barisal has got a little money income. His staple income is rice and other things which he grows in his own fields.

Q.—So you would study the economic conditions of individual classes ?

A.—I would say definite classes and localised groups ; and it would be a very interesting study, too. There is, for instance, the tea growing labour in the Duars.

Q.—What is your objection to a comprehensive study ?

A.—It obscures the distinctive characteristics of each class.

Q.—It is not clear. You may have that independently of a general survey.

A.—So far as I can guess, the intensive study of particular classes will prepare the ground for a general survey.

Mr. Kaul.—*Q.*—You think a general survey will be of no value, and that we should make only intensive studies ?

A.—That is what appears to me to be the case. A general survey is more or less a misleading survey.

Q.—You would not advise us to undertake it and then supplement it by an intensive survey ?

A.—I would advise an intensive study followed by a general survey.

Q.—So that you would be satisfied with an initial survey which is not comprehensive of each class of production and each class of wages. How would you choose your specimen ?

A.—I would study where there are facilities for study. For instance, in one localised centre there is one occupation, and it is very easy there to take a census of the economic conditions of the people.

Q.—Do you think people would be satisfied if we published the statistics collected from an initial survey of that kind unless we gave figures of agricultural produce, the production of certain industries, etc. Do you think the people will be satisfied if, instead of giving all that information, we give the results of the intensive enquiries in various places ?

A.—I am afraid I do not quite follow you.

Q.—You might publish complete figures for a whole geographical division. These figures may be reliable or not. You might also publish complete figures which are partly reliable and partly unreliable and then supplement that by an intensive survey in order to make the figures complete in course of time. The next thing would be to have a comprehensive survey of indebtedness, cost of living, etc. It is no use publishing figures relating to isolated tracts or isolated classes.

A.—As I have said, the best thing would be a survey of the distribution of income over various classes.

Q.—How would you ascertain the distribution of income until you know the income of everybody ?

A.—If you take some typical classes they would serve as data. From these I would generalise. I would make enquiries first in regard to certain specialised groups. For instance, take the jute cultivators, who form a class apart along with certain special groups. I would study them intensively.

Q.—There are jute growers living 20 to 50 miles apart. Surely you would not study every jute grower in the province ? My question is—will the public be satisfied with that kind of statistics as to the condition of the jute growers in a certain town ?

A.—Yes, they will be, provided you can give an idea of distribution of incomes.

Q.—You would group the incomes without reference to the occupation ?

A.—Yes, I base my idea on Sir Josiah Stamp. In page 92 of his “Wealth and Taxable Capacity” he gives only four or five groups.

Q.—But the conditions are quite different there. They have standardized occupations. How would you do it here ?

A.—Their method is, I think, to take statistics of typical classes, but I am not sure.

Q.—They have got various kinds of statistics. They have a census of production which is very thorough and complete.

A.—Their statistics relate entirely to income, and they are based on income-tax figures.

Q.—But we have not got that ?

A.—That is the trouble.

Q.—Our system of land tax does not enable us to get at the income from the income-tax. In some countries they tax income on the amount of capital with reference to the value of the property. Here we cannot do that.

A.—In order to compute national wealth we should employ the capitalization method and not the inventory method.

Q.—You have to adapt the method to the country and not the country to the method.

A.—But the inventory method is very difficult to apply and as I understand it, there are only two possible methods, the capitalization method or an inventory method of wealth computation.

Q.—It does not necessarily follow that because in another country the capitalisation of the value of the property is made, you can also do it here.

A.—I would capitalise the income for computing the national wealth.

Q.—But that is only a way of fixing the value. How is national wealth to be ascertained ?

A.—I have no other suggestion beside capitalisation system. But I would again stress here that an aggregate computation of national wealth is very necessary only to know what the aggregate taxable capacity of the country is. When we are concerned with the economic condition of the people, the question of fundamental importance is to have an idea of the distribution of wealth.

Q.—Amongst all classes ? The income of an average man and his expenditure ?

A.—What I am concerned with is the income. The expenditure is quite a different thing. If I had to compute the wealth in Bengal, I would have three classifications, namely, the wealthy class, the middle class and the working class. I would then divide each class into three more sub-groups. I would then be able to say that so much per cent. of the wealthy class has got so much income, so much per cent. of the population have got an income below so much, and so on.

Q.—If we divide the whole society into three or four groups, shall we get all the information we want ?

A.—Yes, if we take three groups and three sub-groups and then supplement it by intensive studies of certain classes.

Q.—Even if we do that, what would be the result ? We will know there are so many people with an income of over a lakh, so many with an income of Rs. 20,000 and so many with an income of Rs. 100. What we want to know is what is the economic condition of the tenant or of the peasant proprietor ?

A.—For this, I would rely on intensive studies.

Q.—Why would you not classify your population according to this very grading which you are going to apply in your intensive studies ?

A.—In that case you will have to multiply an infinite number of groups ?

Q.—Where is the harm ?

A.—There is absolutely no harm provided you multiply a large number of occupational classes. The Committee's method then will comprise my method. I am, however, less ambitious. But you can go further ahead. That is all the difference.

Q.—About statistics of prices—how would you check the figures or improve them ?

A.—My idea is that with regard to the price statistics the only reliable data is what is compiled by the trade itself.

Q.—Instead of the existing system you would substitute the system of having the statistics of price supplied by the Chambers of Commerce ? Would they give you average figures for the whole province and covering particular periods ?

A.—It is up to Government to fix the period. I find in a recent issue of the Trade Journal that the Bombay Merchants' Chamber issue figures.

Q.—How will it be done ?

A.—There must be a co-ordinating authority. There are so many associations. As they supply the data there must be an authority to check and co-ordinate. My own suspicion is that officials care less for these figures than the Trade.

Q.—Do you know that these figures are now supplied by non-officials ? The official simply puts them down and then they are passed on.

A.—But supposing an officer of the Commerce Department goes to the market himself and gets the figures directly from the trade. They would be more reliable.

Q.—Under the present system it is for the bazaar *chaudhries* to supply the figures. If any mistake occurs, it occurs at the time of copying them out. But I can quite appreciate the suspicion you entertain of the official.

A.—Suspicion, not for his being an official, but for his not being a man in the trade.

Q.—But the *chaukidars* are not only men in the trade themselves but they are also considered by other traders as leading men.

A.—I think the figures would be more reliable if supplied by an associate body.

Q.—But when there is no associate body ?

A.—Then we have got to make the best of it.

Q.—Your suggestion comes to this. Where there is an associated trading body the figures must be supplied by them and not by individual traders. You do not, however, mind them passing through the same channel as they do now ?

A.—Initially, they must be compiled by the trading bodies.

Q.—We want practical suggestions for improving these things. How would you improve them ? All that you would like to do, I suppose, is that wherever there is an associated trading body the prices should be compiled in the first instance by them. Is that so ?

A.—Yes.

Q.—That is with regard to wholesale prices or retail prices ?

A.—Certainly, wholesale prices.

Q.—We want retail prices for cost of living.

A.—The family budget system will be the best guide.

Q.—Are there no returns of retail prices ?

A.—What I mean to say is that in determining the cost of living, we can study conditions with reference to family budgets.

Q.—You do not think it necessary to publish retail prices ?

A.—No, I will not say that. I cannot speak about retail prices.

Prof. Burnett-Hurst.—Q.—You suggest that the Associations should make the returns of prices. Do you think that the individual members of the associations would be prepared to reveal the facts to the associated bodies ?

A.—I suppose conditions are not uniform. I am fully prepared to say that there are individual members who would not be prepared to give assistance. If the Government wants the co-operation of these bodies, it is unnecessary—it is immaterial, in fact,—whether one or two or three individuals feel like not giving this information. If it is a part of the official duties of these associated bodies to make such returns to Government, they can arrange it.

Q.—Do you think that the associated bodies—the Chambers of Commerce, Federations, Associations—would be prepared to take on this extra work without remuneration ?

A.—That is precisely the fear which I expressed before the Taxation Enquiry Committee. Some bodies may grudge this extra work.

Q.—So that we cannot expect co-operation from all bodies, but from a few ?

A.—Yes. My view is that these non-official agencies provide a good machinery for compiling certain figures, such as production figures, wages figures, and prices figures. They provide a better machinery than the official machinery. I say that if these associated bodies give figures, they will be infinitely more dependable than official figures.

Q.—I should just like to discuss your answers to the questionnaire. Your idea is not to institute any enquiry into the aggregate national wealth nor to carry out general survey of the economic conditions, but to make an intensive study of certain classes, which you have suggested here.

A.—Yes, that is one part.

Q.—Would you make intensive studies of villages in the same way as you would classes ?

A.—Yes.

Q.—You speak of a typical agricultural village. How would you define that ?

A.—What I mean is this. Barisal is a very fertile district and the cultivators there, I presume, are better off than those of some other districts. On the other hand you have got a district like Bankura where the people are worse off than the average class of cultivators. I would take the average between these districts.

Q.—It is your idea to study individual villages ?

A.—Yes. Just like Mr. Jack's enquiry.

Q.—My idea is that when you are concerned with Jherriah coalfields generally you ought to broaden your enquiry.

A.—It is unnecessary to go to each colliery. As I have remarked in my written statement, the broader the field of generalisation, the more dependable are the results.

Q.—What I want to ascertain is how you would start in the initial stage. Suppose you take the Jherriah coalfields, would you visit each colliery ?

A.—I shall first try to broadcast the census forms indiscriminately to the colliery managers. I would put an officer in charge who would be on the spot. You have to rely on the managers of these collieries. These forms will be filled up either by the managers or the proprietors.

Q.—Would it be desirable to get these forms filled up by the owners? Would not their statements be discredited by those who favour the labourers?

A.—I do not think so.

Q.—Are you going to give the managers or proprietors a free hand?

A.—If an inflated figure is given I shall at once know it. If there is an absurdity, it can be checked at once.

Q.—Do you think these industrialists would supply information to an official body?

A.—Probably, when there is legislation.

Q.—About 1919 a wage census was attempted under the direction of the Department of Industries. That census was purely voluntary. I suggest it was a failure.

A.—I thought it was successful.

Q.—Should this enquiry be carried out by men trained in economic subjects? For instance, if an official—say, the Director of Industries or the Chief Inspector of Mines—had the general supervision and trained economists worked under him in carrying out an intensive study with the co-operation of employers, would you approve of such a method?

A.—I would not approve of departmental heads. I would have special officers of Government—anybody, any special officer.

Q.—Would you like to remove him from local influence?

A.—Not exactly that. The rush of departmental work will not allow these officers to make a systematic study of these things.

Mr. Kaul.—*Q.*—You want whole time officers with nothing else to do?

A.—Yes.

Q.—Through intensive studies, what would you ascertain besides income?

A.—Family budgets will give two or three other things—position of indebtedness, certain habits of life, etc.

Prof. Burnett-Hurst.—*Q.*—What about housing conditions in the coal-fields?

A.—Questions regarding housing conditions should be incorporated in the family budget forms.

Q.—A very important factor is the effect of housing on the families. Would you not therefore investigate housing conditions?

A.—I am not concerned with this, because I know what the position is. We are revolutionising the entire housing system in Jherriah.

Q.—When dealing with income, you will have to ascertain wages?

A.—Yes.

Q.—With regard to the special case of wage earners in Jherriah, the practice is for a family to work as a unit. They work until they fill about two tubs?

A.—Yes.

Q.—They divide the earnings amongst themselves ?

A.—Instead of a group, say, husband and wife. The man cuts the coal and the woman carries it.

Q.—As they work in a group it is extremely difficult to ascertain individual wages ; and I believe in certain places, work is done under contract.

A.—I do not think there will be any difficulty in collecting the figures—even where there is a contract system.

Q.—Economists have found that to be a matter of considerable difficulty. I want your suggestion as to how we can get over that difficulty. You prefer to ask a miner how much he earns. Would you suggest that his statement should be checked by a reference to the colliery ?

A.—As regards wages you can check figures by a reference to the collieries, but as regards other things you cannot do so. You have no option but to rely on his statements. For wages, I think a casual check in the collieries will be useful.

Q.—The miners after cutting coal return to their villages which are at a considerable distance ?

A.—That is the difficulty. For 4 months or so these people are away, and you do not know whether what they earn in the field is their entire wages. Sometimes it is found that a man's income is Rs. 8 or Rs. 9, but he is found to purchase ornaments to the extent of Rs. 20 or Rs. 30. One wonders where the money comes from. Two inferences are possible—either these things are inflated or they earn more money from other sources. In Raneegunge it is an easier study. Besides their industrial wages, they have agricultural incomes, and you can check their expenses as shown in the family budgets.

Q.—Would you follow the miners to their villages ?

A.—It will be necessary.

Q.—But that will be an extremely difficult task ?

A.—As the officer in charge, I would do this. If you go to the Sonthal villages, you can have an idea of their incomes during the harvesting season. You would also know to what extent they spend money on festivals.

Q.—You state that the family budget should be collected for a period of one year.

A.—I meant annual budgets. The figures that I would obtain would be for the year. Certain figures, for instance, wages, I can get weekly. As regards other items, such as clothing, you have to make rough calculations.

Q.—You will have to collect a very large number of budgets.

A.—The larger you collect the better for you.

Q.—Could you give a rough idea of the number which should be collected ? Would ten per cent. be sufficient ?

A.—Carefully taken it might be sufficient.

Q.—Would you select the families ?

A.—Yes, that is also necessary. This labour population is drawn from different sources with different economic outlooks. Anybody who conducts the enquiry must be careful in compiling his data from all these various sources.

Q.—Would you take a certain percentage of each class which forms the mining population ?

A.—We need not take any percentage. In Jherriah 500 will do.

Q.—How many mining families are there in Jherriah ?

A.—I cannot tell you off-hand.

Q.—What proportion would 500 be—one per cent. ?

A.—One to two per cent., provided, as I have qualified all along, you have been very selective and very careful in compiling—if you are intensive in your enquiry, and if you take the trouble of having it checked from the colliery books. I think 500 ought to be reasonable figure.

Q.—May not the man in the street say that the families selected were not typical ? He sometimes expresses his opinion in that manner.

A.—I would only take care to draw my data from different classes of people.

Q.—He may say that you have drawn your data from either the best or the worst. The labour agitator may say that you have drawn them from the best class and the employer may say that you have drawn them from the worst class ?

A.—As regards such criticism I would rather be silent.

Q.—You mentioned the income-tax figures as a means of estimating wealth, but they are most incomplete because they exclude agricultural income.

A.—True, but if you supplement them by intensive studies ?

Q.—Even then, it would not give you the information you want. You have referred to investigation in England. There you say that a census has been taken of people below the income-tax level. That is not strictly correct. That was a census of the wages and earnings of the working classes who may or may not pay income-tax. We have no such information for India : that is why we are suggesting a Census of Wages. Would you be prepared to recommend such a census ?

A.—I have already explained in my answer to the Chairman that my idea is to have some typical enquiries made and to use them as data for generalisation.

Q.—As you suggest, it would not be possible to proceed on the same lines as those laid down by Sir Joshia Stamp. His system is to take the income-tax paying class and to find the distribution of income among them and among those persons below the income-tax level, namely, the wage earning class. In India a mere intensive study will not give you that information.

A.—My personal idea is that if you take a typical village—say, in Birbhum—and ascertain the average monthly income of the agricultural population in that area, which may be say, Rs. 20 a month—you may expect exactly the same results in another typical village where conditions are similar.

Q.—There are five lakhs of villages in India, and certain villages here and there will not be sufficient. You will have to take a large number of typical cases ?

A.—But that will reduce the immensity of the enquiry.

Q.—Would you approve of a system of random selection of villages or group of villages with similar economic conditions ?

A.—I would make typical selections. What I really think, in order to get at the result with the minimum of trouble and cost, is this ; if you go on taking a census of each village, it will take an impossible length of time.

Chairman.—*Q.*—Why cannot the enquiry be done by the local agency in the village ?

A.—That is what I do not like. I want enquiries to be made by very trained investigators in villages where money income is so small. Unless there are trained investigators, it is very difficult to compute with precision.

Prof. Burnett-Hurst.—*Q.*—In your answer to question No. 64, you stated that you would take individual income as the unit ; but you now suggest the family as the unit.

A.—The individual as representative of the family.

Q.—If you take the family income then the family will really become the unit.

A.—In one family there may be more than one earning member. In that case I would substitute the individual for the family.

Q.—It is going to be extremely difficult if you start with the individual and build up to the family.

A.—No. I will have only the family basis. Take a concrete instance ; there are three brothers, who have very little paternal property, living in three different places. Strictly speaking they comprise and make up one family but for our purposes they represent three distinct families.

Q.—With reference to your answer regarding the cost of living, you mentioned something about the average method. Would you kindly explain.

A.—I have, say, 70 budgets made up. Then I estimate what the expenses of a family are and what they require per week. I get all sorts of figures. Some people spend a certain amount of money on certain things and some people perhaps a larger amount of money on the same things. I add these amounts up and arrive at an average.

Q.—That is the same as the family budget method—is it not ?

A.—Yes.

Q.—From the family budget which you have given us it would appear that there is much absenteeism in the coalfields.

A.—Not much. As in factories these labourers are paid on a piece work basis. They do not leave the work unless they have earned to their satisfaction. They work about four or five days per week.

Q.—The earnings of the three adults and two children in the family which you have selected amount to Rs. 16 per head per month ?

A.—Yes, that is my experience.

Q.—You state in your written reply that Indian production is mainly agricultural, and for that reason you do not advocate an enquiry, for it would mean much money and labour.

A.—Yes, that is one of the reasons.

Q.—What is the difference between the price of coal at the pit-head and that at the port ?

A.—If it is a depressed market and we have not enough coal the increase may be more than a hundred per cent.

Q.—In a normal market ?

A.—In a normal market it would be about sixty per cent.

Q.—The difference is considerable ?

A.—Certainly.

Q.—You mentioned that you would ascertain the value of machinery by reference to the output. But you know that the output varies. Would you not value the machinery directly ?

A.—For practical purposes, I think, it would be quite sufficient, leaving aside some collieries which are very well kept.

Q.—With regard to certain coal mines which are below 20 feet in depth, statistics of production are not available. Is it not possible to obtain returns of these mines ?

A.—Certain percentages of mines which are below 20 feet are exempt from the operation of the Act.

Q.—Your Federation only deals with coal.

A.—No, not only with coal.

Q.—How would you ascertain the hours of labour in mines ? Miners come and go as they please and they have no shift system.

A.—There is practically a 12 hour shift. But that means nothing. Those who go down the mines may take some rest.

Q.—Then how would you ascertain the hours of labour ?

A.—We have a rough idea. In Jherriah, as elsewhere, it is generally seven to eight hours. These are the actual working hours.

Q.—Is it not possible to obtain definite information ?

A.—I am afraid not.

Q.—Could not some system like the clocking system be introduced ? In western countries each man has to clock in and when he arrives the time is recorded on his ticket.

A.—We get more or less correct timings here also—because there is the cage man, and he has to keep a record of the men who go down so that in case of accidents the record may be useful. This has got to be done under the Mines Act.

Q.—This information could be supplied to Government if required ?

A.—Yes, certainly.

RAJANI KANTA DAS, M.A., M.Sc., Ph.D.*Written statement.**General.*

Question 1.—Production should be shown both by quantity and value and under heads comparable with those in other countries. Add unemployment and price to the items.

Questions 2, 3 and 4.—No reply.

Production.

Question 5.—Mostly unreliable.

Question 6.—Appointment of specially trained officers.

Question 7.—Yes.

Question 8.—Same as in Q. 6.

Question 9.—Yes, fairly reliable.

Question 10.—By a special intensive enquiry at first and by Census of Production afterwards (Q. 30).

Question 11.—Nil.

Question 12.—Same as in Q. 10.

Question 13.—Nil.

Question 14.—Yes.

Questions 15 and 16.—No reply.

Question 17.—By the same method as in agriculture.

Question 18.—Yes.

Question 19.—In towns by municipalities on the same basis as in the city of Calcutta or Madras and in the large villages by landholders or *tahsildar*. In other places, only by intensive inquiries.

Question 20.—At the ports of landing—by the permanent Census of Production Office (Q. 30).

Question 21.—By special investigation and by Census of Production (Q. 30).

Question 22.—By Census of Production (Q. 30).

Question 23.—Yes.

Question 24.—No.

Question 25.—Yes, by legislation.

Question 26.—Yes, the total value of minerals is an addition of unlike denominations—some prices are collected at mines and others at the port of export.

Question 27.—No.

Question 28.—Nil.

Question 29.—Yes.

Question 30.—There should be an institution for Census of Production for all kinds of industries and should be appointed permanently.

Question 31.—As detailed as in the United Kingdom.

Question 32.—By Central Organisation for the sake of uniformity and comparison.

Question 33.—No.

Question 34.—Yes.

Question 35.—No answer.

Question 36.—No.

Question 37.—No.

Questions 38-39.—By the Census of Production.

Question 40.—Yes.

Question 41.—No. The same as in the case of the answer to Q. 5.

Question 42.—Yes, one uniform system should be maintained throughout India.

Question 43.—Unemployment should be recorded by all means.

Question 44.—No reply.

Question 45.—The standard of the wages in kind should be changed into cash at the current rate of exchange of the particular commodity in the neighbouring market and at the time of payment.

Question 46.—No reply.

Question 47.—Yes, in the same way as in answer to Q. 45.

Question 48.—No reply.

Question 49.—Certainly.

Question 50.—Might be useful.

Question 51.—Yes.

Question 52.—No reply.

Question 53.—Yes.

Question 54.—No reply.

Question 55.—Yes.

Question 56.—No need at present.

Question 57.—Yes.

Question 58.—Yes.

Question 59.—Week for lower grade workers and month for higher grade workers.

Question 60.—Yes, it would be a useful study. But absenteeism is not so common in India as is generally supposed (see Das, *Factory Labour in India*, pages 32—37).

Income.

Question 61.—Wages should be recorded and period for which worked should be mentioned.

Question 62.—The diversity is due to three important factors :—

- (1) Assumption and guesses (too many),
- (2) Duplications (*e.g.*, crops fed to livestock may also be valued separately), and
- (3) lack of uniform standard of allowance for depreciation.

Complete economic statistics furnished by the Government will improve the estimates to a large extent.

Question 63.—I think the function of the Government as far as estimation of national income is concerned, should be limited mostly to the collection of prerequisite data, although for its own sake, it may also undertake such estimation. No Government is regarded by the people to be impartial in this matter, not to speak of a foreign Government, as is the case of India. The list of estimates in Appendix I show that Indian economists are not indifferent to the subject. What they need are accurate and proper data which the Government alone are able to collect in most cases.

I hope that such a vital question will in the near future be undertaken by some impartial organisation, such as the National Bureau of Economic Research in United States, in which all interests such as those of land, labour and capital, should be represented.

Question 64.—Both individual, and the family which will be the household in India.

Question 65.—Year and it will be financial year to keep uniformity with other official records based on time.

Personally I prefer calendar year in all calculations, official or non-official.

Question 66.—Yes, the unit of measurement and the period of time should be the same and uniform.

Question 67.—Yes, since there do not really exist any free gifts of nature as there is no "free" land.

Wealth.

Question 68.—Both methods (*d*) and (*c*) have well-known advantages and disadvantages. The census method (*c*) requiring personal information from owners who are mostly illiterate and entailing secrecy in respect of the returns furnished and incurring immense cost will be less satisfactory in India.

The inventory method (*a*) is preferable for being cheaper, quicker and clearer. It might be applied and repeated at regular periods. Moreover, the prerequisite statistics for such estimate may be profitably utilised for the other purposes in economic and sociological studies.

Question 69.—The list is quite sufficient and corresponds to that adopted and found useful by Australia in 1915.

Question 70.—The method (*b*) the multiple of land revenue will not be satisfactory in the case of the permanently settled area. The method (*a*) is preferred and might be verified or supplemented by the method (*c*) in some cases.

Question 71.—The sale price might be adopted.

Question 72.—On the basis of rent.

Question 73.—Representative groups will suffice in the case of inventory method. If census method is adopted, enquiry will of course be made from every individual or household.

Question 74.—The replies may not be quite reliable. But a few special inquiries may reveal the extent of under-estimation and the figures may be corrected accordingly.

Question 75.—Rough estimations approaching as much towards the actual figures are the only things that could be expected.

Cost of living.

Questions 76 and 82.—No reply for lack of time.

Indebtedness.

Questions 83—86.—No reply for lack of time.

Initial Economic Survey.

Question 87.—There is no question that an initial economic survey should be immediately undertaken by the Central Government under two sections as suggested. But the nature of the work should, according to my view, be different.

Section 1, will take census on *production, wages and wealth*, to which might also be added such other items as *unemployment* and price as suggested in answer to Q. 1, for the whole country.

Section 2, will take up the same inquiry but on an *intensive* basis and for representative Districts or villages with a view to verifying the General Census in Section 1 and offering at the same time a complete view of small economic units.

Question 88.—No, such items as agriculture must be added.

For answer to Part II, see answer to 92.

Question 89.—Might be possible.

Question 90.—The answer will be fairly reliable or they might be taken up in connection with the next items (Q. 91).

Question 91.—The enquiry should be intensive, *i.e.*, by personal observation and independent verification.

Question 92.—The enquiry under Section 1 should be taken up by the Central Government with adequate staff. But the enquiry under Section 2 should be taken up by the semi-official organisations. An independent economist with knowledge in agriculture and not in the service of the Government, should be temporarily appointed as Director with non-official Assistant Directors in each province who may have one or more personal assistants. The actual work must be carried on with the help of those who are residents in the village or in whom the people have full confidence, such as teachers and physicians. For technical work, the services of Government officials may be sought. Sympathy and personal touch are essential in all such studies.

Question 93.—The least amount of time required for such enquiry is a year, *i.e.*, the shortest period of climate cycle. To these must also be added a few months for preliminary work and report. But the year chosen

must be normal year and some previous years must also be included, if possible, for comparison.

Periodical Survey.

Question 94.—Yes.

Question 95.—The intervals should not be longer than decades. It will be easier and cheaper to synchronize such census with Population Census.

Question 69.—Yes, detailed information should be collected annually by some permanent organisation.

Question 97.—I think all the industries should be included.

Special Enquiries.

Question 98.—Yes, but whether Provincial or Central Government will undertake them depends upon the nature of the work.

Questions 99, 100 and 101.—Answers in the affirmative.

Legislation.

Questions 102 and 103.—No reply.

Question 104.—Yes.

Cost.

Question 105—108.—No reply.

Oral evidence, the 13th April 1925.

Chairman.—*Q.*—Would you kindly tell us something of your experience in these matters? You have published some books. I understand?

A.—I have studied Agricultural Economics and I have written books on the labour question. I have just published a book on the Production of India. I travelled for 17 years in Europe and America, was in Roumania, and studied in America for ten years. I also taught in schools there. I worked in farms and in workshops and also under professors. I was commissioned by the American Government to investigate the condition of Hindustani labour on the Pacific coast from California to British Columbia.

Q.—What is their total number?

A.—About 4,000.

Q.—They are principally in Canada, I suppose?

A.—No, 2,600 are in California, 800 in Victoria and the rest are scattered over Oregon and other States.

Q.—What are you doing at present?

A.—I returned to India just a year ago and since then I have been connected with Viswavarati and have been in charge of the rural survey, studying the conditions of villages.

Q.—What do you think should be considered the test of the economic condition of the people in India?

A.—I have given production, wages, income, cost of living. I have added unemployment—also prices. Under production I have mentioned that both quantity and value should be recorded. In my book, I have taken income and production and compared India with the other parts of the world.

Q.—What would you do in order to find out the general economic condition of the people as a whole ?

A.—I would take the country as a whole. There will first be general study and then I would verify those studies by intensive enquiry.

Q.—What test would you employ for the country as a whole ?

A.—Wealth and production. I have suggested one central organisation to investigate these things. We should take agriculture, mining, fisheries, etc. I would also find out statistics of production, and then the value of production.

Q.—Have you made any estimates of production for India ?

A.—I tried many times, but I failed. Everything has to be done by guesses and it is better not to make many guesses. In the introduction to my book I have explained what we understand by prosperity. It is not an absolute, but a relative term. I have taken the different items relating to India and compared them with other countries. I have not added them together, because it is no use, and there will be too many guesses.

Q.—What test would you apply ?

A.—I would apply the American conditions. I would study the wealth of the country as a whole—also income.

Q.—Is the cost of production not the easiest thing ?

A.—Production is more guess work than income. The most important thing is income. The means of collecting the data of wealth are not easy, but I would emphasise the question of income and distribution of income. I attach great importance to it.

Q.—How would you proceed to ascertain the income ?

A.—I would take a particular industry. I would deduct from the total earnings the amount spent on food, live-stock, etc., and what is left is income. The same is the case with mining, fishing, banking, etc.

Q.—You have mentioned income, wealth and production. What other tests would you apply ?

A.—I attach great importance to prices, wages and unemployment.

Q.—What is your experience in America ?

A.—A friend of mine, Dr. King, has written two or three books. He has made calculations on the basis I have suggested. The source of production is most important.

Q.—In your enquiries here have you come to any concrete figures as regards cost of living and unemployment ?

A.—I am afraid not.

Q.—Supposing you proceed to make an economic survey of the village what sort of information would you collect ?

A.—I have started an ambitious project for rural survey. I have divided it into three classes—first the political aspect, secondly the economic aspect and thirdly the social aspect. As regards the economic aspect, I have taken the different industries. I have also taken the question of the family budget, cost of living, housing conditions. In agriculture there are many other conditions, such as livestock.

Q.—Under the economic aspect what have you taken ?

A.—I have taken industries, agriculture, trade, banking, services, miscellaneous (including mining, fishing, forestry). The most important thing is agriculture.

Q.—How would you proceed to collect information ?

A.—I have prepared a questionnaire for each village. I want to know the weekly wages of the agricultural people, the kind of work they do, the rate of wages, how many days in the week they work and so forth. I have men going round to these people and asking them about these things. I am doing another thing. There is always a market not very far from the villages. In some cases 10 or 12 villages have the same market. I get the prices of particular commodities. Sometimes, when calculating the cost of living, I refer to the prices, week by week. That is important in cost accounting.

Q.—Do you do any lecturing work at Bolpur ?

A.—I lecture on Economics and Sociology.

Q.—What is the object of this survey of yours—What results do you expect to get, what is your aim ?

A.—There are two view points—one as a scientist and the other as a social worker. As a scientist I am studying this question. Before I went to America, I was very much impressed with the poverty of the people, and I thought I would study their economic conditions. I studied agriculture for five years and economics for five years. I am just writing the results of my investigation. I have already produced five books on the labour question.

Q.—What is the ultimate upshot of your labour studies ?

A.—As a scientist, I want to give the people an exact idea of the conditions of these industries. I have stated two objects in my books—one is to give the position or objective background of national wealth and the other to find out the fundamental cause of poverty in India. You must know the disease first before you can consider the medicine. My object is to find out facts first.

Q.—Under what essential heads would you collect information ?

A.—Arable lands, site for holdings, distribution of holdings, domestic schemes, dairy farms, agriculture, hand manufacture, weaving, carding, etc.

Q.—What would you include in your schedule of economic survey ?

A.—Agriculture will not come in. Industries will, and so will also services and factories.

Q.—If we have to start with an economic survey, it is necessary to take stock first and have a comprehensive survey. You must start with a

basis. After that you want periodical survey ? Then there must be some staff to do accounting ?

A.—Yes. Perhaps the population census and this census could be combined.

Q.—At what intervals would you have the industrial census ?

A.—If there is an organisation they will publish everything every year. Special investigations on certain questions may be made once in three years. Ten years is too long a time.

Q.—At what intervals would you have the industrial survey ?

A.—Every year, but special studies every 5 or 10 years.

Q.—What voluntary agencies would take part in this rural survey or economic survey ? Would any private agency come forward ?

A.—My experience is that private agency is hard to get. The people do not realise the importance of the work.

Q.—How many families can an enumerator take from day to day ?

A.—I have not made any general census as yet. I have no idea.

Q.—With reference to your answer to question 62, have you made any estimates yourself ?

A.—No.

Q.—You want correct data, and you say that it is only Government that can give you them ?

A.—There must be authority, and Government has authority to collect data.

Q.—You say here, in reply to question 63—“ I hope that such a vital question will in the near future be undertaken by some impartial organisation ”. How is it that you say that Government alone can give them ?

A.—The facts should be collected by Government—the review should be done by another agency.

Q.—Statisticians do not review, it is the administrator who does ?

A.—That is another work, which I would leave to a private agency. We have at least some individual workers doing that work and I hope in the future people will also realise the importance of economic study. If there is an organisation, it can have representatives from all concerned, and they can check the figures collected.

Q.—You will have a sort of advisory board ?

A.—Yes, you may call them advisory. They will criticise.

Q.—You would not ascertain individual wealth by the census method ?

A.—I would adopt the census method in the beginning, afterwards I would obtain information by the inventory method, which is cheaper.

Q.—Is the census method expensive ?

A.—Yes.

Q.—You would have a house-to-house census throughout the province. Would not that be very expensive ?

A.—The world is progressing, while we are in the dark. Hence this should be undertaken.

Q.—Supposing it costs about Rs. 200 per thousand of population. Is it worth investigating ?

A.—I do not know how much it will cost for the whole country.

Q.—It will be about 5 lakhs—Rs. 1 per family ?

A.—If it is possible to get that money, it is worthwhile undertaking it. Government can do nothing better. The effect of this will be industrial consciousness, and people will take to industrial development.

Q.—Take any city or village. You prepare the statistics of income, wealth and production. Do you not think the local population will make use of the statistics to improve their own condition ? The information will be of special value to the people of the locality, in the first instance.

A.—I say that a few villages may be intensively studied, and then the country as a whole. That will be the basic element for something else. This will create a new economic consciousness in the people. The figures can be utilized by them.

Q.—Do you think they will be willing to pay for it ?

A.—I do not think that many will be willing. I think the Imperial Government should take it up and they can distribute the cost among different people.

Q.—Do you not think that the local people should pay for it as they will be most benefited by it ?

A.—The work will be done by the Imperial Government and the cost should be distributed. The distribution of cost is quite another question. The Government can spend the money as an investment. I do not think that many people will agree to pay.

Q.—But gentlemen like you can do the propaganda work ?

A.—But that will take a long time.

Q.—In your answer to question 92, you say that the enquiry under Section 1 should be taken up by the Central Government with an adequate staff, but that the enquiry under Section 2 should be taken up by semi-official organisations. How much would be official and how much non-official, and how much of each would there be when they are working together ?

A.—There should be two kinds of investigations—one for the whole country and one for intensive study. The enquiry for the whole country will be more or less of a general nature and this can be conducted by Government officials. But the intensive study, which would require gaining first the confidence of the people, should be done by non-officials. For the general enquiry there may be a Board of Directors, and if they divide themselves into small groups they can do the work. But the intensive enquiry should be done with the help of the villagers themselves, and of the doctors and others who are in close touch with them and who have also got the confidence of the villagers.

Q.—Have you studied the methods and conditions in America ?

A.—Yes, I have studied them and written a book on them.

Q.—Can you say how these methods can be applied to Indian conditions? What is the method employed in townships there?

A.—It is done mostly by social workers, who adopt the method of getting family budgets. I have not worked with them and so have no personal knowledge.

Mr. Kual.—Q.—I do not quite follow your reply to question No. 30. You say "By a special enquiry at first and by a census of production afterwards". You are advocating a general enquiry for the whole country and then intensive enquiries in order to find out details in specified places. But here, in your written answer, you want to have intensive enquiries first and a general census of production afterwards.

A.—A census of production will take a long time. For instance, we have no statistics regarding meat, tallow, wool, etc. These should be intensively enquired into.

Q.—You do not want any general survey of these productions made?

A.—These things are mainly individual production. There is not much large-scale production.

Q.—But the result in one village cannot be an index. Why do you oppose a general survey?

A.—I do not oppose it. You can start it after the intensive study.

Q.—It will take you years before you can have your general survey.

A.—If you make an intensive study, you will have an idea of the things in use and how much is produced.

Q.—The same applies to question 12. You would not make any general survey of these things?

A.—No. We do not know the amount of milk, butter, etc., produced and the Census Bureau will be hard put to it to find out.

Q.—You mean that the general survey can be made after an intensive enquiry. The Legislative Assembly, however, want the enquiry to be finished within a year and it should be as reliable as possible. It is no use making an enquiry the result of which will be unreliable. What harm will there be if we make the enquiries about these things in the same way as we take the cottage industries?

A.—In order to make it more accurate, we must have intensive enquiries.

Q.—My question is whether we should have the intensive study first or the general enquiry.

A.—I would be satisfied if a general census of production is taken and it is supplemented by an intensive study which can be kept up till the next census of production.

Q.—In your answer to Q. 17, you say that statistics of forest produce for unclassified forests and private forest areas should be gathered by the same method as in agriculture. You mean that this should be ascertained by the revenue agency?

A.—By a better method than is applied by the revenue agency.

Q.—But you said in your written reply—“ By the same method as in agriculture ”.

A.—I do not mean the present method but the method which ought to be introduced for getting agricultural statistics.

Q.—What method would you suggest for agriculture ?

A.—I would advise that there must be a central statistical bureau and they will employ trained officers to collect statistics.

Q.—From where ? From the village talukdars or the local Government ?

A.—These trained men may work with the bureau of agriculture and in some cases there may be different agencies for getting agricultural statistics, not only of the production, but also of the price.

Q.—But trained men are now employed.

A.—The Revenue officers collect their data from the *chaukidars*, as far as my information goes.

Q.—Would you like the same system to be introduced where they have got a revenue agency ?

A.—My impression is that these are collected by ignorant people. That system ought to be abolished and information should be collected by people who are trained for this work.

Q.—I understand from your answer to question 8 that you are in favour of a staff similar to that employed in other provinces being introduced in Bengal, Bihar and Orissa for getting agricultural statistics. And I understand that you want statistics of production of unclassified and private forests to be ascertained by the revenue agency which at present is used in some provinces.

A.—Yes. The only thing I am not sure of is the quality of the people working.

Q.—Anyway, you want the quality to be improved.

A.—Yes.

Q.—Regarding answer to question 19, I presume you are aware of the system in force in Calcutta. Could you tell us how you would find out the production of fish ?

A.—There are several agencies.

Professor Burnett-Hurst.—Q.—You refer to the statistics of the fish traffic into Calcutta. I do not think that will help us in securing statistics of the Sunderbund fisheries.

A.—I do not think there will be any difficulty in that. In towns, the municipalities can do it. In villages, the statistics can be collected on market days. You may miss something, but the result on the whole may be satisfactory.

Q.—Does your statement refer to sea fish or fresh water fish ?

A.—In Bengal there is fresh water fish and hardly any sea fish.

Q.—But a certain quantity of fish does not come to the market at all but is consumed direct.

A.—You may miss them, but you will have a fairly good idea.

Q.—I do not quite follow as to how the statistics can be collected in the villages.

A.—I do not think that any method can be devised which will give us exact data. In villages there are zemindars and tahsildars who may collect some data from the markets in their jurisdiction. In villages people sometimes catch their own fish. This can be gathered by an intensive study.

Q.—In your answer to question 31, you say that the census should be as detailed as in the United Kingdom.

A.—I think so.

Mr. Kaul.—Q.—Before we go back to Q. 31, I should like to ask you one question about agricultural production. You suggest that we should take production from year to year, that is, our statistics should be kept up-to-date from year to year. Do you want anything else to be done in the case of agricultural production?

A.—We do not know anything about livestock.

Q.—That is pastoral production. So far as agriculture proper is concerned, beyond this, would no particular enquiry be necessary periodically?

A.—If you take annual statistics, nothing further is necessary—except the valuation of implements.

Q.—We have a quinquennial census of livestock and implements.

A.—Implements are insignificant in India. If there are year to year statistics, there is nothing to supplement it.

Q.—In answer to question 31, you have suggested that our census of production should be as detailed as in the United Kingdom. Would not the cost of that be very excessive? In the United Kingdom the cost is £158,000.

A.—In the initial stage, of course, it will be expensive, but it should be introduced gradually. I think it is an investment. The time is coming when we must do it. I say it should be done gradually. I believe in evolution.

Q.—In answer to question 32, you suggest a central organisation for the sake of uniformity and comparison. Do you mean to suggest that you want all the information regarding each industry to be collected directly by the central organisation?

A.—Yes, but they may depute others to do the work.

Professor Burnett-Hurst.—Q.—Do you want the information to be collected as a matter of course by the central bureau or the provincial bureau?

A.—I want the imperial bureau to do it. Provincial bureaux may be deputed to do this work.

Q.—You do not mind their doing it through provincial organisation?

A.—No.

Q.—At present this is done by the Central Government?

A.—Yes.

(*Mr. Kaul.*—I am not sure of this being collected direct by the Central Government.)

Mr. Kaul.—*Q.*—In answer to question 66, you say that the period of time should be the same and uniform. If one year is taken as the unit, do you think the cooly will be able to tell us what he earned during the year ?

A.—We go every week and ask him how much he earned during the week. If you go at the end of the year, he will not remember.

Q.—In answer to question 67, you say " Yes, since there do not really exist any free gifts of nature for lack of ' free land ' ". We do not quite follow how there will not be free gifts of nature. Whether the land was free or not, whatever is produced on the land is production.

A.—You say it is a free gift. I say free gifts do not exist.

Q.—By free gifts we meant things for which the people have not to pay.

A.—In that case the production should be calculated and taken into account.

Q.—In answer to question 87, I understand from all this discussion we have had that you want the general census to be complete in itself, although you may not be able to collect very reliable data.

A.—I want it to be comprehensive. We may not be perfect in a year, but it should be comprehensive.

Q.—In reply to question 93, you say that the year chosen must be a " normal year ". What do you think is a normal year ?

A.—Last year, in Bengal, may be said to be a normal year. Although the rain was late, yet it may be called a normal year. You will have to verify it by comparison with previous years.

Q.—Would it not suffice to say what the conditions were in the year ?

A.—Yes, it would be all right if we knew the conditions two or three years back.

Q.—Suppose you begin to-morrow, and take the production of last year—the year ending last April, whether that year was good or bad. You only collect information for that year ?

A.—The difficulty is there is a great deal of variation from year to year. In a year of famine it will not give good results. The figure should be corrected from previous statistics.

Q.—In reply to question 88, you say " Such items as agriculture must be added ". We wanted to know whether, in ascertaining the food production or milk production, it would suffice to have figures for the village as a whole, or whether the figures would have to be ascertained from every individual cattle owner or garden owner.

A.—I think there is a little confusion here. Yes ; we should take the whole village, count the number of trees or cattle, and ascertain how much they produce, and then divide the total by the number of the population.

Professor Burnett-Hurst.—*Q.*—Would you not take family units ?

A.—That is also possible.

Q.—In your book on “ Production of India ”, you estimate the quantity of fish produced in 1921-22 at 29½ crores of rupees.

A.—Yes.

Q.—Whereas Mr. K. T. Shah estimates the total fish production of India at just over 3 crores. Your estimate is nearly 10 times as much.

A.—That is only guess work.

Q.—You do not think at present it is possible, on the data available, to give a correct figure ?

A.—No.

Q.—You suggest that he has also made guesses ?

A.—I think so. I have not seen his book. I do not know whose guesses are correct. I have followed some statistics.

Q.—You apply the fish consuming capacity of Bengal to the whole of India ?

A.—I have taken Bengal, Bombay and Madras on the assumption that Bombay and Madras people take the same quantity of fish.

Q.—In reply to the Chairman, you said that you wanted a house-to-house census of wealth in India. Do you realise the magnitude of the task. There are 500,000 villages in British India and about 5 crores of houses. Do you think it is possible to visit these 5 crores of houses ?

A.—There are two methods—the inventory method and the census method. I approve of the inventory method, but as we have no statistics to begin with, we must have the census method at the beginning. I know it will be a tremendous task, but when we take a census, we must also start on this.

Q.—Suppose we asked you about your wealth, would you reveal it ?

A.—There will be some difficulty, but the census method adopted in Australia should be followed. They depend on the people to answer personal questionnaire.

Q.—That is done by an educated population ?

A.—The psychology is the same. Here in India somebody else will have to make the answer. The possibility of hiding will be the same there as here. There may be a great deal of understatement. The people are not sufficiently educated to give answers to that kind of questions. We may not get correct answers in one investigation, but gradually the people will give the information.

Q.—Considering the illiteracy of the people, do you think they will give information of this kind ?

A.—If you employ local people, I think they will be willing to give answers.

Q.—Would they not be afraid that they are likely to be taxed if they give this information ?

A.—You must convince them that they have nothing to fear on that score.

Q.—Would this not require a considerable staff as large as the Census staff ?

A.—Yes.

Q.—In the census an unpaid staff is very largely employed and it experiences certain difficulties, even in obtaining information on subjects which are not of a private nature. Do you not think that a large number of investigators would shrink from this investigation ?

A.—If the people understand the thing they will give information. The possibility of underestimating is the same here as in other countries.

Q.—Would you not have to employ a staff comprising men who are very, very tactful ?

A.—In the villages, what we do is first to mix with the people, and then you can easily get the information. But if you go and suddenly ask them questions, they will be afraid to give the information. Local people who are familiar with the village would be able to do this work quite easily.

Q.—We are dealing with all classes of people—money lenders, bankers, etc. Do you think they will state their wealth ? Just as in the case of income-tax—where two or three books are kept—the people will not give correct information ?

A.—That is the case everywhere. In America they keep two or three sets of books. In the case of income-tax, you have to fill up a declaration. In the village it will be the same thing, though it will be done through somebody else. Somebody else would fill up the form.

Q.—You want to set up a machinery of specially trained officers to report on agricultural production. What type of specially trained officers would you employ ?

A.—That is more or less a technical question. I mean people who have some practical training in agricultural line.

Q.—Do you want a Bachelor of Arts or a Master of Arts ?

A.—No. These statistics are generally collected by chaukidars, who I do not believe can do the work. They are certainly not reliable.

Q.—What would you pay them ?

A.—I cannot answer that.

Q.—But that is important ; we want to know it. Would you employ a person on Rs. 50 a month ?

A.—It is difficult for me to suggest a salary. I was many months away from India, and I do not know the situation now.

Q.—Could you secure a man on Rs. 50 ?

A.—I would have a man who had studied up to the B. A. standard or the I. A., and even the Matriculation Standard, who had obtained a little training in collecting statistics in some agricultural school.

Q.—Who is to pay for that training ?

A.—Government, of course. But people will naturally go there for a special course.

Q.—For how many villages would you make him responsible ?

A.—I do not know.

Q.—One of the fundamental subjects of our enquiry is the cost. We are expected to state how much the survey will cost and to lay down some definite lines for conducting it.

A.—My idea is that if you know what is required you can just start it, go as far as possible and gradually fill it up.

Q.—What do you mean by that ?

A.—Suppose you want a census of production. You cannot get a census of all articles, so start with some and the next time add some more and so on.

Q.—Suppose we start with agriculture production, we want a staff for that. You say that the present staff is defective and you want to employ trained men on Rs. 50.

A.—Not all men on Rs. 50, but only those who will go from village to village.

Q.—For how many villages would you make them responsible ? Ten, fifty or one hundred ?

A.—It would depend on the capacity of the man.

Q.—It is very essential to get down to details, because a scheme very often breaks down in details. It breaks down over cost or for some other reason. That is why we want to know the detailed cost of your scheme, as the country will not sign a blank cheque. It is no use recommending a scheme without first knowing what it will cost.

A.—I have not gone into that question, and I am sorry I cannot answer this point.

Q.—I suggest that the scheme put forward by you would cost the country a tremendous amount of money, which it cannot afford.

A.—I am not giving you a scheme right now.

Q.—Most Governments will endorse the opinion that we want a skilled agency for collecting statistics as in other countries, but the question is whether this country can afford to maintain such an agency. What the Committee is trying to ascertain is the type of agency that will do the work efficiently at a comparatively low cost ? We want your assistance with regard to the item of cost.

A.—If you want an answer on this point I can send it to you later on.

Q.—What we want to know is this—do you suggest that in India there should be a system of reporting on crop production, etc., similar to that which exists in the United States, where they sink a tremendous amount of money in such work ? Do you think that if a certain amount of money is spent, accurate information will be obtained ? Would you like to do it irrespective of the cost ?

A.—You should do it as a sort of investment and go on with it gradually.

Chairman. Q.—The whole province ?

A.—The whole country. Take the census of agricultural productions, department by department, but your enquiry must cover the whole country.

Q. Then, you will start with agricultural production an enquiry into crop reporting will be most expensive.

A.—We have some Government agricultural officers working with us, who also do some irrigation and co-operative work. The services of some of them can be utilised.

Q.—You would put production before wealth and income.

A.—Yes; because we cannot get at the income figures unless you take a census of production.

Q.—So your idea is to get statistics of production and then arrive at an estimate of wealth and income?

A.—Yes.

Q.—With reference to your answer to Question 26, in what way would you determine the price of coal?

A.—If it is sold in the country, then the market price in the country. If it is sold in Calcutta, then the Calcutta price; if in Bombay, the Bombay price.

Q.—How would you ascertain the quantity sold in Calcutta or in Bombay?

A.—It is very easy to ascertain it from the export figures.

Q.—But if it is for home consumption?

A.—Then we can get it from the railways.

Professor Burnett-Hurst.—Q. Inland Trade Statistics have been abolished. Would you recommend their re-institution with improvements?

A.—Yes.

Q.—With reference to your answers to Questions 38 and 39, do you mean the production of individual families?

A.—My idea is that for the time being, if you make intensive studies in villages, you can get the required information. After that you can make a general survey.

Q.—But the census of cottage industries will be a tremendous task!

A.—It should be combined with the census of population. In many countries, such as America, they do it in this way.

Q.—Would you also combine the census of income and wealth with it?

A.—Yes, naturally.

Q.—But that would make the census of population a tremendous affair. Where would you get the people to volunteer at the time of the census? There would have to be a paid agency in this case?

A.—The village *panchayats* might render some help. I do not know whether they are paid.

Q.—With your knowledge of economics, do you think that such statistics would be of any value?

A.—I do not think they are the fit people, but they may be guided by educated and trained men.

Q.—You mean a staff of paid supervisors?

A.—Yes, and questionnaires must be framed, too; they are very important.

Q.—You will also have to appoint men of tact and discretion ?

A.—They will be available.

Q.—My personal experience of educated voluntary workers in a city like Bombay is that, whereas, in the first instance, volunteers came in large numbers to collect information relating to the income of households, when the time of actual collection arrived, a large number disappeared.

A.—You cannot entirely depend on volunteers but the *Panchayats* are, I believe, Government people.

Q.—You mean the *chaukidari panchayats* ? Do you not think that an agency connected with the police for ascertaining wealth and income will frighten people ?

A.—Yes ; it is a very difficult affair.

Q.—I suggest it is going to be an extremely difficult and expensive business to carry it out on the lines you have indicated.

A.—It is true ; but it is worthwhile doing it. A start should be made.

Q.—Would you not, instead of that, substitute a series of intensive enquiries in different parts of the country, that is to say, enquiries by certain skilled investigators who will spend a considerable time in villages or groups of villages, making intensive enquiries ? Would that not be more satisfactory than an attempt at a wider and a more elaborate enquiry ?

A.—I advocate both.

Q.—I suggest that your general enquiry is of an intensive character.

A.—My idea of an intensive study is for the purpose of avoiding a very intensive study of a general character. The statistics of production will also help in the end.

Q.—You want annual statistics of industrial production ?

A.—Yes.

Q.—Do you realise that the first Census of Production in the United Kingdom took 7 years ?

A.—It may be so in the beginning.

Q.—You mean that statistics of production should be collected annually, that is, that the producer should be asked to state the quantity of goods produced annually rather than go into the details of raw-materials used, etc. ?

A.—You may make a general enquiry in the beginning and go into details afterwards.

Q.—It is very detailed in the United Kingdom. Such details would be impossible here ?

A.—If you make systematic efforts, it can be done gradually.

Q.—Would it not be better to confine oneself to annual statistics of production and a decennial census of production ?

A.—In America it is decennial. My idea is the same.

Q.—You want unemployment to be recorded. How would you ascertain it ?

A.—By an intensive study I would take up some workers and then find out how many days in the week they work.

Q.—Is it your idea to have an unemployment index number as is published in England ?

A.—We will gradually have to come to that, too.

Q.—But you have no machinery here as in England for that kind of work ? There you have Trade Unions and Labour organisations for recording the amount of unemployment ?

A.—That is the very thing I am going to suggest. They are going to pass a Trade Union Legislation. One of the conditions is that they must keep a record of the employed or unemployed. In Ahmedabad, they have got Trade Unions, and they have realised the need of such information.

Q.—But the Trade Unions have declined and have only a nominal membership. How would you then obtain reliable information ?

A.—If we make a start in the right direction, people will get educated gradually. In Ahmedabad we have got Trade Unions. In other countries Labour Turnovers.

Q.—You are aware that there is a considerable amount of movement of the labour population from industrial centres to villages and there is a considerable amount of absenteeism ?

A.—It is not worse here than in any other country.

Q.—There is no comparison in the amount of absenteeism in England and India. Take Bombay, for instance, there in a certain factory where as much as 20 per cent. of the regular staff were absent every day. Would you take the records of the Bombay Labour Office as reliable ?

A.—Yes.

Q.—Their figures show that the percentage of absentees was from 8 to 25 during the period—May 1922 to January 1924 ?

A.—I have also got actual figures, though not from a large number of factories. I have compared the figures and I do not see very much difference between the two countries. I have taken the Buckingham Mill and two or three other mills.

Q.—In your answer to Question 73, you advise the inventory method. But how would you arrive at representative groups ?

A.—It is very hard to define. If it is a village or a small town, you can classify it easily, though in a rough way, of course.

Q.—Do you think that everyone will agree to your selection of groups ?

A.—There the personal equation will come in. In ascertaining income and wealth you cannot do away with the personal factor.

Chairman.—Q.—In your answer to Question 92, you suggest semi-official organisations for intensive enquiries. Do you think that they will be in Government employ ?

A.—No ; not wholly. That kind of agency must have the confidence of the people, and they will do better work.

Professor Burnett-Hurst.—Q.—Who is to finance the enquiry ?

A.—Government.

Q.—Do you think Government will finance the enquiry when the men connected with it are not under their control ?

A.—They will be Government officials.

Q.—In reply to Question 92, you definitely say “ Not in the service of Government ”.

A.—If you employ an economist from this University, he is not in Government employ.

Q.—Why do you exclude economists in Government employ ?

A.—Because he is allied with the Government policy. People will suspect that the enquiry is being conducted for Government purposes. But if a person like Professor Brown comes, the people will know that he is an independent man.

Q.—Why do you consider an officer of the Indian Educational Service or Provincial Educational Service to be allied with Government policy ? Are they not sometimes the strongest critics of Government ?

A.—Yes, in some cases. There are men of independent views. A man like Professor Mukherjee, although he may work for Government from time to time, is not allied to the Government policy.

Q.—How can unemployment be measured in this country ?

A.—I do not think that we can get the actual data. We can only get it by intensive study—by a house-to-house enquiry.

Q.—Would you extend the study to agricultural labourers ?

A.—If we make a study of several typical villages, we can know how many days they work and how many days they sit idle.

Q.—What is your definition of unemployment ?

A.—A man willing to work, but who cannot get work. I have not thought out a scientific definition.

Q.—In the case of agricultural work, sometimes a man is forced to remain idle. Would you regard him as unemployed ?

A.—No. Those are farmers. In the case of agricultural labourers, we should see how many days the people are actually engaged. That will be another study, and that will show how many days the labourer works.

Q.—How many villages are you dealing with in your rural survey ?

A.—I am taking three villages at present, and I started about eight months ago.

Q.—How long will you take to complete it ?

A.—It will take a long time. The minimum is one year.

Q.—You cannot possibly carry it out in less than one year ?

A.—No, it will take a year and a half or two years. But when I have once made a study in one village, it will be less—say, about 18 months. The preliminary work takes some time.

Q.—Bengal villages are of an entirely different type to those of the United Provinces. Do you share the view expressed in the Census Report that Bengal villages are less compact ?

A.—I do not think there is much difference. It is the same thing with the villages in the United Provinces.

Q.—They are concentrated in one place and are scattered in another ?

A.—Yes, because there is spare land.

Mr. C. G. FREKE, B.Sc., I.C.S., Director-General of Commercial Intelligence.

Oral evidence, the 14th April 1925.

(As requested by the witness, the evidence is *not* published.)

MR. R. S. FINLOW, B.Sc., F.I.C., Director of Agriculture, Bengal.

Written Statement.

Question 5.—Excepting jute, all crop forecasts are merely rough estimates made by District Officers through the agency of choukidars, Circle officers, etc. The accuracy of such forecasts is conjectural. In the case of the jute forecasts, for which there is a check in the Bengal Chamber of Commerce Returns statistics are collected through the agency of the *Panchayets*, and are usually reasonably accurate. Provincial Season and Crop Reports are prepared from the same information.

Question 6.—The question of accuracy is very highly one of staff. In a cadastrally surveyed area it should be possible to check the area of each crop accurately by compilations from village maps; but this could only be done by a large permanent staff which would be very expensive and it is doubtful if Government could afford it. Even after an accurate estimate of area the crop-cutting experiments require great care as they hold possibilities of considerable error.

Question 7.—This does not apply to Bengal.

Question 8.—As the present staff is insufficient for thorough preparation of reports on the main crops, it would be unwise to add still further to the work to be done. I doubt if obtaining the information at extra cost would be justifiable; but I think that sufficiently reliable information could be obtained by studying in detail one or two villages in each district.

Question 9.—Yes. The information regarding the cattle census collected through the agency of the *Panchayets* may be taken as fairly accurate.

Question 10.—I suggest the best way would be to apply to the trades concerned with the articles in question.

Question 11.—None of importance.

Question 12.—For information of this kind, nothing but intensive study will serve the purpose, and as it would be too expensive to apply such study to the whole country, it would be necessary to confine it to typical villages or tracts.

Question 10.—(a) The criticisms seem genuine in some cases, but it would be impossible to obtain figures which would apply even for the same month as all cases. For instance, in Bengal, the wages of men weeding jute and highland paddy vary with the season. If the weather has not been quite favourable and the work has to be concentrated into a short period, labour becomes short and its price rises heavily. Continuous observation would seem to be necessary.

(b) There is no classification such as ploughman, sowers, weeders, reapers, etc., amongst agricultural labourers in Bengal. The same agricultural labourer would do all the different kinds of work according to requirements. The generic term "agricultural labourer" is probably sufficient in most parts of Bengal, though the term might be divided into—

(1) Those who cultivate their own land.

(2) Hired labourers.

(c) *Vide* (a) above.

(d) *Vide* (b) above.

Question 41.—Yes. The information is supplied by the Collector through the agency of Sub-Deputy Collectors specially deputed for the purpose.

Question 42.—*Vide* answer to Question 40. Each province should be left to decide its own system regarding the classification of agricultural workers. For Bengal, the Bombay classification would probably be fairly satisfactory for agricultural labour.

Question 44.—Yes, if the object is to arrive at the total income of the individual.

Question 45.—I have no suggestion to offer as to the fixing of definite standards of conversion, excepting that extended observation would be necessary in order to ensure accurate results.

Question 46.—This does not apply to Bengal.

Question 47.—The value of supplements could only be obtained by detailed enquiry.

Question 49.—Yes, if it were feasible.

Question 50.—It would be advisable if it could be arranged.

Question 51.—This again would necessitate prolonged enquiry as the hours would probably vary considerably not only with the season, but with the degree of pressure of work.

Oral evidence, the 14th April, 1925.

Chairman.—*Q.*—Are you in charge of the Fisheries ?

A.—They have been closed down. The Government intend to establish a new Fishery Department but the scheme has not matured yet.

Q.—With what branch of economics are you acquainted ?

A.—I do not claim intimate knowledge of any branch. I am a scientific man really in agriculture. As far as pure economics is concerned, I do not claim to be a specialist at all.

Q.—To what extent do you think that the statistics of agriculture published for Bengal are reliable ? What further tests and what further checks are necessary to make them more reliable ? How are they at present collected ?

A.—The jute forecasts vary a good deal from year to year. On the whole, they are accurate except for two or three years from 1920 to 1922.

These were three inaccurate years. Beyond that the whole forecast has not varied very much. In the case of jute, there have been bad times. There is no check on the jute forecast but there is an accurate check on the trade figures and it is possible to judge how far it is accurate. Up to 1919, for several years it was quite accurate. Then, 1920, 1921 and 1922 were all bad years. Perhaps, there is an excuse for that, because these were years of violent fluctuations in prices, and the forecast becomes specially difficult under the present circumstances. In the present year, I do not think it will be very far out. The present forecast may be rather more accurate than the preceding ones. Up to the time of the Retrenchment Committee, we had a better staff and also more officers in the Agricultural Department. Special officers are deputed each year. The system is to attempt to take village maps of settled districts and to take actual areas under jute, and this is added up for each district.

Q.—What qualifications had these men to do the jute forecast ?

A.—A very slight qualification. There were one or two Matriculates but they were without any economic or agricultural qualifications. They were able to get us a good many figures and then we went and checked them to see how far they were right.

Q.—Were they reliable ?

A.—The forecasts were tolerably correct. I forget the exact year. I will give it to you later, but I think the forecasts on the whole showed an improvement from that time.

Q.—The personal element comes in ?

A.—Yes.

Q.—Do you prepare any statement of the area actually under crop as distinct from the forecast ?

A.—We have seasonal crop reports in the areas. Various crops are reported. Some crops are reported in detail. Then the minor crops are reported and the figures other than this are totalled up.

Q.—What is the system for ascertaining the area under each crop ?

A.—This is done by the Collectors through the District officers. There was a certain amount of discussion whether we should not take part in that. At present, we do not check any part.

Q.—The figures are supplied by the Collectors ?

A.—Yes, in a general way the figures are given by the District officers to the Collector and by the Revenue staff.

Q.—They have got a subordinate Revenue staff ?

A.—Not in all tracts. For instance, in some places, as far as the jute forecast is concerned, the Police are the only agencies employed. They have got Circle officers but it is not so in every district. I do not claim to be an authority on this particular subject. I know from the jute forecasts, in which I have to take a special interest, that there are tracts which the Revenue officers have to look after.

Q.—So far as the areas are concerned, are they correct ?

A.—On the whole, the areas are fairly correct. If you take one district, it is quite probable that there will be a large percentage wrong. If you take another district, it will be the other way. We actually find that

in settlement operations. I think it is sometime since it occurred, but, I think I am right in saying there was a considerable deficiency and the amount for the forecast was considerably over-estimated in one district, but in the other districts the deficiency was made up.

Q.—How do you know it was identical ?

A.—After the forecast figures were published, the settlement figures were out and the whole of the errors were compensated.

Q.—Where you have a permanent settlement and you have not got a Revenue staff, I understand that the area under each crop is reported by the local Police, the *chowkidar*.

A.—Yes.

Q.—You cannot be certain that he has correctly stated the area ?

A.—I do not claim any accuracy.

Q.—I want to know in what sort of way it is possible for your department to help in arriving at the correct area ?

A.—In each District we have an agricultural officer. We have been retrenched and there are one or two districts where we have none, but we shall have them again. Besides the agricultural officers, we have a certain number of demonstrators. There used to be many of them ; one in each town.

Q.—How did they help matters ?

A.—The demonstrators are supposed to be men with no great technical training but before they were appointed as demonstrators, they were taken to the Government farms and given practical lessons. I do not think the training was sufficient. We are now taking them and giving them a better training. The idea was that the Agricultural Department should ultimately take over the whole of this work, because it has been put back tremendously by the Retrenchment.

Q.—Who does the crop reporting now ?

A.—It is the Collector and his staff. In some places it would be the Revenue staff and in some places it is the *chowkidar*.

Q.—Can you give us a rough idea as to what it would cost if you took over the crop reporting ?

A.—It would mean a lot if we took over forecast reports of the whole area. We take the village maps and check every area. I would not like to say how much, but it would mean a big sum. There is a small production in the settled districts due to transference of land, but it would be possible in the settled districts to get a fairly correct report.

Q.—How are their values estimated and the quantity fixed ?

A.—Supposing we want the values, I suppose we would have to go to that district itself and find out the cultivation of jute. We find that the price varies ; in some places it is Rs. 1½ a maund and in other areas only 8 annas a maund.

Q.—At present, since you do not go fully into the matter, what would it cost to get the additional information.

A.—I do not think it would cost very much. I believe, as a matter of fact, we receive accurate reports and we publish the current prices. We do not publish these details in the forecast.

Q.—You do not think it would cost very much more ?

A.—I do not think so. The season's prices sometimes fluctuate violently.

Q.—We do not want the forecast. We want the actual produce at the end of the year ?

A.—I think it would be better to do that at the end of the year and take the figures and prices from each district and make a rough average of the crop and the yield.

Q.—How are we to get the values of the minor crops where you have no forecast ?

A.—It would be difficult. You have mustard and lentils. Sometimes, the grain crop is mixed up altogether. That is where we have crop figures which are probably inaccurate. In regard to mustard, I think it is grossly over-estimated in parts.

Q.—Supposing we want the total production in a particular village in future, what agency would you employ ?

A.—If you are going to make a complete forecast in that province, it will cost a lot of money. I do not think it will be possible.

Q.—We want to know the various productions. It may be at the end of the year or at the beginning ?

A.—I think the best thing would be to take one village first in a typical tract and make an accurate estimate there. In each case you will have to obtain a village map and do every tiny field, and you know exactly what the total amount has been, and if you have these added up you can get an average which ought to give a very fair idea of the production for that particular district. I think this would be the first preliminary.

Q.—How would you get the villages ?

A.—First of all, in testing in Bengal, there are a number of districts where there are some distinct tracts and you can mix one up with the other. Then you have a red soil tract, you have a black soil tract and you have a *Jhil* tract ; you take them separately. There would be the highlands. First of all, there would be the geological red soil laterite and a soil which has ammonia—that would be two. Then you have the highlands, the lowlands and the *Jhil*. I should take typical villages. The best thing to do would be to put your finger on a map and say I will take this one or that one.

Q.—You would take a map and pick off a number ?

A.—Yes ; anything so long as it would avoid a personal error. I think that would be a reasonable basis to start with. You might find that some modification would be necessary.

Q.—Would you take the actual production of the whole village ?

A.—Yes. I have said the village in detail.

Q.—You would have to employ a number of men ?

A.—Yes, I think the best thing would be to incur that expense.

Q.—Would you work out the total production of the village by merely taking the yield or the whole outturn of the harvest in the whole village ?

A.—I doubt if you can do that. The basis would be to take it by the fields.

Q.—Are they reliable men ?

A.—Yes, they have generally to be reliable men. We find that one or two of our men do not know how to measure an area. They can use the *Luggi* but they cannot use the tape.

Q.—If you had to carry out intensive studies, would you have some more skilled than a chowkidar ?

A.—Yes.

Q.—What type of man would you have ?

A.—Perhaps, the best men would be of the type we call subordinate agricultural servants, men who have been through their agricultural course in the Agricultural College. When they come out they probably would be fit for the undertaking, and you could have experienced men put in charge. I think you would have a far better Superintendent, and you would get a great deal more information. You will have to have a trustworthy man. You may have mistakes but, even if you are wrong, you will know your own procedure in subsequent years.

Q.—Do you think it would be at all feasible for the Agricultural Department to place their men on this work ?

A.—It is all a question of staff. If I had my own way I could do it. We could certainly do a great deal. I do not mean to say that we could undertake to make a complete estimate of the production for Bengal straightaway. I would like to start with one or two districts, and by our experience, as we happen to make mistakes, we will be able to correct them.

Q.—Do you think there will be any trouble on the part of the villagers in estimating the total outturn by measurement ?

A.—Of course, they are suspicious. They might think that a tax is going to be added.

Q.—There are a number of crops in regard to which there are no figures available in Bengal ?

A.—Yes, there are some that are small, but they are increasing.

Q.—They are appreciable in quantity.

A.—Yes, some are fairly large in quantity. The *gingely* is. The *jowar*—you cannot call it anything.

Professor Burnett-Hurst.—Q.—How is it there are no figures for the yield of sugarcane ?

A.—There is a figure forecast, namely, the yield is given at 36 maunds an acre.

Q.—It is not published in the Season and Crop Report.

A.—No, this is a thing I am making a note of.

Q.—I am sorry. I see it is published—sugarcane, but not raw sugar ?

A.—Yes, it is put as *gur* and not sugar.

Q.—Is it possible to prepare estimates of the total value of agricultural products in each village, and what would be the cost ?

A.—I think you would find it very difficult. Men could go to the villages and gradually make an accurate estimate, but it would take probably about two or three years. I think you can get a fairly accurate knowledge in the end of all sort of details, but you may be able to make a fairly reasonable calculation by taking a couple of acres here and there.

Chairman.—*Q.*—Have you ever attempted to estimate the agricultural production yourself ?

A.—No, I cannot say I have. For years, we have been doing what we call district surveys, which gradually become more and more accurate. That is what I am speaking about now. Each agricultural officer in the district had instructions to do an agricultural survey in his particular district, each man going into the state of the crop and gathering details which would help in that way from the agricultural point of view. There may be a very large number of depots of rice and he may be told to see them. It is the same with every other crop. You obtain what you can about the areas, then the values and so on. A complete scheme was not laid down, because it was considered that we had better learn by experience. That was the sort of thing we were meaning to do, but all this has been put back on account of the Retrenchments. A number of suggestions were made, and these are under consideration at the present moment.

Professor Burnett-Hurst.—*Q.*—You happened to mention something about the Fisheries Department being temporarily abolished ?

A.—Yes.

Q.—The fish production is considerable ?

A.—Yes.

Q.—Do you think it would be possible to ascertain the fish production of Bengal—the quality and quantity of fresh-water and sea fish ?

A.—It would be very difficult indeed, because everybody fishes in Eastern Bengal. It would be very difficult to come to an accurate estimate of the fish production. It must be very large indeed but there is a danger of diminution in the supply. There is a deltaic phenomenon going on. The lowland country is gradually filling up. The process that is going on is that the rivers are changing their beds. They leave one piece of highland and then they gradually fill up the whole country. During the time that I was in charge of the Fishery Department—I was there, I think, for something over a year before its abolition—we were doing a fishery survey. The idea was to get some sort of an idea of the fishery resources of Bengal, and among the opinions that we obtained from the Fishery officers was that there was a gradual diminution. One of the most constant remarks was that these *jhils* which 15 or 20 years ago were permanent lakes did not contain many feet of water now. They are dry now and it is only in the rains that there is some water there. Therefore, from the fisheries point of view, there is a probable danger of diminution.

Q.—You were connected with the Fishery Department for about two years. Can you tell me about the statistics of fish traffic to Calcutta ?

A.—It is done through the railways. Each railway is asked to give statistics. The Bengal Nagpur Railway give statistics for the whole of the country down from Chilka lake. The Eastern Bengal Railway bring the fish down from Goalundo and also from Khulna.

Q.—You think these statistics are reliable ?

A.—They ought to be reliable. I do not know how carefully they are compiled, but the railway statistics can be relied upon as being fairly accurate.

Q.—The fish that comes to Calcutta is insignificant compared with the total amount of fish caught in Bengal and Orissa ?

A.—Probably it is. I should think it is. The population is a fish consuming population. In a year like the present one, the *ryots* have been getting high prices for their crops and they have been going in for all sorts of luxuries. I have been told that in parts of the country, boxes of *hilsa* were sent to the addresses of ordinary cultivators, who have done very well with the jute this year.

Q.—Would you suggest that information about fish production might be ascertained by local intensive survey ?

A.—I do not know. You would have to watch the conditions everywhere. I do not think you can make any estimate unless you cover the whole ground. But you may be able to get a rough guess within about 20 per cent. I do not think you can ever hope to get the accurate figures. It is mostly for consumption.

Q.—Fish is caught, but not for the market ?

A.—Oh, yes. The fish would sell in every village, because there are some people who do not fish. A great proportion of the fish must be caught for consumption and not for sale.

Q.—Are there not considerable subsidiary industries such as fish-curing ?

A.—I do not think there is very much fish-curing in Bengal.

Q.—And fish *guano* and manure ?

A.—None.

Q.—What about subsidiary industries such as the manufacture of bangles ?

A.—There is quite a considerable bangle industry in Dacca, but the bangles are made from *chank* shells from Ceylon. There is a moderate, purely local industry near Dacca in regard to fresh-water mussels.

Q.—Is it of any considerable magnitude ?

A.—No. I would not call it a big industry. They make buttons and things.

Q.—What about the manufacture of lime from shells ?

A.—Not very much in this country. There used to be a good deal of lime manufactured from *Kuba* : that was got from the river.

Q.—Is sea fishing considerable round Calcutta ?

A.—There is a considerable consumption of *bekti* and *topsi* and other fish, but I am afraid I have not got any figures. I think we could probably get some figures.

Q.—Do you know how they obtain them ?

A.—No. I would not like to say. There may not be a classification. I do not think I can offer any opinion on that point. The possibilities in regard to sea fisheries are very great, I think.

Chairman.—**Q.**—Supposing, we want to ascertain all the agricultural products in the whole of Bengal, how long would it take to do the final stock taking census, because it has not been done till now ? What staff would they need for it, and what staff should be maintained from year to year for the periodical census ?

A.—Do you mean that the thing should be done accurately, or that it should be based on forecasts ?

Q.—Of course, you cannot get it by accurate measurement, but you can form a fairly shrewd estimate.

A.—Of course, we can make an estimate about a particularly suitable crop, jute for instance, by taking the average values and taking the approximate yields ; the same thing for rice. We can get at the total quantity.

Q.—Make some rough guess.

A.—Yes. We know a lot of centres like Faridpur and Rajshahi and so on.

Q.—You can make an intensive survey and get a percentage ?

A.—We cannot do that immediately. We must get a staff.

Q.—Supposing you had all the staff and the money you required, what time would you take to make a census of the agricultural productions of Bengal ?

A.—We would have to train men.

Q.—Are we to wait till the training is done ?

A.—I do not know whether I could give a rough estimate inside a year or whether it would take three years. We could not give you an estimate inside a year.

Q.—A rough estimate is better than none.

A.—If we had the staff and the money, we could do a lot.

Mr. Kaul.—**Q.**—Have you not got the total area under crops in each village ?

A.—In the settlement areas, of course, there is the total area.

Q.—I am talking about the area under crops.

A.—You can get it from the maps, from the settlement districts ; so much under wheat, so much under mustard and so on. There are vegetables for instance, *bagan* and others. In the average it must be very considerable.

Q.—For the miscellaneous crops, can you not fix some yield or value per acre ?

A.—Yes, by taking typical villages and multiplying.

Q.—Have you made any estimate of crop values per acre ?

A.—Yes, we have done it in experimental places.

Q.—Can you give us any figures per acre ?

A.—Yes. For instance, with regard to jute, it varies tremendously, about a couple of hundred per cent. We averaged it at about 20 maunds an acre for jute. This is, of course, a high average. You can say the average is 16 maunds to an acre, and your values would be anything from 7 to 30. You can say that they would vary to that extent.

Q.—Then you take the average for that ?

A.—That is where the difficulty comes in, unless we are making an actual field-to-field survey. You can get a rough idea of the cultivation and, say, one maund to a *bigha*, which is one-third of an acre. I made some estimates myself. I had to deal especially with fibres in Bengal and it came to two maunds an acre which is very nearly the same thing. So, if you go through a jute tract, you either measure it or calculate it by the height of the jute. If it is 9 feet, it would be 9 maunds ; if it is 8 feet, it would be 6 maunds. The higher it goes up the more rapidly it increases in weight.

Q.—What would be the value per maund ?

A.—Last year, that is 1923-24, the average was just under Rs. 8 per maund, speaking from memory. This year it would be nearer Rs. 15. It would be over Rs. 12 anyhow.

Professor Burnett-Hurst.—Q.—Would it be possible to obtain information about the yield of fruit ?

A.—You can get export fruit, for instance, in Malda, where there are considerable tracts of land under mangoes and it may be possible that you can get the railway figures for the export of mangoes.

Q.—Should intensive studies be made ?

A.—You would have to go and find out. If you want the total production of export fruit, you can find that out.

Q.—It forms a considerable proportion of a man's income ?

A.—Yes, but not the average man. In Eastern Bengal, so much is under water that you have not got many fruit trees. You do, however, get a few pineapples, and you do get *papeeta*.

Q.—Taking the country as a whole, is fruit production considerable ?

A.—Not in these tracts. I would not say that Bengal is a big fruit producing tract. Bihar is a much larger fruit producing tract. I say that, excepting Malda and Baranpore and possibly Rajshahi, I would not say that Bengal is a great fruit producing tract.

Mr. J. A. HUBBACK, I.C.S., Commissioner, Bhagalpur Division, Bihar and Orissa.

Written Statement No. 1.

Question 3 of the Questionnaire.—Yes. For Bihar and Orissa. Mr. Datta's classification is preferable to Sir Edward Gait's, but even that is defective. The classification I suggest is :—

I.—North Bihar (Champaran, Saran, Muzaffarpur, Darbhanga, Purnea with the portions of Monghyr and Bhagalpur that lie north of the Ganges).

N.B.—Darjeeling has little affinity with this area and is part of Bengal.

II.—South Bihar (Shahabad, Patna, Gaya with the portions of Monghyr and Bhagalpur that lie south of the Ganges).

III.—Chota Nagpur (Singhbhum, Manbhum, Ranchi, Hazaribagh and Palamau) with Sambalpur, Santal Parganas and Angul.

IV.—Orissa (Balasore, Cuttack and Puri).

Questions 5 and 6.—I consider the published statistics of agricultural outturn untrustworthy. Even in the Punjab, where I believe the existing machinery is better than elsewhere the estimate of the wheat crop was in 1915 so defective as to mislead seriously the authorities controlling the movement of wheat from India to the United Kingdom. The estimates for Bihar and Orissa up to 1919 were so faulty as to give the Government of India an entirely inaccurate idea of the capacity of that province to feed itself, when rationing of movements of food stuffs became necessary. A revised figure of normal yield of the principal staple, rice, has since been adopted, but even that is not far removed from a guess. The fact is that while the areas under crops are known within reasonable limits, at any rate for the main staples, being derived from cadastral survey figures, modified by intelligent estimates of the seasonal effect on sowings, the estimates of normal yield and the factor of the season are not well based. The normal yield is ultimately based on experimental crop cutting, which has seldom been sufficiently widespread to give trustworthy results, and is vitiated by the introduction of the personal element in selection of fields. The general tendency of these experiments is to over-estimate very gravely. They are seldom spread over the whole harvest season, and consequently miss the low yields of early and very late lands. But their worst faults are that no one ever has an opportunity of discovering what capacity he has for selecting average crops, and that no one can work out how many experiments of a selective character are required to secure a reasonably accurate mean. To obtain the gross yields of the year, the factor of the season has to be applied. In Bihar and Orissa this is obtained from the police, through the Sub-divisional and District Officers and scrutinized by the Director of Agriculture. Though the Director usually makes some allowance for the tendency to underestimate the proportion that the yield of the year bears to the normal yield, it is impossible to say whether the allowance is sufficient or excessive. For the rice crop, which is far the most important part of rural production in Bihar and Orissa, I consider that it would be possible to get a very accurate estimate of the total production of the year at the cost of Rs. 25,000. The method I propose is to

cut a very small area ($\frac{1}{3200}$ of an acre) in a large number of places where harvesting is actually going on. The cutting must be spread in time over the harvesting season, and in space as evenly as practical considerations admit over the rice producing area. The aim is to get a number of purely random samples. From the frequency distributions displayed by a collection of about 1,000 samples in Manbhum, a collection of the same number in Cuttack, and a collection of about 2,000 samples in Santal Parganas, I consider that about 500 samples, if absolutely random, would give a mean correct within one maund per acre in 98 cases out of 100. An absolutely random sampling can hardly be obtained and I know of no analysis which indicates the error arising from departure from such a standard. But it is likely that 1,000 samples taken with the precautions, which are practicable for securing approximately random sampling, would yield at least as accurate a result as that indicated above.

It would be necessary to employ an agency to sample evenly over the whole province, and about 100 men would be required for 2 months. Each would be able to take at least 1,000 samples, and thus the provincial estimate would be based on 100,000 samples. Even granted that the sampling would not be absolutely random, the degree of accuracy of the provincial estimate would be very high, as that varies with the square root of the number of samples. The district estimates would also have a high degree of accuracy and even those for smaller areas such as sub-divisions would be reasonably accurate. The method would get rid of the unsatisfactory system of the normal yield modified by the seasonal factor: except for preliminary forecasts. Further in ten years time the average yield of the province or smaller unit would be known within close limits.

Questions 7 and 8.—The method I have selected above is intended for the rice crop. It might be extended to wheat, though the way in which that is sown along with other crops is an obstacle. It could not be applied to sugarcane or tobacco or the minor crops mentioned in question 7. I can see no way of collecting information for the minor crops which would not involve extra cost, and I suggest that it would be necessary to examine each item in turn to see whether its importance in making up the gross value of the total production is sufficient to justify any cost. It would probably be possible to fix extreme limits within which the value of the yield of each item would lie and then consider how far the selection of one or the other limit would affect the gross value.

Question 9.—I consider the cattle census figure to be fairly trustworthy for large areas. Movements of cattle at different times of the year make them difficult to interpret for some districts. They were compared in 1919-20 with the figures for stocks owned by agriculturists collected in the course of cadastral surveys, and the result of the comparison were as far as I recollect satisfactory.

Question 10.—As to items (a) to (c) the difficulty is in estimating local consumption. It is probable that the bulk of the commodities come to large markets, where statistics could be compiled at comparatively small cost. But in non-Hindu tracts local consumption cannot be ignored. A special enquiry would seem to be necessary in such tracts.

The "production" of game is very difficult to estimate. A certain amount comes into large markets, e.g. duck, quail and other game birds, but the bulk is probably consumed locally. I doubt, however, whether its value is an appreciable part of the national income.

Question 12.—It should not be difficult, by means of detailed enquiries by the Veterinary officers and possibly through the Co-operative Department to obtain figures for the yield of milk per cow and per goat for different areas, which could be applied to the figures for milch animals supplied by the cattle census. It will not be so easy to find out how much of the production is turned into milk products and thus gets an increased value before consumption. Butter and cream are for the most part produced by organized industry, which would be ready to supply figures. *Gurd* (*dahi*) is, however, mainly a cottage industry product, and much is sold close to its source. Statistics would have to be obtained from local “*hâts*” as well as from the railways. *Ghi* is a product of both cottage and organized industry. The Army Department, which turns out large quantities, should be able to say what amount of milk is consumed for a given outturn of *ghi*. Cheese production is very much localized and is unimportant. The consumption of milk on all the products (*b*) to (*f*) would have to be deducted from the total yield to obtain a figure for primary consumption, which will, of course, have a special price. Bacon and ham are like cheese a localized product, though an appreciable part of the population consume the pig in other forms, and I doubt if it is adequately realized by pure economists how much pig breeding contributes to the wealth of the less frequented tracts. Statistics for eggs and poultry will be exceptionally difficult to obtain, and yet these are a very great and increasing source of wealth. I can only suggest detailed survey of villages selected at random, to find out the figures per unit of human population. As far as I know honey and bees wax are unimportant, in most tracts, though of some importance in certain districts, *e.g.* Purnea and Ranchi. A rough estimate might be obtained by enquiries through the district staff at local and central markets, though I have chiefly come across honey being hawked round by the man who collects it.

Questions 18 and 19.—I think that no estimate of production, from which any useful conclusions could be drawn, can possibly ignore fisheries. I know nothing of sea fisheries, but am convinced that fresh water fisheries supply a very considerable part of the annual income. But anything like complete statistics will be exceedingly difficult to obtain. Besides the catch from rivers, *jhils* and tanks, a considerable supply of fish is taken from the fields themselves from the middle of July to the end of October. Nothing but a large number of very careful local enquiries could give complete statistics. For a start a single district or even a smaller unit should be surveyed. It should be noted that while river fishing is mainly a specialized occupation, *jhil*, tank, and field fishing is mostly carried out by the ordinary cultivator. For the two first he has as a rule to pay a rent to the landlord.

Question 40 (a).—Agricultural wages do not vary seriously over the unit of report, which is I think the sub-division or at largest the district. If villages are selected at random in the unit the result will be sufficiently accurate. If the object of the return is to show the variation of wages from year to year there is no objection to reporting for a particular month, provided it is always the same month. If, however, the return is used for arriving at the *income* of agricultural labourers there is considerable objection (*vide* my reply to question 43).

(*b*) I think the Bombay classification into field labour and ordinary labour is sound.

(c) The objection is valid (*vide* my reply to question 48).

(d) *Vide* reply to question 43.

(e) *Vide* reply to question 48.

(f) This is presumably due to working out averages. Daily wages should be shown to the nearest anna.

Question 41.—The present agency is, I think, the ordinary district staff. So long as the enquiries are conducted or at any rate closely supervised by responsible officers this is the best agency.

Question 42.—A uniform classification is desirable, so long as the province can get sanction for reasonable modifications to suit local conditions.

Question 43.—Daily rates of wages are of little use in estimating the economic condition of the agricultural labourer. He is notoriously liable to unemployment, and in many parts of this province supplements his earning by emigration to industrial centres or travels long distances to obtain agricultural employment (*e.g.* the Bengal rice harvest draws a good deal of labour from north Bihar). I think it would be possible for an enquiring officer to find out what a labourer had earned in the last three months, and if his enquiries were spread over the year he would thus get a good idea of the annual earnings. No doubt emigration would complicate the enquiry.

Questions 44 and 45.—Extra payments at harvest should be added to the annual wages. No all-India standard of conversion can be fixed. It would probably be as well to fix standards for each large economic tract (*vide* question 3) and direct the enquiring officers to follow them. These might be based on the average prices of the previous five years, though there will be tendency to exaggerate the wage, if the wholesale prices of large markets are taken, since these include cost of collection and transport.

Question 46.—I cannot see any reason for classifying wage returns according to irrigation facilities.

Question 47.—The dwelling that the ordinary agricultural labourer gets for nothing, when he does get it for nothing, is worth very little. In many parts of the province the ordinary raiyat gets his house site for nothing and pays very little for the material. Food, tobacco and clothing should be valued and added to the wage. I see no great difficulty in valuing these. I have never come across the provision of bedding.

Question 48.—I can see no advantage in giving the median instead of the mean, which is usually given, except that it is somewhat easier to calculate and is a round figure.

But it is far better to give the frequency distribution (which includes giving the mode) for each unit of report. The frequency distribution at once indicates whether divergence from the mode is common or serious, and gives some assurance that the returns have been intelligently compiled.

Question 49.—Yes. The number of agricultural labourers in each unit of report can be easily got from the census figure.

Question 50.—No distinction between wages for different harvests in Bihar and Orissa is necessary, as far as I know.

Question 51.—Yes.

I should like to add here that the returns of agricultural wages should show both the daily wages given from different operations and the total annual wages of the agricultural labourers.

Question 62.—The estimates of income hitherto produced are little better than guesses. Even the most important item, the value of the rice crop, is untrustworthy, because the figure for yield is so uncertain and there is, as far as I can discover, no logical basis for the price figure selected. I have already discussed the first point. As to the second by far the greatest part of the rice crop is either consumed by the producer or saved for seed. It never gets outside the village. The rest is taken by the raiyat himself or not infrequently by a petty trader to the local market. Some of it is sold there for local consumption, but much of it goes on to the big markets in the towns. There again some is consumed locally but some is put on rail for export to other districts or even out of India. At each stage after the first the price includes remuneration for services. Unless the proportions consumed at each stage are ascertained, and these will vary with the size of the crop, I cannot see how a really sound figure for price can be reached. Apart from this defect there is little doubt that most of the figures used by the authors of these estimates are based on insufficient or undigested data, and important sources of income are overlooked. I can suggest no improvement except the collection of more trustworthy data and more careful consideration of them.

Question 67.—It seems fairly obvious that if comparisons are to be made with income in other countries where householders have to pay for their fuel the value of the fuel should be included in the income, even when it is obtained as it usually is for nothing. Similarly income in industrial countries is required to cover house rent, whereas the ordinary agriculturist builds most of his own house and pays little for materials.

Question 68.—I think an estimate of the wealth of India on the existing data would be even more untrustworthy than the estimates of income, and to secure adequate data would be a very difficult task indeed.

Question 70 (a).—I suggest that the average sale prices of all the interests in agricultural land taken together merely indicate the true economic rent of the land, and probably do not reach that amount. There remains the value of the land as the principal source, which, taken with the labour and capital applied by the cultivator, give him a return sufficient for a subsistence standard of living. I have not had time to think this out, but it seems to me worth examining.

It must be remembered that landlords as a rule take a percentage on the purchase price; in Orissa this is fixed by statute at a maximum of 25 per cent. It has to be considered whether this amount is included in or excluded from the price as recorded.

(b) Land revenue bears no certain relation to land values in Bihar and Orissa.

(c) I do not see how local enquiries would get at the facts. They are mostly available in the Registration Offices.

Question 71.—Buildings in villages have from time to time been valued for land acquisition purposes. The estimates are probably too high, but in default of any other method might be accepted.

Question 73.—I think a detailed enquiry to discover the amount of private wealth would be appallingly expensive, grossly inquisitive and politically dangerous. Consequently I do not advise it. My view is that any attempt to compute the national wealth is not worth undertaking because it could not be done with reasonable accuracy except at inordinate cost, and would be of very little use if it were done.

Question 87.—The division of the survey into two sections appears sound, but I would omit the census of wealth.

Questions 94, 95 and 96.—If the economic survey is worth doing, it is worth repeating. I doubt if it would be necessary to do it more than once every ten years or possibly every twenty years. I think the data mentioned in question 96 should be collected annually, seeing that they will fluctuate greatly and are the most important indications of economic condition.

Questions 101 and 102.—If a large scale economic survey is considered advisable, it is essential that it be centrally controlled. A Director of Statistics for each province would be required. He would have to work through the District Officers just as the Census Superintendent does, though he would probably require a staff of officers directly under him to carry out special enquiries and to keep in touch.

Question 103.—For urban statistics the town and city should be the unit. For rural statistics in Bihar and Orissa the best unit would be the revenue thana or such other unit as may have been adopted for the preparation of the statistics compiled during survey-settlement operations. The village should be treated, for the purposes of certain enquiries, as a sample of the thana.

Questions 105 and 106.—The province would probably be very chary of accepting the charge, unless and until the advantages of the economic survey were made manifest. Apparently the Legislative Assembly has accepted the need, but the councils have not as far as I know. It is impossible to suggest an apportionment of the total cost until the advantages of the survey are defined.

Questions 107 and 108.—In Bihar and Orissa both Municipalities and District Boards are largely subsidized by Government to fulfil their essential functions. I do not think that either class of local authority would be willing or able to contribute to the cost of an economic survey of the kind contemplated.

Written Statement No. 2.

The scheme, which the Committee appear to frame for dealing with rural areas, is an intensive economic survey of a number of villages taken as far as possible at random over the tract under survey. As I have already suggested in my previous note, Bihar and Orissa should be treated as composed of four economic tracts, *viz.* :—

North Bihar including all the area north of the Ganges.

South Bihar including the districts of Shahabad, Patna, Gaya and the southern portions of Monghyr and Bhagalpur.

Chota Nagpur including the five districts of that Division as well as Sambalpur, Angul and Santal Parganas.

Orissa including the coast districts of Cuttaek, Balasore and Puri.

2. I think the organization required is a Superintendent of Economic Survey, five Assistant Superintendents, *viz.*, four for the economic tracts and one personal assistant, and a number of investigators. I do not think any staff will be required for the districts, except the investigators and possibly an extra clerk in each Collectorate. The District Officer himself and the Sub-divisional Officers will be expected to take an interest in it and give the Superintendent and his assistants the benefit of their advice and authority. The Superintendent will also no doubt avail himself of the advice of the Divisional Commissioners, as well as other officers in a position to help him, such as the Directors of Land Records and Surveys, of Agriculture, of the Civil Veterinary Department, and of Industries and the Registrar of Co-operative Societies. The advice of Professors of Economics will, of course, be taken besides.

3. The duties and status of the investigators require to be described. Each should spend a full year in the sub-tract under his enquiry, in order to get a complete view of the agricultural cycle. He will, I consider, require about two months training before he starts his work in earnest. I would begin by grouping the investigators for training purposes under the Assistant Superintendents for a month at convenient centres, where the Superintendent could easily inspect them. For the second month they should work in small parties subject to inspection by the Assistant Superintendents. It would probably be most convenient if they put in this training during February and March when the main business of the year, the paddy harvest, will be practically completed and they will learn something of the very numerous rabi crops. In April they will move out singly to their sub-tracts and start their real work, which is to obtain as complete a survey as possible of the production of the sample villages, the income, cost of living and indebtedness of the inhabitants, and the wages of the labourers. I think that each investigator should have four groups of villages to observe, each group being roughly a circle of radius two to three miles. He should halt for about a fortnight at a time in each group, and then move on to the next. He will thus see each group at some part of the period occupied by the principal agricultural operations, *i.e.* bhadai cultivation, bhadai harvest and paddy cultivation, paddy harvest, rabi cultivation and rabi harvest. I think that about three investigators per district, each making an intensive survey of about 100 square miles, would be sufficient, or as a rule one for each sub-division. Possibly extra men will be required for some of the very large Sadr Sub-divisions. There are 62 sub-divisions and I estimate on the basis of 70 investigators. These will cover 7,000 square miles out of the total area of the province, 111,809 square miles, which of course includes urban areas.

4. I consider, however, that it would be a great economy in the long run to test the plan of campaign thoroughly before it is put into operation. For this purpose I would employ the Assistant Superintendents including the officer selected as personal assistant for six months before the investigators are appointed, in carrying out a test enquiry on the lines proposed for the real enquiry. This would familiarize them and the Superintendents with the difficulties and pitfalls of the enquiry and, what is at least equally important, give a chance for explaining to the people, what it is all about. Good officers will smooth the way in both respects for the somewhat raw staff of investigators, whom it will be necessary to employ. I suggest the

six months from August to January, which will cover the most important part of the agricultural year in this province. For this period the Assistant Superintendents will be given charges of the same kind as the investigators will ultimately get, and from the experience gained it will be possible to decide precisely how large those charges should be. At this stage it will not be necessary to select the charges by a random method. They may be fixed to suit convenience of supervision by the Superintendent, but should be representative of all the economic tracts of the province. The Superintendent himself will require a month or so to organize at the beginning and six months to write his report at the end. The Assistant Superintendents will be required for three months at the end to compile and write their reports.

5. I have not indicated in what manner the help of non-official agencies can be utilized. I suggest advisory committees in each district, which it would be the business of the Superintendent and Assistant Superintendents to consult. Possibly, as the work proceeds, some voluntary workers would be found to supplement the enquiries of the investigators, either on the same lines in additional sub-tracts, or on special branches of the enquiry, *e.g.* river fisheries..

6. I have said in paragraph 2 that there should be an Assistant Superintendent for each economic tract. But these tracts will not yield an equal amount of work, and it will probably be necessary to detach certain districts from one tract and attach them to another for the purpose of the Assistant Superintendent's control. Taking them in order, I think the tracts will require the following number of investigators:—

North Bihar	..	..	..	18
South Bihar	..	..	..	16
Chota Nagpur	..	..	..	25
Orissa	..	..	..	8
Reserve	..	..	..	4

70

South Bihar includes three of the largest towns in the province, and though Patna town might be given to the personal assistant, the remaining charge will be sufficiently large. To equalize Chota Nagpur and Orissa, I would transfer to the latter Angul, Singhbhum, and Sambalpur, which will probably require 6 investigators. Even so Chota Nagpur will be a heavy charge, and Orissa a light one. But the Assistant Superintendent of the latter will have to make a study of sea fisheries and of Jamshedpur.

7. Though the groups of villages for investigation should be selected at random, I suggest that a little latitude might be allowed, so as to secure that they are reasonably accessible. Thus a centre, which would by random selection fall several miles off a road, might be replaced by one on the nearest road.

8. On the basis sketched above I have prepared a rough estimate of cost, which I hope may prove useful to the Committee. The Superintendent and Assistant Superintendents will also be responsible for the economic survey of urban and industrial areas, for which a separate estimate of the cost of the subordinate staff and establishment will be required. Something will have to be added for leave and pension charges of officers on deputation. The figure for contingencies is a guess, but I think it ought to cover forms and printing charges.

Programme.

July 1926		Preliminary arrangements.
August	}	Test survey by Assistant Superintendents.
September		
October		
November		
December		
January 1927		
February	}	Training of investigators.
March		
April 1927	}	Survey by investigators.
May		
June		
July		
August		
September		
October		
November		
December		
January 1928		
February		
March		
April 1928	}	Compilation of material.
May		
June		
July 1928	}	Writing of the report.
August		
September		

MONTHLY RATE.

	Rs.	Rs.
<i>Pay of officers—</i>		
One Superintendent for 27 months	2,200	59,400
Five Assistant Superintendents for 23 months	400	46,000
Seventy Investigators for 14 months	125	1,22,500
<i>Pay of establishment—</i>		
Superintendent's office—		
Four clerks for 27 months	450	13,500
Five peons	50	
Assistant Superintendent's office—		
Ten clerks for 23 months	500	13,800
Ten peons	100	
70 Investigator's peons for 14 months	700	9,800
Extra staff for compilation, say ten clerks for three months.	400	1,200
<i>Allowance—</i>		
Travelling allowance		25,000
Grain compensation allowance		5,000
<i>Contingencies</i>		50,000
	Total ..	3,46,200

Written Statement No. 3.

(*Note on crop cutting experiments for rice yield in Bihar and Orissa.*)

(Submitted to the Government of Bihar and Orissa.)

The need for reasonably accurate statistics of the human population of a country has long been recognized throughout the civilized world. The idea that statistics of the production that supports that population are of well-nigh equal importance is rapidly gaining general recognition. It is, therefore, perhaps superfluous to argue in its favour, but it may be useful to indicate what object a well founded estimate of the yield of rice can fulfil.

2. In the first place as rice occupies a little more than half of the cultivated area in the province of Bihar and Orissa, employs 4/5ths total of the population for six months of the year and feeds the greater part of it throughout the year, its supreme importance in any survey of production can scarcely be denied. It probably provides at least one half of the rural contribution to the "provincial dividend", and that contribution is still vastly more important than that of the urban and industrial workers. Hence if a survey of production is desirable, good statistics of rice yield are essential.

3. Apart from the uses to which those who direct or influence the policy of the State may put the statistics of production, there is no doubt that traders want information of crops as they come forward. Good information enables them to operate with more confidence and not only saves them from alternating between prosperity and financial disaster but greatly benefits the public by stabilizing prices. For this purpose it is not enough to have a reasonably accurate estimate for the whole province or similar area, but knowledge of the conditions of the district or even smaller unit is very valuable. Lastly reasonably accurate knowledge of the real normal yields of important crops even for fairly large tracts would give guidance to courts who are required to estimate the value of produce for the decision of rent suits, and commutation of produce rent and to settle fair cash rents. Hitherto lack of such knowledge has frequently resulted in considerable injustice.

4. The statistics of area under the rice crop are already reasonably accurate. They are founded ultimately on the figure obtained from detailed measurement in a particular year on the ground. No doubt new land has been brought under rice in some places, the year of survey may have been a particularly favourable or unfavourable one, or to a limited extent other crops may have replaced rice. But allowance is made for these factors year by year, and there is probably no very large error. It is in the figure for yield that there is room for bad mistakes. This has been fixed under the advice of the Director of Agriculture at a definite figure as normal, and is varied year by year by applying for each district a percentage, indicating how far the crops of the year falls below or rises above the normal. Now in the first place it is exceedingly probable that the normal rice yields differs materially between districts. But, apart from that, there is no machinery for fixing with any reasonable accuracy the percentage of the year. All that is done at present is for the local police officers to make a guess, at which in succession the Sub-divisional Officer, the District Officer and the Director of Agriculture guess again. When it is considered that the percentage depends ultimately on the effect of the weather on very various soils, cultivated with varying degrees of skill and enterprise, planted with different kinds of rice, protected by irrigation of greater or less efficiency or completely unprotected, liable to or immune from crop pests and finally harvested over a period of nearly three months, it becomes apparent that the guessing ability of the officers concerned has to be remarkable. Unfortunately, too, not one of them has the least chance of finding out whether his guess was fairly right or wildly wrong. Hence the existing statistics of rice production are, I believe, the result of applying to a fairly accurate figure of area, an arbitrary standard of normal yield, and a pure guess of the condition of the year. I am convinced that by an expenditure of a sum of money, that is not excessive, in view of the importance of the matter, the last two could be replaced by a scientific estimate, in which the possibilities of error can be gauged. Incidentally the scheme I propose though it would not completely solve the problems of the courts to which I have referred would go a great way to do so.

5. I return to the point of the normal yield. This is based on a number of crop cutting experiments made at different times in different places, and it is to the defects of these experiments, with the consequent uncertainty of the conclusions based on them, that I now wish to draw attention.

6. The commonest method of estimating yield apart from pure guessing from the appearance of the field at harvest time, is that described in the standard account of the danabandi (appraisal) system of rent payment. It consists of the tenant cutting a small area where the crop is thinnest and the landlord where the crop is heaviest, mixing the two together and taking the result as a fair sample. To secure accurate results this presupposes that the true mean lies midway between the highest and lowest sample, a condition which is very rarely found in practice. The results so obtained are almost always far too high, *i.e.*, unfair to the tenant. In an acre field of rice bearing a mean yield of 15 maunds, it might well be possible to find an area of 1-20th of an acre yielding 40 maunds an acre, but it would be obviously impossible to find another bearing minus 10 maunds an acre. Experimenting over a large tract would yield even more unfair results. The method is not far different from attempting to estimate the average income of a population by taking half the sum of the incomes of the poorest man and the richest man in it.

7. A second method is that at present prescribed. An officer of some standing visits the tract, of whose yield he is required to form an estimate, and selects a fairly large area, usually 1/10 of an acre as containing an average crop. This he cuts and carries and in due course threshes and weighs. If he has time he makes two or more experiments, but it is obvious that he cannot usually manage to make a large number of such experiments. There are two main objections to this method:—the first is that it depends entirely for its accuracy on the ability of the officer to select. He has to make his selection from a large number of fields growing different varieties at different points of maturity. It is very easy to be misled as to yield by the strength of straw in the case of rice, heavy straw being by no means always correlated with heavy yield. Again it is difficult to give proper weight to the fields which will give little or no yield at all, and even in a normal year such fields are by no means rare. These factors make accurate selection very difficult. The second objection is even more important, *viz.*, that there is no possible way of estimating the probability of the result of such selections being reasonably accurate. The method is comparable to estimating the average income of the population of a town by watching the streets for a few days and then picking out a man, who looked to be in average circumstances, and discovering what his income is.

8. The only way in which a satisfactory estimate can be formed is by proper random sampling, since that not only gets rid of the personal element of the experiments, but also makes it possible to say definitely what is the probability that the result of a given number of samples will be within a given range from the true mean. To put this in definite language, it should be possible to find out how many samples will be required to secure that the odds are at least 50 to 1 on the mean of the samples being within one maund of the true mean.

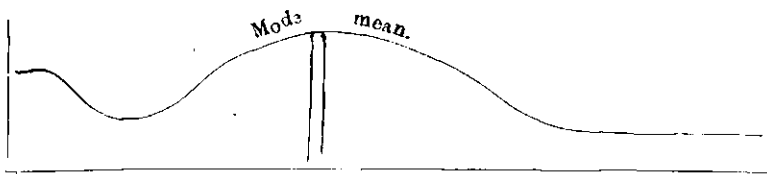
9. That is the problem I have attempted to solve. The first step is to secure sufficient random samples of the rice crop of a tract to supply a fair indication of the distribution of the "population" (*i.e.*, the way in which an infinite number of samples of the rice crop would arrange themselves). I obtained in 1923 one set of samples, numbering 400, taken at random in the Godda sub-division of the Santal Parganas district under the supervision of the Settlement Officer, Mr. Davies. An officer was deputed between the 4th December and the 22nd December, 1923. He travelled

from village to village through the area, which comprised about 100 square miles, and wherever he found, on the day of his visit, crops being cut he took a sample of the area enclosed in an equilateral triangle of area equal to $1/3200$ of an acre. The bundle of paddy so obtained was threshed out then and there and the grain yield put in a parcel, which was subsequently dried for 3 or 4 days and weighed. The results were taken to the nearest half maund per acre.

10. The year was a particularly bad one, and further, for the complete testing of the winter rice crop, the period should have been extended for about a week at either end. Still the results give, I believe, a reasonably fair indication of the distribution of the winter rice crop in a bad year, though of course they do not cover the autumn rice crop, which had been reaped between the 15th October and the 30th November. The experimenting officer notes for each sample whether it was taken from a field classed as first class or classed as second class, but for the purposes of this note I have lumped the results together.

The results ranged from 0 to $44\frac{1}{2}$ maunds per acre. Taking a class interval of $2\frac{1}{2}$ maunds* per acre, the frequency came out as shown in the table annexed.

11. The mean is 10.67 maunds. It will be seen that 239 of the samples lie below that mean and only 161 above it. Further the frequency curve does not follow the "normal curve of error" at all being something like this



The standard deviation is 8.06 maunds. It is evident that the frequency distribution is far too skew to permit of off-hand deductions, which are strictly true only for symmetrical distribution known as "the normal curve of error".

12. As far as I can discover the analysis required for the determination of the frequency distribution of the means of a distribution which is represented by a skew curve of this kind has up to now defeated the mathematicians. I have therefore attempted to obtain data of the results of grouping the original samples by tens. I drew by hazard a group of 40 numbers between 1 and 400. (The method was to draw one of the numbers 0 to 9 from a bag and put them down in groups of three rejecting all groups which read as a number greater than 400). Starting from each of the numbers so obtained I wrote down in a row the value of the samples bearing the starting number, that number *plus* one, that number *plus* two etc., up to 55 values, continuing where necessary, from number 400 to number 1, 2 etc. I thus obtained 55 columns containing 40 numbers each. Summing these columns ten at a time I obtained 220 sums of ten original samples. If

* The advantage of this class interval is that it brings nearly all results within a definite interval, the only exception being $8\frac{1}{2}$, 17, $25\frac{1}{2}$, 34 and $42\frac{1}{2}$.

The original 400 samples give a fair representation of the way in which the full "population" is distributed, this method should give a fair representation of the way in which the sums of ten random samples would be distributed, and consequently of the way in which the means of such sums would be distributed.

It may be objected that I was merely using the same material over and over again and could not deduce anything about the means of ten from it. I contend, however, that what I have done is to multiply the original number of samples indefinitely retaining the same frequency distribution as that given in paragraph 7 and resample on that "population". There is only one primary assumption, viz., that the frequency distribution in paragraph 7 represents sufficiently accurately the "population".

13. Taking these means I found the following frequency distribution.

5-6	3	..	..	..	..	..	11-12	29
6-7	16	..	..	..	-	..	12-13	28
7-8	21	..	..	..	..	..	13-14	21
8-9	25	..	..	..	..	..	14-15	8
9-10	34	..	..	..	..	..	15-16	6
10-11	27	..	..	..	..	..	16-17	1
							17-18	1

It is evident that the dispersion is much less than in the previous distribution and there is comparatively little skewness. The standard deviation about the mean (which is 10.49) is 2.47. Now it is true of all frequency distribution (even when they are skew) that the standard deviation of the mean varies inversely as the square root of the number of samples. Theoretically then the standard deviation of means of groups of tens, taken from a distribution with a standard deviation of 8, should be 2.53. Adopting this value instead of that obtained by calculation, then, if 490 samples were grouped together instead of only 10, and a sufficient number of groups were taken to obtain a new frequency distribution, the standard deviation of the means of those groups would be $\frac{1}{7}$ of the standard deviation of the means of the groups of 10. Thus the standard deviation would be .36 maunds.

14. From the manner in which the frequency distribution rapidly approaches to the normal frequency distribution commonly known as the "curve of error", when groups of 10 are taken, it may be asserted with considerable confidence that the distribution of the means of 490 samples would be very nearly normal, and that therefore the use of the probability integral tables is justified. These give it that the probability of any value lying within 2.77 times the standard deviation is .9972. This is the same as saying that in 997 cases out of 1000 the mean of 490 samples of a "population" distributed like the Godda figures will lie within one maund

of the true mean. The odds that 256 samples will give a mean within one maund of the true mean are about 50 to 1 on.

15. Through the agency of Messrs. Davies, Mansfield and Gokhale I obtained in 1924 three new sets of samples, taken in the same manner, in Godda thana of the Santal Parganas, Jajpur thana of Cuttack, and Purulia thana of Manbhum. The tracts are separated by distances of 120 to 150 miles; Jajpur is a flat plain with a good deal of canal irrigation, Purulia undulating country with little artificial irrigation, and Godda has some feature of both. The only difference in method, from that adopted in 1923, was that the experimenting officers took four samples, instead of one only, from each place where crops were being cut. I shall note on this point later. The growing season was a favourable one in Purulia and Godda and an average one in Jajpur, but in all tracts the later rice suffered somewhat from untimely rain at the beginning of November.

16. The frequency distributions obtained are shown in the annexed table together with that obtained for Godda in 1923. In Jajpur there are no differences between rice lands sufficiently marked to admit of classification. In Godda and Purulia the first class land is the low land receiving the drainage of the slopes and is ordinarily safe for a crop of some kind, the third class is the high land which grows early varieties of paddy and suffers badly in a year of short rainfall and specially when the rains stop prematurely. The second class is intermediate. The classification is necessarily approximate only.

17. All distributions of 1924, which were taken in fair to good conditions, are distinctly more regular than the Godda 1923 distribution. There is no lump at the beginning and generally speaking the frequency increases rapidly towards the point of the mode (which is close to the mean) and falls more slowly after that point is passed. If a much larger number of samples could have been obtained I feel sure that the regular rise to a point near the mean and a regular fall thereafter would have been observed, since the result for all classes in Godda is distinctly more regular than the result of taking the first cuttings in each field.

18. Another interesting feature is that in all cases there is a comparatively level frequency near the maximum, i.e., the frequency changes somewhat slowly for about three class intervals on either side of the highest frequency. This seems to me to emphasise the difficulty of "selecting" an average crop, even for a man who is not likely to be misled by the mere appearance of the crop.

19. But the most important feature of these distributions is the small limits within which their standard deviations lie. On these results, it can, I think, be safely said that the standard deviation of the yield of random samples of the rice harvest of any tract in Bihar is most unlikely to exceed 10 maunds or to be less than 4 maunds. What this means I shall discuss later.

20. On the same principle, though with a slightly different technique from that described in paragraph 12 of this note, I have obtained 240

means of samples taken ten at a time from the Purulia record. Their frequency distribution is as follows :—

Class interval in maunds.	Frequency.	Class interval in maunds.	Frequency.
10—11	1	17—18	27
11—12	3	18—19	22
12—13	18	19—20	11
13—14	37	20—21	6
14—15	44	21—22	0
15—16	40	22—23	1
16—17	40	....	..
Total .. ..	....	....	256

The distribution is evidently not very far from a normal frequency distribution.

The distribution of 120 means of 20 samples is still more regular thus—

Class interval in maunds.	Frequency.	Class interval in maunds.	Frequency.
12—13	4	16—17	25
13—14	10	17—18	9
14—15	26	18—19	7
15—16	39	....	..
Total .. ..	..	....	120

Mean is 15.55 maunds. Standard deviation is 1.37 maunds.

21. I think this goes far to show that the original frequency distributions of the rice yields are not sufficiently skew or otherwise irregular as to prevent the means of say 100 samples from following closely a normal frequency curve. Consequently, when considering the means of 100 or more samples, it is safe to assume that the chance of the mean of a particular group of samples falling within a definite range of the true mean of the whole "population" is that given by the tables based on the normal frequency curve.

22. From these tables, it can be found, given a standard deviation and the number of samples taken, what is the probability of the mean of any group of any group of samples lying within a given range of the true mean. For example in a frequency distribution having a standard deviation of 10 maunds, the mean of 400 samples will lie within 1 maund of the true mean 977 times out of 1,000, and the mean of 625 samples 994 times out of 1,000. As I have said above in paragraph 19 it seems very unlikely that the frequency distribution of the yield of rice in any tract in the province has a standard deviation of more than 10 maunds, and thus 400 samples, if properly distributed in time and space over the period of the harvest and the extent of the tract will give what an ordinary man

would say was a safe average within one maund. With a standard deviation of 6 maunds (which is larger than that of some of the observed frequency distributions) 144 samples will give the same result. I think, therefore, for practical purposes 400 samples properly taken will give a mean accurate to one maund in every part of Bihar and Orissa, unless the harvest is an abnormally bad one, and where the crop is a fairly level one 150 samples can be trusted to give a satisfactory result.

23. It may, however, be urged that it is unknown how far the standard deviation I have obtained from a comparatively small number of samples are likely to differ from the true standard deviation of an infinite number of samples. This is a matter of somewhat difficult analysis, and the application of the formula obtained by mathematicians is arithmetically laborious. I have, however, applied the formulae to the case of "Godda, 1924, all classes," and find that the true standard deviation cannot be more than 7 maunds or less than 4.2 maunds, unless I have been unlucky enough to strike the one case in several thousands.

24. This brings me to the practical question of an organization for sampling the rice crop in the province. If nothing but the average yield for the province were required it would probably be enough to take 1,000 samples throughout the province. But it would be very difficult to arrange a sampling that was well distributed in time and space. Besides the yield for each district if not for each sub-division is sufficiently important to justify an arrangement to obtain it. If an officer is put in for each sub-division he will be able to take at least 1,500 samples in the three months of harvest. He should be able to take more. This will give sufficient samples to determine the yield for the sub-division within one maund in the vast majority of cases, and would give fairly reliable results for even smaller units.

25. I propose that each officer be given about 15 centres to work from, grouped in threes about a main centre. He will be able to sample for a radius of 2 miles round them walking out north and returning north east the first day, east and south east the second day, south and south west the third day and west and north west the fourth day. Each day he will have to cover about $5\frac{1}{2}$ miles. The main centres would be from 10 to 15 miles apart. Allowing for moves and days of rest, he should be able to get round to the main centres three times, taking the main centre the first time and the subsidiary centres the second and third time. The area covered by the sampling would be about 190 square miles, which would be enough for the ordinary sub-division of 800 to 1,600 square miles, if the centres were chosen with reasonable care. In some parts of the province the rice crop is less important than in others, and it may be possible to sample with sufficient accuracy for those districts through a single officer for two or even three sub-divisions, if reliance is not to be placed on the results for the sub-divisions.

26. The agency I would suggest is the young man, who has recently taken his degree, and is seeking Government service. Such men are in the great majority of cases a success in the more difficult and responsible post of Settlement kanungo as well as in other jobs on which they have recently been employed, for example, the preparation of electoral rolls. I think they could be obtained for Rs. 100 a month, including travelling allowance. They would require two peons each. I doubt if a tent would be necessary in all places though possibly it will be in some. The apparatus required

is my triangle costing about Rs. 4 and a number of cloth bags for holding the samples till they are dry costing perhaps as much again. As an outside figure I should put Rs. 30,000 as the cost of the scheme, and I believe it could be carried out sufficiently with Rs. 20,000. I suggest that as a beginning Rs. 3,000 should be spent next autumn in testing the scheme in the six sub-divisions of the Santal Parganas, and that another Rs. 1,500 be sanctioned for the three sub-divisions of Cuttaek district. Though in both cases I consider that the time has come for placing the organization under the District Officers it will be no small advantage to have the settlement staff on the spot to help with technical advice and some supervision.

27. There are two other points on which I should remark. The yield obtained is that of the harvested area. If it is applied to survey figures or to figures of area ultimately based on survey figures it exaggerates the gross yield, because no account is taken of the "ails" (ridges between rice plots) which are as a rule included in the survey areas. The allowance of this apparently varies between 10 per cent. and 2 per cent. and depends in the slope of the ground and the class of land to a considerable extent. Attempts have been made to arrive at a safe figure in the Santal Parganas, Maubhum and Orissa Settlements. I have not seen the final results, but I think there is still room for further investigation before a safe figure can be fixed for each district. The second point is that the harvested area is almost always below the sown and planted area, which is invariably recorded in full as "Dhanhar" in the cadastral survey figures. In some parts of the province the district figure includes in "Dhanhar" fields ordinarily used for growing rice, but left fallow in the year of survey. The error caused in the estimate of the gross yield by taking this figure will vary according to the season and may be substituted. It should be examined further whether there is any scientific method of calculating the relation between harvested area and the full "Dhanhar" area, including temporary fallow, are sown or planted and grazed down and area flooded out.

28. The actual compilation of frequency table from the registers of the experiments is quite straightforward though rather tedious. A computer of the Survey office could learn to do it in a week, and could probably produce at least two frequency tables with the mean and standard deviation worked out in a day. The cost of this part of the work would thus be small, say Rs. 100 at most.

29. For the benefit of readers who have not studied statistical theory, I note below explanations of the technical terms used in this note.

Mean.—The result of summing the values of all samples or groups of samples and dividing by the number of the samples or groups.

Mode.—The point of greatest frequency.

Population.—The subject matter of the enquiry viewed statistically as made up of a very large number of samples with varying values. (In this case the yield of the rice crop of a definite tract of country).

Distribution.—The manner in which the values of the samples are numerically arranged.

Frequency.—The number of samples having a given value or a value between given limits (within a given class interval).

Standard Deviation.—A measure of dispersion or "scatter" about a particular value, e.g., the mean. It is the sum of the squares of the difference from the particular value multiplied by the frequency at each point divided by the sum of the frequencies.

Frequency distributions of rice yields.

CLASS INTERVALS IN MAUNDS.	SANTAL PARGANAS GODDA THANA 1923 ALL CLASSES.	SANTAL PARGANAS GODDA THANA, 1924-25.				MANBHUM, PURULIA THANA, 1924-25.					Cuttack Jajpur thana, 1924-25.
		1st class lands.	2nd class lands.	3rd class lands.	All classes.	1st cut-ting.	1st class lands.	2nd class lands.	3rd class lands.	All.	
0--2½	55	12	1	26	39	8	0	1	2	3	28
2½--4½	24	28	24	48	100	28	1	2	5	8	68
4½--6½	44	69	49	82	200	43	6	8	40	54	102
6½--8½	45	128	53	90	271	71	17	11	74	102	124
8½--10½	71	126	86	47	259	82	18	17	84	119	115
10½--12½	27	175	78	30	283	62	18	18	100	136	124
12½--14½	18	223	59	60	342	79	17	31	78	126	83
14½--17	21	192	47	23	262	67	22	28	77	127	87
17--19½	19	173	27	4	204	57	31	19	70	120	62
19½--21½	22	118	12	4	134	49	13	27	33	73	39
21½--23½	15	51	9	3	63	17	18	16	22	56	24
23½--25½	14	16	6	3	25	4	16	11	13	40	28
25½--27½	12	4	3	..	7	1	10	8	9	27	21
27½--29½	4	6	6	..	12	3	10	5	4	19	17
29½--31½	1	2	2	..	4	1	7	8	2	17	8
31½--34	4	6	..	..	6	3	4	3	..	7	4
34--36½	2	..	..	..	..	..	..	..	..	..	2
36½--38½	0	..	..	..	..	..	1	4	..	6	2
38½--40½	1	..	..	..	..	..	..	..	..	..	1
40½--42½	0	..	..	..	..	..	..	..	..	..	1
42½--44½	1	..	..	..	..	..	..	1	..	1	..
44½--46½	..	..	..	..	..	..	..	..	..	..	..
46½--48½	..	..	..	..	..	..	1	..	..	1	..
Total number in experiments.	400	1,329	462	420	2,211	575	210	216	613	1,041	930
Mean in maunds.	10.67	13.83	11.74	8.56	12.70	12.63	17.76	16.37	13.40	15.59	12.25
Standard deviation in mds.	8.06	5.30	5.38	4.71	5.60	5.68	7.58	7.40	5.36	6.59	7.13
Period of experiment.	4th Dec. to 22nd Dec.	14th Nov. to 13th Janv.	10th Nov. to 27th Dec.	10th Nov. to 19th Dec.	10th Nov. to 13th Jan.	10th Nov. to 13th Jan.	29th Nov. to 22nd Dec.	17th Nov. to 19th Dec.	16th Nov. to 13th Dec.	16th Nov. to 22nd Dec.	17th Dec. to 2nd Jan.

Oral evidence, the 14th April, 1925.

Chairman.—*Q.*—Do you think we could do something in the way of an economic survey in a number of years ?

A.—I think it is going to be a pretty expensive business.

Q.—How expensive ? The last census cost Rs. 15 per thousand. The population in Bihar and Orissa is 30 millions ?

A.—It will be roughly about Rs. 5 lakhs. I think it might be done inside that figure, if you cut out the census of wealth.

Q.—That we might cut out. We might not take individual canvass. We might take the census of production which is absolutely necessary.

A.—It is desirable. The question of finance is at the back of everything.

Q.—But money brings money. It will be an investment in the long run.

A.—I reckon, in our province, you require to spend Rs. 25,000 a year for a good many years to get a proper census of rice. Of course, rice is the most important commodity there.

Q.—We want to have a stock-taking census.

A.—I think for certain things you have to take an actual survey. There are certain things that vary from year to year, especially the rice crops.

Q.—May we know what opportunities you have for studying the economic conditions of the people ?

A.—I have had nine years experience as Settlement Officer. I have just had two years as Director of Land Records and Surveys and I was Revenue Secretary to the Government of Bihar and Orissa for three years.

Q.—What branch of practical economics have you interested yourself in ?

A.—Mainly the agricultural side—rural economics.

Q.—You have statistics of agriculture in Bihar and Orissa as in other provinces, but I believe for the zemindary tracts the figures are given by chowkidars and others.

A.—The figures for an area are ultimately based on the cadastrally surveyed areas, and modifications are made from year to year by district officers on the basis of the chowkidari reports.

Q.—For our purpose, we shall want the value of agricultural crops—what has to be done in order to get the total value of the agricultural crops—the total production in your province, the money value, and what additional staff would be required ; what additional information are we required to gather and through what agency, if we go along the line of least resistance ?

A.—Although I think the figures for the area under crops are reasonably accurate, I do not think the yield is accurate and I have suggested a method, as regards the rice crop which is the most important crop, of obtaining a much more accurate estimate of the yield.

Q.—Do they not use the system of crop-cutting experiments ?

A.—That is the system I am pressing on the Government now. I was allowed to make experiments of this nature when I was Director of Land Records in three different parts of the province and I have not yet been able to put up my report to the Government. I shall be able to do so in three months.

Q.—Have you made an estimate ?

A.—Yes. My method will give a good estimate of the outturn of rice only, but I emphasise that rice is at least 60 per cent. of the gross rural income.

Q.—What is the total area of rice ?

A.—I am afraid I cannot say off-hand, but it is very, very considerable.

Q.—We have heard such a lot about your traingular system. I would like to hear something about it from you.

A.—It merely consists of this : You have three light wooden rods and a small solid wooden block which comes on it two pairs of guides set at an angle of 60 degrees. The block is put on the ground and two of the rods pushed out along the guides through the paddy stalks, till checked by stops which prevent them going too far. The third rod is pushed out from the end of one of the two to the end of the other. That gives you a triangle on the ground. You then cut everything inside that. You thresh it then and there and you collect the produce and put it up in a bundle separate from everything else. The method I have adopted hitherto is to instruct the man who is employed on this work to cut wherever he finds the cultivators cutting.

Q.—What is the size of the triangle ?

A.—The area is $1\frac{1}{3200}$ of an acre. The advantage of that size is that one tola per triangle is equivalent to one maund per acre.

Mr. Kaul.—Q.—Are the dimensions of the triangle $3\frac{1}{2}$ feet by $3\frac{1}{2}$ feet ?

A.—No. $67\frac{1}{4}$ inches is the length of the side. It has the advantage of being carried about very easily. Nobody objects to the amount you take because it averages about a quarter of a seer or less.

Q.—But you do not generally take the grain out immediately you cut the rice crop. You let it dry.

A.—You do not weigh it till it is dry. You leave it a few days till it is dry and that gives you the weight fairly correctly. If you are harvesting where they are harvesting, presumably the crop is ready for harvesting.

Q.—You know that some of it is green when it is cut and that it is threshed afterwards ?

A.—Yes, it is possible.

Q.—That is generally what is done in my part of the country.

A.—I do not think the Bihar rayats leave it very long after they have cut it.

Q.—In the Punjab they keep it two or three days to a week. Then I see you do a sort of random selection.

A.—That is the idea—to get as near a random selection as possible. My faith in the ability of an officer to select an average plot is absolutely nil.

Prof. Burnett-Hurst.—Q.—What system of random selection do you adopt ?

A.—You put an officer on during the whole of the paddy harvest, and he has to experiment in as many fields as possible where he actually finds harvesting going on. He can do more experiments when the harvest is at its height, because he has not to walk so far from field to field.

Q.—Could that triangular method be employed for other crops as well ?

A.—I do not see why it should not be applied to wheat. But in Bihar that is frequently mixed with barley, and it would be difficult.

Q.—You think it will be difficult with mixed crops ?

A.—The proportion in which they are mixed would cause a difficulty. I would not condemn it off-hand. I have never tried it.

Mr. Kaul.—Q.—How long have you been trying the triangle system ?

A.—I have been trying it for ten years as an alternative to cutting large areas and, as a matter of fact, I am convinced that a fair number of officers cutting a large number of experiments, gives a better result than cutting a few large experiments. At the same time, I have been trying the actual random method for two years.

Q.—Were the results higher or lower ? A similar system was in force in Majlas, Punjab, three karrums by three karrums. The officer used to go to the spot and have it cut and threshed and the whole thing used to be done in half a day. It was found that the result was towards exaggerating the yield because it did not take into account the odds and ends of the field. If you take a whole field it does not go like that. A good crop at one end does not average the whole field. If a man goes and takes a marla here and a marla there the results are generally above the average. So it has been abandoned.

A.—My principle is that in each field in which you experiment, you do four experiments. There is always a line along which the reapers are cutting. You get the middle of that line, then you walk three steps into the crop and make the experiment. Then you go to the opposite field boundary and do another experiment and you go to the north and south one and do the same thing. I think that is always satisfactory. But you have always to make an allowance for the areas consumed by the field boundaries, and that is worked out separately.

Q.—Do you work it out ?

A.—Yes, it is being done.

Q.—You reduce the margin of error by increasing the number of experiments and by other factors ?

A.—You reduce the possibility of error by working on something approaching a scientific method.

Chairman.—*Q.*—Have you made any estimate of the value of the crops per acre for the whole province or any particular village, or any particular field which is inspected ?

A.—Do you mean the yield with the price on it—the money value ? I have frequently had to do it.

Q.—What is it ? Would you give us the minimum and the maximum ?

A.—It varies tremendously.

Q.—Roughly ?

A.—Are you speaking of the harvest price or the market price ?

Q.—The price at the nearest market less the cost of transport ?

A.—Taking harvest prices at a close market in Bihar and Orissa, there are few fields that yield more than Rs. 60 an acre.

Q.—What would be the average ?

A.—I should think on the whole in Bihar and Orissa, rice fields give something like 12 maunds an acre, and taking it at Rs. 2 a maund, what the cultivator gets from it without carting it is about Rs. 25 an acre.

Q.—How much of Bihar and Orissa is irrigated ? Is not most of it rain-fed ?

A.—A great deal of it is rain-fed. I am talking rather at random. I think one-twentieth is effectively irrigated and about one-fifth is irrigated to some extent.

Q.—Have you ever estimated the total agricultural production of a village or province ?

A.—I estimated the total production of the Shahabad district when I was there.

Q.—What did it come to per head ?

A.—Roughly, Rs. 26 per head. That was in 1913.

Q.—Was the money value higher ?

A.—Yes, you might add 25 per cent.

Q.—That includes agricultural products of all kinds ?

A.—Strictly agricultural.

Q.—Have you made any intensive study of village agricultural production ?

A.—No.

Q.—We have to study the economic condition of the country, and an economic survey is proposed. The first thing to do would be to have a stock-taking census just to examine the whole position, go into a detailed investigation and bring the whole thing up to date. Then there will be some yearly accounting. A certain staff would have to be employed to keep the figures up to date. Probably in periods of from five to six years you may have periodical census. Assuming this has to be done, how would you obtain agricultural values for a stock-taking census ? How would you proceed in a village ? What additional staff would you need to collect

that information ? In a village you have a lot of information. You have the principal productions and their values.

A.—I still maintain that you do not possess information about the yields.

Q.—Is it not given ?

A.—It is given, but it is absolutely valueless.

Q.—Generally, in all economic surveys, they are rough guesses. Ours may be very rough, but it will be nearer the truth as you go on experimenting from year to year. What additional staff would be needed in a district in order to make the information a little more accurate ?

A.—For purely agricultural products I do not think you want any other staff if you accept the figures accepted hitherto. You might put on an officer for three months.

Q.—For purely agricultural products is there no need for extra staff ?

A.—Unless you want to have them accurate.

Q.—Accuracy is out of the question. The degree of inaccuracy will have to be decided.

A.—The degree of inaccuracy in the wealth may very well be 50 per cent.

Q.—That is rather wide. We cannot afford to have the figures inaccurate to that extent.

A.—I would not count upon that.

Mr. Kaul.—Q.—I think 50 per cent.—it is a rather pessimistic view.

A.—I am thinking of a very prominent case—that of a distinguished officer who estimated that first class paddy land was capable of producing, year in and year out, 40 to 45 maunds per acre. We have experimented in the same place and doubt very much whether it produced 20.

Q.—Well a particular field may give 40 ?

A.—This particular officer stated in his official capacity that he thought it yielded 40 to 45 on the average over a large tract.

Q.—That was an opinion ?

A.—All the statistics you have are merely opinions.

Q.—Average from opinions ?

A.—But they are opinions.

Chairman.—Q.—Assuming you have a free hand to have an alternative system, what would you suggest ?

A.—I suggest the method I have tried to get adopted.

Q.—How many experiments would you make in a whole district ?

A.—I think it comes to 5,800 experiments in the district.

Q.—That is for rice crops only ?

A.—Yes.

Q.—Which is the next important crop ?

A.—In Bihar and Orissa I think it lies between wheat and sugar. The sugar area is comparatively small but the value is high.

Q.—You do not make any experiments—any calculation from year to year of the value of the crops—except for your own amusement ?

A.—When a settlement is going on, it is usual for the Settlement Officer to calculate what the value is.

Q.—As regards the minor crops, is there any means of collecting information through the same agency as we have stated ?

A.—You have to accept the rough estimate.

Q.—Supposing some more rules are made for the chowkidars and they are trained and given lessons in their work, would the standard of the statistics be much higher ?

A.—I do not think you can train a man to average crops.

Q.—But he will consult the people in the village who know these things ; and one of his duties will be to go round and collect information just as a man goes round a village to sell his goods ?

A.—Yes. There are always two parties in the village with opposite views as to what the crop will be. The landlords and the rayats will report differently because their interests differ.

Q.—Would there be objections on the part of people to give correct information as to the value of the crops ?

A.—I do not think the rayat would give very correct information. He never has.

Q.—But he has general ideas ?

A.—Yes. But if he has the least idea that it is in any way connected with taxation, he will do what he has done in the past. So will the other man.

Q.—Is there any means of collecting unemployment statistics ? Is there any unemployment in your part at all ?

A.—Rural unemployment ?

Q.—Yes.

A.—No, unless there is scarcity.

Q.—What is the extent of unemployment, for instance, in the slack season when there is not much agricultural work.

A.—I never made any detailed enquiry into that.

Q.—How is the information to be obtained ? Through whom should we get it ? As to the condition of the province, what agency would you employ to collect information regarding unemployment ?

A.—In Bihar and Orissa, I think the co-operative departments would be quite useful for getting information from their members.

Q.—But they are such a small body ?

A.—Yes, but they have their local banks.

Q.—You have discussed several questions connected with the economic conditions of the people. What test would you apply to determine the economic condition of the rural population—that is, as regards the income,

production, cost of living, wages and indebtedness ? Which of these tests would you apply and in what order ? In the present condition of the country, what test in your opinion, would be practicable ?

A.—You are aiming at a classification of people in good condition, fairly good condition, etc.

Q.—That means the distribution of wealth and income. What is the average wealth in a town or village and how is it to be estimated for a year ? Of course, wealth would be for a particular time and income would be for a year.

A.—The test would be how far they can feed and clothe themselves at a reasonable rate—how far their income covers the cost of decent living.

Q.—First of all, we ought to know what they are earning before we find out if their earning power is sufficient.

A.—We have to estimate the income and compare it against the cost of living.

Q.—In a village, we should want a thorough economic survey.

A.—Certainly, as regards income, cost of living, indebtedness, and, I think, if you want to pick out certain villages, possibly wealth.

Q.—You do not suggest every village but random villages ?

A.—Yes. I think Major Jack's method is as good as anything I have struck.

Q.—Then, to do this, you will have a pretty long list of questions to put to the cultivator. Would he be able to give you that information ?

A.—The man who collected that information would have to use his experience to ascertain how far the agriculturist was telling him the truth. I do not say that the agriculturist in all cases would try to conceal the truth but in most cases he would not be able to express it. I think that is the characteristic of all economic enquiries. The lower you go the more difficult your enquiry becomes.

Q.—By what agency would you collect all this information as to income, wealth, indebtedness and cost of living ? What agency would you employ if you go along the line of least resistance and least expenditure ? You may assume that there is plenty of money. Again, what staff would you employ ?

A.—I think really intelligent young men who have just passed out of college, with some economic training, and to supervise them a Government officer who has some experience of this kind of enquiry. He might be either a revenue officer or, in some cases, he might be an educational officer. It all depends upon the man you can get.

Q.—You say "I think a detailed enquiry to discover the amount of private wealth would be appallingly expensive, grossly inquisitive and politically dangerous. Consequently I do not advise it". Is it not desirable that other people should know their income ; how the property is accumulated, how they are living and what their indebtedness is ?

A.—Yes.

Q.—Is it not an enquiry to collect information and find out the economic trend of a village or district ?

A.—Yes.

Q.—As regards the expression “ Politically dangerous ”, I now recognise that an enquiry would be inoffensive. Government have considered it necessary and the Legislative Assembly have pressed it. I am only talking of the census of wealth. Our neighbours in other countries are making estimates of India’s wealth. They are doing it in America.

A.—House to house ?

Q.—No. Have you any objection to making estimates of wealth ?

A.—I think it would be a very innocent amusement.

Q.—I like your expression “ Grossly inquisitive ”.

A.—That is what Sir Edward Baker said of the settlement and survey proceedings.

Q.—But other countries delight in it and spend much money on it. In Australia they have house-to-house enquiries.

A.—They demand returns by law. There are legal proceedings laid down for it.

Q.—They prepare a statement of the distribution of wealth ?

A.—If you went round and asked the people the value of the ornaments which their women were wearing, they would resent it.

Q.—Possibly an enquiry into wealth can be made when the next periodical survey comes round ?

A.—Yes.

Q.—You say “ If the economic survey is worth doing, it is worth repeating. I doubt if it would be necessary to do it more than once every ten years or possibly every twenty years. I think the data mentioned in question 96 should be collected annually, seeing that they will fluctuate greatly and are the most important indications of economic conditions ”. Agricultural stock-taking is done every five years in most Dominions—Canada and Australia and the United States of America. Of course, the conditions are different. In England, there is very little agriculture. In the United States of America they have it every year. Would you not recommend an annual survey in this country where there is a very large population ?

A.—I think the country cannot afford the cost. I said that for certain things there ought to be an annual survey but for the rest ten years is quite sufficient.

Q.—What staff would you employ to collect the village statistics—those you approved of—for instance, cost of living, indebtedness, income and wealth. In the villages you ought to have a certain staff. Then there ought to be a census officer for the headquarters of that district. What staff would you have in the village ? We are very serious on the point. We have no basis to go by and we are seeking information from the provinces as to what kind of staff will be necessary.

A.—It would be very difficult to say unless you knew what they have to do.

Q.—They have to collect information from house to house.

A.—You want to know what the number of the subordinate staff required and the cost involved will be. If I may say off-hand, a Director

of Statistics for the province and five Assistant Directors in the year of the survey.

Q.—Perhaps a Superintendent will be required ?

A.—Yes. Five Assistant Superintendents of Statistics.

Q.—For how many districts ?

A.—For the whole province. There are twenty-one districts including Angul.

Q.—Is the population of each district about a million ?

A.—About a million and a half.

Q.—How many divisions are there ?

A.—Five. If I may correct that, I would make four groups. Four assistants would be enough.

Q.—Apart from the assistants would there be some representative at every taluk ?

A.—One of the ordinary Revenue staff of the district would do the work.

Q.—The necessary subordinate staff would be available ?

A.—Yes. We may have to employ an extra clerk or two. If you took the pay of the clerks and multiplied it by two, you would get the contingent expenses—travelling allowances, etc.

Q.—There is the question of making other local enquiries. Would you separate the two or would you combine them under one agency ?

A.—I think it is too much for one man to conduct the intensive study. They should also report with the material they have available.

Q.—The Revenue Department will furnish such material ?

A.—Yes in consultation with the Revenue people.

Q.—Do you attach any value to the idea that in each locality the most important people should come together and conduct the survey ? Would the information be useful ?

A.—I think it would be very useful. I think the Assistant Superintendent of Statistics of a division would get into touch with the local people interested in the survey and encourage them in every way possible.

Prof. Burnett-Hurst.—*Q.*—Do you now obtain the returns of the areas under the major crops ?

A.—Yes.

Q.—And for the minor crops I suppose you secure collective figures ?

A.—Certainly ; minor crops are grouped together in the Cadastral Survey figures.

Q.—For instance, you show ten acres under rice, five under wheat, and so on for the other food crops ?

A.—Yes. And other miscellaneous crops.

Q.—So that, if we accept the area figures as fairly accurate, we can apply some sort of value to the crops per year ?

LIIIEEC

A.—Yes.

Q.—It should be possible for you to ascertain annually for the provinces, what is the approximate value of the miscellaneous crops.

A.—Yes.

Q.—I think you have already worked out the total and you can form an idea as to the value to be attached to the total figures. What I mean is that it would not be an insuperable difficulty to arrive at an estimate of the value if we accept the figures of yield to be accurate.

A.—No.

Q.—Referring to dairy and farm products you state "Bacon and ham are, like cheese, a localised product, though an appreciable part of the population consume the pig in other forms, and I doubt if it is adequately realised by pure economists how much pig breeding contributes to the wealth of the less frequented tracts". Do they breed pigs on a very large scale in Bihar?

A.—I was thinking of Chota Nagpur and the Sonthal Parganas. Practically every Sonthal has a pig sty.

Q.—Do they not derive an income from it?

A.—They consume the pig. It goes against their cost of living.

Q.—We have been told that pigs are so rare in India that it is unnecessary to take account of them but if there are certain tracts in which there is pig breeding on a large scale, it would be possible to confine our enquiry regarding the value of pigs to those tracts.

A.—Yes. I have emphasised Chota Nagpur and the Sonthal Parganas, and in most places in Bihar you get Musahars and people of that kind who breed pigs for their consumption. You can hardly go to a part of the province where you will not find a place where they keep pigs. If you take an intensive study for a Sonthal village, you will get one pig per human being in the village.

Q.—Do you think it is sufficiently important to be taken in that way?

A.—Yes.

Q.—Then, as regards honey and bees-wax, you say they are quite unimportant. Perhaps there are certain tracts where honey is produced in fairly large quantities?

A.—It might be enquired into.

Q.—Perhaps it would be a good thing to confine the suggested enquiry to those tracts where it is produced on a large scale?

A.—Or neglected.

Mr. Kaul.—Q.—In answer to question 46 you say, "I cannot see any reason for classifying wage returns according to irrigation facilities". I presume you know that in irrigated tracts agricultural labour is more highly paid than in unirrigated tracts?

A.—I have never investigated the matter. It has never been brought to my notice. I was a Settlement officer for 3 districts where irrigation was distinctly important and I never came across it.

Q.—Then in reply to question 51 you say, “ I should like to add here that the returns of agricultural wages should show both the daily wages given for different operations and the total annual wages of the agricultural labourers ”. Do you mean to say that we should find out separately the wages paid for such operations as winnowing, reaping, etc ?

A.—I think for the main operations it is well to keep the figures which can be compared, say, one period of five years against another period of five years.

Q.—What is the sort of work you are thinking of ?

A.—I am thinking of ploughing, reaping and thatching. You have your past figures and it is some indication of the rise in money wages.

Prof. Burnett-Hurst.—*Q.*—In your reply to the Chairman you mentioned that under the head of intensive enquiry you would question people as to their income, cost of living and wealth ?

A.—I said “ possibly wealth ”.

Q.—You are not in favour of an enquiry as to wealth ? What is the third item ?

A.—Production, income, cost of living, indebtedness was one.

Q.—You still maintain the opinion that you expressed in your written answer that it is inadvisable to ascertain individual wealth ?

A.—Yes.

Q.—As regards income, are you of opinion that each household should be visited ?

Chairman.—*Q.*—In the intensive study ?

A.—Yes.

Prof. Burnett-Hurst.—*Q.*—Not every village ?

A.—No.

Q.—What proportion of villages ?

A.—It is difficult to give an answer because it depends entirely upon what variation you find. Obviously, if the variation is very small from village to village

Q.—You are only able to ascertain the variation after enquiry ?

A.—Therefore it is necessary to make a preliminary survey.

Q.—A preliminary survey of what proportion of villages ?

A.—A preliminary survey of a small tract, five per cent. I think.

Q.—There are 85,000 villages.

A.—I mean a preliminary survey of five per cent. in a small tract.

Q.—You would select a tract ?

A.—A small tract so that you would be able to cut it down later on.

Q.—Having selected a small tract it would give you information relating to that tract alone ?

A.—Yes. Perhaps I ought to explain what I mean by a tract. I mean a *thana*, a police station jurisdiction. I should have my four

divisions in Bihar and Orissa, select a *thana* in each of them and take possibly ten per cent. of the villages.

Q.—How would you select that *thana* ?

A.—The scientific way would be to take it at random.

Q.—That is to say, make an alphabetical list of *thanas* and select at random any four of them.

A.—Yes.

Q.—Roughly how many *thanas* throughout the province would you select for the preliminary survey—merely for the purpose of finding out ultimately what percentage of villages you would have to take ?

A.—One in each division would be sufficient. There are about four hundred *thanas* in Bihar and Orissa.

Q.—How many villages go to a *thana* ?

A.—I should put it at 150 to 200 villages to a *thana*.

Q.—Then you would take not more than ten villages ?

A.—Yes. It will give you, if it is well done, the number you have to do. I am prepared to do twenty.

Q.—That is to say, after you have selected the village, you have to make it the subject of intensive study and visit each household. Your staff is to consist of graduates in economics. What would you pay them ?

A.—If they are not willing to come for nothing, I would pay them Rs. 100 a month including travelling allowances and everything else.

Mr. Koul.—Q.—Would you get a graduate in economics to take it up for Rs. 100 ?

Prof. Burnett-Hurst.—Q.—If he is to be of any value would you not have to pay him more—if he is a research student in a university ?

A.—If he is a research student.

Q.—Any man with a knowledge of general economics would do ?

A.—Yes.

Q.—Would he have the confidence of the village if he went to the village and asked them about family income ?

A.—He would have to be introduced to them by the district staff.

Q.—You would have to use an official agency to introduce him ?

A.—Yes. I have found no difficulty except in one place. They thought the man mad.

Q.—That is all right as regards crop-cutting information, but when it comes to asking a man about his income it is quite another matter. If you leave wealth aside and if you ask for information regarding income, knowing the cultivator as you do, are you not of opinion that he would resent any enquiry ?

A.—As I said, the man would have to be certificated. It would be necessary to have somebody at the back of him.

Q.—Suppose you send a student as investigator and he asks the people their income. What period should the information cover ?

A.—You mean information given by the ordinary agriculturist ?

Q.—Yes.

A.—I think the ordinary agriculturist could give the figures for a year.

Q.—You think that if you asked a rayat for a figure for a year, it would be of any value ?

A.—It would have to be checked.

Q.—Would it not be better to get a trained staff to stay in a village and make an intensive study, watch carefully the habits of the people, and really obtain the actual facts rather than attempt to get facts and figures which would be of less utility ?

A.—I think I agree.

Q.—And if these intensive studies are to be of any value should they not be conducted by a really well-trained staff ?

A.—I do not see how you can train your staff except by making them try to do it. It is no use training them in a college.

Q.—I do not suggest that. They can be taken out of college and shown the work.

A.—That ought to be a part of the college work. I think Prof. Hamilton is doing it.

Q.—It is done in other Universities besides Patna ?

A.—I think so.

Q.—Now, you mentioned that you would associate the subordinate revenue officials with the graduate in his enquiry.

Mr. Kaul.—Q.—Place them under his control ? What was your idea ?

A.—I think these would work under the Assistant Superintendents.

Q.—You referred to Major Jack's method. You regard that as the best available ?

A.—It is the best I have seen so far.

Q.—It is not an intensive study but deals with a district as a whole.

A.—Surely he based it on collection. Village by village.

Q.—He did not publish statistics for individual villages ?

A.—No.

Q.—Would you favour the publication of statistics for individual villages ? Do you prefer the intensive study ?

A.—I should publish the results. In an economic enquiry the way you arrive at your figures is the test. If you merely state your figures, nobody can contest them.

Q.—You prefer intensive village studies ? Do you know of any instances in which intensive studies of the nature you have in mind have been carried out in any other country ?

A.—I am afraid I have never had an opportunity of studying it.

Mr. Kaul.—Q.—Would you send the investigator into a village for a year or a shorter period of time ?

pastoral products cannot be ignored. Would you also make that the subject of intensive study ?

A.—There is meat and things of that kind.

Q.—Meat, skins, tallow, etc.

A.—I think it would be a possible way of getting it.

Q.—Would you say from your knowledge of the cultivator in Bihar that he consumes a considerable quantity of milk and *ghi* ?

A.—Yes.

Q.—Because a certain witness from Bihar happened to state that very little milk and *ghi* is consumed by the people. The Chanakya Society of Patna College has stated that the consumption is very considerable.

A.—I think the Chanakya Society is right.

Q.—Do you think their figures are reliable ?

A.—I have never studied them.

Q.—You do not think it is possible to obtain anything like complete statistics in regard to fish ?

A.—I think the intensive village study would be the only way. I think you will find that the variation from tract to tract and from *thana* to *thana* would be very considerable. I want to emphasise that fish is a very important source of production.

Q.—In your answer to question No. 47 dealing with the value of supplementals you say ? “The dwelling that the ordinary agricultural labourer gets for nothing, when he does get it for nothing, is worth very little”. Is it not very necessary to assign some value to the dwelling ? Here the conditions are different compared with those of other countries where the conditions are different ?

A.—I think you will have to do that.

Q.—Do you think it is possible to draw comparisons of any value between the agricultural conditions of one country and those of another where the conditions are different ?

A.—I do not think it will lead to much.

Q.—It is merely academic and will be of no value ?

A.—I think the value would be small.

Q.—Would not differences in price levels in the two countries be one of the factors which should be taken into consideration in making comparisons ; are there not many other factors ?

A.—Yes.

Q.—Then you have certain other factors. There is free fuel, which you get in Indian villages and which you do not obtain in England, where you have to pay for fuel ?

A.—Yes.

Q.—Do you regard the cow-dung industry as an important one ?

A.—You mean cow-dung actually brought to the market and sold as fuel ? The production of cow-dung is a very important industry.

Q.—Is it not one of India's greatest cottage industries ?

A.—Yes, I think you are right in saying so.

Mr. Kaul.—Q.—The greatest ?

A.—I do not say it is the greatest but it is one of the greatest.

Chairman.—Q.—One of the most ruinous also ?

A.—Yes.

Prof. Burnett-Hurst.—Q.—We are not discussing that aspect. It is outside our sphere to consider the question whether it should be used as manure or burnt as fuel.

A.—They burn it before they put it into the soil.

Q.—They put in the ashes ?

Chairman.—Q.—Is it due to prejudice ?

A.—No. They say it is better. They say the ashes do the work quicker.

Prof. Burnett-Hurst.—Q.—How would you ascertain the income of a minor who works in a factory part of the year and then goes to his village ?

A.—You rope him in in your intensive study.

Q.—Where ?

A.—In his village.

Q.—Would you favour an intensive study of persons engaged in selected industries such as coal mining ?

A.—Yes. Do not take me as an authority on this question, I am talking generally.

Q.—A witness who is acquainted with the conditions of your province expressed the opinion that it would be best to take different types of individuals in different occupations and study their conditions rather than make a general study of rural occupations.

A.—I am treating agriculture as one of the selected industries and the only way to do it is to take selected villages in the agricultural tracts.

Q.—But this witness took different kinds of agriculture ?

A.—You mean sub-divided the agriculturists from that point of view ?

Q.—Would you favour that or would you take the village as your unit ?

A.—I think the village is the safest unit.

Q.—It is suggested that the enquiry should extend not only to the cultivators but also to other classes of people. Do you think it is possible to ascertain the income of the *banias*, grain dealers, merchants and so on ?

A.—I think your best plan is to rely on the income-tax figures.

Q.—Do you think that the income-tax figures are reliable ?

A.—No, but they are nearly as reliable as you can get.

Q.—Do you think the authorities would place their figures at the disposal of persons engaged in the economic enquiry ?

A.—At present they are prohibited by law from doing so. You would have to have the law changed. The same question arose as regards elections and a way was found of obviating it.

Chairman.—*Q.*—They need not mention names ?

A.—No.

Prof. Burnett-Hurst.—*Q.*—It would be extremely difficult because under the Income Tax Act the information given is strictly confidential and if the law were changed the people would regard that as a breach of privilege.

A.—There might be a way of doing it. I do not know.

Q.—It is certainly a possible hitch. Would you use compulsory powers for getting information from the ordinary cultivator ?

A.—No. I do not think I would.

Q.—You would depend solely on voluntary replies ?

A.—Yes.

Q.—Do you favour a census of industrial production ? Have you studied that question ?

A.—I really do not know enough of industry.

LIEUT.-COL. W. C. ROSS, M.B., D.P.H., F.C.S., I.M.S., Director of
Public Health, Bihar and Orissa.

Written statement.

General.

Questions 1—4 of the Questionnaire.—I do not consider that the reference is sufficiently wide. Wealth is of two sorts—potential and real. The economic state of any country will depend upon the approximation of these two quantities or in other words to the extent upon which use is made of the potentialities of wealth which are latent in the soil and in the climate of the country. Such use is intimately associated with and founded upon the facilities which exist for the creation and use of credit. Nothing is included in the reference either as to potential wealth or as to facilities for the creation and use of credit upon which the real wealth of any country largely depends. In my opinion the omission of these two factors is of fundamental importance and would greatly affect the value of any conclusions arrived at from the consideration merely of wealth as represented by the produce of labour and the rates of wages.

The statistical data with regard to staple crops and the more important minerals and manufactures are probably sufficient and as reliable as can be expected. The accumulation of statistical information with regard to minor industries, *e.g.*, "the supply of honey" or "fishing for edible oysters" would appear to be largely a waste of time and money, as the cost of acquiring such information would be vastly greater than its importance. I would suggest that the main factor in the situation is agriculture and that the grasp and interpretation of the available knowledge would throw more light on the problem at issue, than the accumulation of a vast additional mass of statistics of very minor importance.

Question 62.—The estimates of national income have risen 'pari passu' with the rising prices of commodities because they have presumably been based chiefly if not wholly, upon estimates of produce and production in terms of value. It is most probable that these estimates are all too low because they were not made upon a sufficiently wide basis.

Question 63.—An estimation of average income based chiefly on production, which omits all consideration of credit facilities and of the rapidity of circulation of currency and credit can only be fictitious and misleading. Any estimate based on income tax returns would be quite unreliable. In short I would suggest that it is first necessary to define what is meant by wealth in this connection, and that the wealth of the country should be calculated as a whole and the subsequent average income calculated from that factor and the population factor. I consider that an income census would be quite useless, as practically no one would give an accurate return, and the vast majority of the population are quite incapable of answering the questions in such a census correctly.

Questions 87—93.—I do not consider that a census on the lines suggested can be carried out with any success except with regard to that portion in which information is obtained through Government agencies or from the heads of firms, etc. A census which is neither correct nor reliable has no value and I see little prospect of such a census proving to be worth the great cost which would be entailed if any attempt were made to carry it out successfully on a large scale. I would suggest on the other hand that the information which is already available is great and comprehensive and that an intelligent and patient study of the available information and an intelligent interpretation of the facts and conditions would take less time, would cost less and would prove more satisfactory.

—————

Oral evidence, the 14th April, 1925.

Chairman.—*Q.*—You say here that wealth is of two sorts, potential and real ?

A.—Yes.

Q.—We want an estimate of the wealth of the country just as is obtained in the United States of America, Canada or Australia. They do not go in for potential wealth. The real wealth is estimated on a certain basis.

A.—May I explain what I mean ? I should like to say two things. First of all, this note was written in a hurry. What I intended by this note was that if you compare a country such as the United States of America or Australia with India, you have totally different conditions. You have Banks and credit facilities in those countries which you do not have here, and, therefore, I say that the economic status of the two countries is not exactly comparable.

Q.—In what way can we make any comparison ?

A.—Do you want to study the economic wealth of the country or the individual wealth of the country ?

Q.—Both. The methods are different, but both are required. You know that as a matter of fact other countries prepare estimates for India. They are misleading, and it is necessary to prepare an estimate for ourselves.

A.—Those other countries do not make estimates of the wealth of the individual so much as estimates of the wealth of the country.

Q.—You see, the papers are full of information regarding the wealth of England. It is 20,000 million or something like that. It may be more or less. It is the fashion now to study economic conditions through the agency of wealth and income. Wealth and income are the two tests of the material well-being of a country. Rough estimates are prepared of the wealth of countries. They are used for the purpose of comparing one country with another. They compare estimates, and in that way compare themselves with other countries. What test would you apply to Indian conditions ?

A.—Do you want this estimate to be expressed in rupees or in sterling ?

Q.—At the current rates of exchange of gold and silver—in the currency of the country.

A.—I do not agree at all with what Mr. Hubback says about taking sample villages. I have been twenty years in Bihar and Orissa. The job I had first was a touring one and I found every *thana* was different. In one you have valuable crops, and in another you have cheap crops of no great value; hence the values of your *thanas* are very different. I think it is a very much simpler proposal to deal with India as a whole.

Q.—Do you think it would be of value to the people if the wealth of a village is ascertained and recorded? In other countries they have actually done it. If it is possible to do it in India, would it be an advantage.

A.—In the same way as all knowledge is an advantage. I do not think the average population is sufficiently educated to make use of it. I do not think they are sufficiently educated to answer questions. If you try to obtain information of economic value from them, they would not be able to give it. They would perhaps give returns, but these would be of very doubtful value.

Q.—But the persons who are there will interpret it to them?

A.—You need a very intelligent staff.

Q.—We want a census of the minor crops also.

A.—It depends on the crops. It might not be worth the trouble of getting data regarding some of them, while it might in the case of others.

Q.—You say, “The estimates of national income have risen *pari passu* with the rising prices of commodities because they have presumably been based chiefly, if not wholly, upon estimates of produce and production in terms of value. It is most probable that these estimates are all too low because they were not made upon a sufficiently wide basis”. What makes you think that they are not too high?

A.—Because I have noticed that in most of the statements of values, they take the value at the wrong end. The real value of the rice crop in India for purposes of comparison with other countries is the export value. The value in the village is what the grower gets. Then you have the transport and other charges, and the total value to India is the export value.

Q.—You say “An estimate of the average income based chiefly on production which omits all consideration of credit facilities and of the rapidity of circulation of currency and credit can only be fictitious and misleading. I consider that an income census would be quite useless, as practically no one would give an accurate return, and the vast majority of the people are quite incapable of answering the questions in such a census correctly”. Suppose you had a committee of intelligent men of the village associated in this enquiry, would it not enable them to obtain a correct estimate of the income?

A.—In Bihar I think they are not so advanced as in Bengal. The number of villages in which you would procure intelligent men would not be too numerous. I would like to make one statement about income-tax, just as an illustration. I have said that the income-tax

figures are not reliable. When they posted an income-tax officer to a certain district the income-tax was raised by Rs. 30 lakhs in one area of twenty square miles. So that does not show that the income-tax figures were very reliable before that.

Q.—Is not the number of people who pay income-tax very small ?

A.—Yes.

Professor Burnett-Hurst.—*Q.*—Is not partly due to evasions ?

A.—That has probably something to do with it, I think.

Chairman.—*Q.*—Very few censuses are really correct. It is really guess-work in every country. Why not begin at once and gradually improve the quality by subsequent periodical census ? We have to make an economic survey.

A.—An economic survey, not an economic census. It is the census I am against. The survey would give you good value for your money.

Mr. Kaul.—*Q.*—We have called it an economic survey in the sense of a census of wealth and production ?

A.—I know.

Q.—The main thing in your paper is the peculiar view you take of wealth. How would you define wealth ?

A.—I suggested in my answer to question 63 that it is first necessary to find out what is meant by wealth.

Chairman.—*Q.*—Wealth is property, not riches, but property. There is national wealth and individual wealth. Individual wealth is the property in the possession of a person and national wealth is the wealth of individuals *plus* the wealth of corporations *plus* the wealth of Government assets. All that totalled up is the national wealth and that divided by the population is the amount per head.

A.—And credit facilities ?

Q.—They are not measurable.

A.—My point was that they do not exist in this country. It has a material effect in reducing the wealth of the country.

Mr. Kaul.—*Q.*—Is that the effect ?

A.—That is the effect of the absence of these things.

Chairman.—*Q.*—Then how would you proceed to ascertain the occupation of the agricultural districts. You know that in your province 72 per cent. of the province live on agriculture and 28 per cent. live on other things. We must find out the means of these other people also. It will not do to neglect this 28 per cent.

A.—Certainly not. But does not that 28 per cent. include a good many subsidiary agriculturists such as potters and village menials who live on the village land ?

Q.—This 72 per cent. includes agricultural labourers. I do not know that it does not include menials also.

A.—I should have thought it was more than 72 per cent.

Q.—As a matter of fact, in Bihar and Orissa, the population is mainly agricultural.

A.—Almost entirely, Sir, except coal-mining. Coal-mining is a big industry.

Q.—Are you in favour of an economic enquiry with a view to finding out the economic condition of the people in the country? You want to arrive at the economic condition of the individual by ascertaining the income of the whole country?

A.—That was my suggestion, that it would be much simpler to do, more accurate in result and probably less expensive.

Q.—And we have also to find out the economic condition of the classes. That is one of the terms of reference.

A.—Then you have another proposition. You cannot take them by areas. If you go into the economic condition of the classes, you must do that separately, because it means an intensive study. I have just had an example of intensive study in regard to *kala-azar* in Patna. A detailed house-to-house enquiry was made and a number of question papers were filled in in regard to a population of 40,000, and it took eight doctors working for four months to do it.

Q.—Do you say that the economic condition of the classes cannot be obtained except by intensive study?

A.—What I suggested was that an economic study of the classes could be easily done, but that it was not the same thing as an economic study of the wealth of a country as a whole.

Q.—We cannot carry out an intensive study of the whole country.

A.—You have to have multiple surveys, and if you multiply them they will become both too many and too expensive.

Q.—Do you not think that some kind of general enquiry would supply us with materials which would be enough to go on with till the intensive study is carried out and information is verified by these intensive studies?

A.—I do not feel competent to answer that question.

Professor Burnett-Hurst.—Q.—A question was put to you as to whether you regard wealth and income as the two tests of economic progress. Do you agree that wealth and income are the only two tests of economic progress?

A.—I would not commit myself to an opinion on that point.

Q.—If you found out a man's income, would that tell you his economic position? Would you not have to ascertain his cost of living?

A.—A man's income in Bombay may be slightly higher than that of a man in Patna and yet he would be worse off. Wages vary with distances owing to the high transport charges.

Mr. Kaul.—Q.—Then you do not favour intensive study except as an academic matter? Would it have some local value?

A.—Every knowledge has some value, but I do not think that an intensive local enquiry, unless carried out on a colossal scale, can give you information for the whole country. If you carry it out on a colossal scale, it costs a lot of money, and, if you do not, it has only a local value.

Q.—Would you then, in order to obtain information, in order to ascertain the wealth of a country or the wealth per head, go purely on the basis of the figures of production coupled with rough estimates of wages and income and multiply them by the population, *i.e.*, persons earning those wages ?

A.—I would suggest that it would simplify matters to leave wages out. I mean wages in regard to agricultural matters, mining and things of that sort. If you take, as I suggested at the beginning, the export value of a commodity and not its local value at any point, the difference in the value benefits the intermediate persons who handled that commodity.

Q.—So that you want to take the export value ?

A.—Of the main crops.

Q.—Not only the main crops, but also everything that is produced.

A.—You cannot do that in regard to everything, but you can do it with regard to the main crops.

Q.—The export value is the value to the country, and includes all wages and intermediate profits.

A.—Yes.

Q.—What about the port of export ?

A.—The rice crop is twenty million tons. If you value that at the export value, the result will give you the profit, not only of the seller, but also of *banias*, the transport agents and everything else.

Q.—If it is eaten up here, then all that is not added to it ?

A.—No. That is very important. You must express them in equal terms. You cannot take the value of rupees as one thing in Bombay, another in Central India and another elsewhere. My contention is that the previous estimates for India are too low. A man who grows rice is credited at the rate of Rs. 2 a maund. It ought to be Rs. 6 a maund. If he had to buy it in the market he would have to pay a great deal more, and that is the value to him. If he grows it, you might write it down as of no value because it is grown by him, and then the estimate of individual wealth would be far too low.

Q.—You might take the price as the price at the village, and not as the price at Bombay or Karachi ?

A.—Any statement of wealth in rupees is not comparable, either internally in India or internationally.

Q.—Is not Rs. 10 in Calcutta very much less than Rs. 10 in the country ?

A.—That is where my answer comes in. You can equalise it by raising the value in the place where it has not risen. If you expressed your value in terms of rice, that point would not arise, but when you say "rupees", rupees have not the same value because the rice is cheaper there.

Mr. Kaul.—I agree with half, but not with the other half.

Professor Burnett-Hurst.—*Q.*—You say in answer to questions 1 to 4 second paragraph, “The statistical data with regard to staple crops and the more important minerals and manufactures are probably sufficient and as reliable as can be expected. The accumulation of statistical information with regard to minor industries, *e.g.*, “the supply of honey” or “fishing for edible oysters” would appear to be largely a waste of time and money, as the cost of acquiring such information would be vastly greater than its importance”. The idea is to get the total production, taking everything into account, as far as possible. We are merely enquiring as to whether it is possible to get this information. Many items of importance are omitted in making estimates. For instance there is a considerable production of fish, and there is the production of cow-dung cakes. That is a large industry. The latter has never been taken into account at all in former estimates of production. For that reason, do you not think that efforts should be made to ascertain, as far as possible, information about the so-called minor heads ?

A.—If you want to have general information for instance, as to the value of edible oysters which are collected and sold on the coasts of India—the collection of that information would cost more than the crop is worth. Of course, there are crops in regard to which the collection of information is well worth the trouble. I think that the intelligent interpretation of statistics is an art, and only a man of experience can handle statistics. And, he could give you an interpretation which the other man could not, and yet the other man will say it is all guess work. I have had the same experience in regard to vital statistics. After having had twenty years experience, one can interpret them in a more useful way than a man who has never seen them before. He might be a brilliant mathematician, but if he did not know what the statistics related to, he could only work on academic lines.

Q.—With your knowledge of vital statistics in this country and, presumably, in England, would you agree that it is difficult to obtain accurate statistics in India, whereas the collection of accurate statistics in England has been achieved to a very high degree ? Is the difference not due to the fact that in India you are dealing with an illiterate and suspicious population—suspicious when enquiries are made ?

A.—It is largely due to that. Also, it is not a legal necessity whereas in England it is a legal necessity.

Q.—Is it also due to the employment of an ill-paid staff in India ?

A.—Yes. The statistics in regard to my own line, I can assure you, are not worth the paper they are printed on.

Q.—Do you refer to India ?

A.—Yes.

Q.—Does the *chowkidar* collect the primary data of vital statistics ?

A.—He is the unit for collecting any information.

Q.—How much a month is he paid ?

A.—Some trivial sum. It is about Rs. 2 or Rs. 3. It does not exceed Rs. 5 ; I cannot tell you exactly. The trouble is to procure any

other agency. The province of Bihar and Orissa is rather backward. Education is not very advanced.

Q.—So that one cannot rely on the existing agency for supplying accurate data ?

A.—No. It may be better in other provinces than in ours, but I do not believe that we get any statistics which are what you would call reliable.

Q.—In England, America and other countries they employ a highly skilled staff for obtaining information.

A.—I do not know, but I believe so.

Q.—If you want to obtain similar information in this country, and anything approaching equal accuracy, you will have to pay more than you do at the present time ?

A.—Yes.

Q.—Much depends upon the staff you employ ?

A.—Yes ; I think so. I have two instances. One I mentioned before—Kala-Azar—and this other one—vital statistics.

Q.—Do you think that we should make an effort to improve the vital statistics of the country ?

A.—Yes, it would certainly be advisable.

Q.—Would it be possible ?

A.—All things are possible. It would depend upon whether you are prepared to pay the bill.

Q.—You can obtain any information you want if you are prepared to pay for it, so that the question of converting mere guesses into accurate estimates is largely a matter of money ?

A.—Yes.

Q.—And that is why the figures of foreign countries where they spend large sums of money on the collection of statistics are more accurate than anything so far attained in India ?

A.—Yes.

Q.—Would you share the opinion of the last witness that an enquiry into individual wealth would be inquisitorial ?

A.—I think it would be very futile, and it would be impossible to obtain any result worth considering.

Q.—Do you think it would be possible to obtain information of the income of the middle classes ?

A.—Not if they had anything to gain in not telling you the truth. I mean, a great many would have an objection to telling you the truth.

Q.—Are you acquainted with the conditions of miners in your province ?

A.—Yes.

Q.—How could we get information regarding miners when they work a few weeks in the pits and then return to their villages ?

A.—There are two sorts of miners ; one is the miner who stays in the coal-field, and then there are the other miners who put in four or six months, and then go to their villages. For the whole-time men it is very easy to get what they are earning, and if you have some of the coal mine managers as witnesses, they can give you reliable statistics as to what their wages are.

Q.—They are piece-workers ?

A.—Yes ; they work two shifts a week.

Q.—They work in gangs ?

A.—No ; family parties. They have their women and children. I think a good cutter earns Rs. 25 to Rs. 30 a month.

Q.—Apart from that could the manager give you any information as to each family unit ?

A.—They are paid according to the number of tubs they send up.

Q.—When that family goes back to its village, how would you ascertain its annual income ?

A.—I would not be able to tell you. It is possible in some cases, but it would not be possible in every case. You would have to see what they are doing in their villages. If they are growing a rice crop, you will get that information if you make enquiries in a rice growing area.

Q.—The idea of the intensive study was to keep the family under observation for a year. If the family shifts to the coal field, is the investigator to follow it up to the coal field, or remain behind ?

A.—There are a number of people who are time workers in the coal field. But that is nothing compared to the half-time worker in the jute growing areas in Bengal. There is a regular immigration of several lakhs a year.

Q.—Is not all that going to complicate the question of wages and income ?

A.—Yes ; if one has to take them into consideration. They are a very mobile population.

Q.—If you omitted them, would you not get an accurate figure ?

A.—You would be leaving out an important factor.

RAI BAHADUR K. L. BABUA, B.L., F.R.E.S., Director of Agriculture and Industries, Assam.

Written statement.

Questions 5, 6, 7 and 8 of the Questionnaire.—The Agricultural statistics of the temporarily settled districts of Assam where a Land Record staff is maintained are on the whole reliable. In the districts of Sylhet and Goalpara which are permanently settled the estimates of the area under crops are conjectural. In these districts the best plan, in my personal opinion, would be to employ a number of temporary surveyors in one year to ascertain as approximately as possible the areas under various crops in each panchait's circle. In subsequent years the variations may be guessed by the local panchaits and reported to the district officers. Circle Sub-Deputy Collectors and also Agricultural Department officers may check a certain percentage of such guesses. The regular survey has to be repeated once in 15 years. If possible the cost should be borne by the Government of India. It will not be possible to get the survey done by the population census staff.

As to out-turn crop cutting experiment must remain the basis of calculation. In Assam such experiments are made by responsible officers of Gazetted rank and the figures supplied by them are on the whole reliable. The number of such experiments in each sub-division should be increased.

Question 9.—The Cattle census figures are fairly reliable.

Questions 10 and 12.—It is hardly possible to collect statistics of such products. The Rail and River borne trade report gave us some idea of the total production of these articles but that report has now been abolished.

Question 38.—It is impossible to collect statistics with regard to production of cottage industries without a staff of Industrial Surveyors.

Question 40.—With regard to agricultural wages sampling is unavoidable as a detailed census will require a huge staff. At present the group officers who report wages are responsible officers and their returns are fairly accurate.

With regard to Income, wealth, cost of living and indebtedness true information can only be gathered by intensive study and enquiries to be made by competent persons official or non-official. It is however not possible to undertake such enquiries at present on account of prohibitive cost. Co-operative Societies might supply more or less reliable statistics with regard to their members only.

Cost of all economic censuses should, as in the case of the population census, be met from Central revenues. This is my personal opinion.

Oral evidence, the 14th April, 1925.

Chairman.—Q.—Suppose you wanted statistics of agriculture as well as industrial production in your province, how would you collect them? To what extent is material available at present?

A.—We cannot obtain them unless we have a staff. With regard to industrial production, if we have some industrial surveyors, we might do something. With regard to large industries, we have information to some extent. For instance, tea is the biggest industry in Assam and we get the figures from the planters. There are other industries. We also get statistics of coal and mineral oil.

Mr. Kaul.—Q.—What about agriculture?

A.—It is difficult to get statistics of agriculture.

Q.—Have you a record of areas under crops?

A.—We have eight plains districts, and we have Land Record staff in six of them. Of those districts, six are temporarily settled and two for which we have no staff, are permanently settled.

Mr. Kaul.—Q.—And there you collect the information by means of chowkidars?

A.—Yes.

Q.—Are the figures reliable?

A.—They are not very reliable with regard to the two districts.

Q.—Which are those two districts?

A.—Sylhet and Goalpara.

Q.—What can you do to make them reliable?

A.—In my opinion it is possible to make them reliable. You have, once for all, to incur the expenditure for one year, keep a fairly large staff and get an estimate.

Chairman.—Q.—Do you want to have a stock-taking census?

A.—It would be very costly.

Q.—Have not those two districts been surveyed?

A.—No.

Mr. Kaul.—Q.—So the area is a guess?

A.—Yes.

Professor Burnett-Hurst.—Q.—Suppose the year you selected for your special study happened to be one that was not normal?

A.—You would have to go to the expense again. Once you go to the fields and villages, you can ascertain the figures not only for that year but also for the previous years.

Mr. Kaul.—Q.—You say that the figures should be obtained in one year. How about the variation?

A.—The local officers may report the variation.

Q.—What officers?

A.—The *panchayatdars*.

Professor Burnett-Hurst.—*Q.*—How much is a *chowkidar* paid ?

A.—I think he gets about Rs. 5 per month.

Q.—Do you think a man getting Rs. 5 a month is a reliable agency for reporting statistical data ?

A.—These figures, for instance, the jute statistics that we get, are not collected by the *chowkidars*, but by the members of the *panchayat* themselves.

Q.—That is in special cases—in jute ?

A.—Probably the members of the *panchayat* might rely to some extent on the *chowkidar*.

Q.—Are they paid ?

A.—They are not paid.

Mr. Kaul.—*Q.*—We are told by a witness that a *panchayat* is paid 10 per cent. of the collection of the *chowkidari* dues ?

A.—Yes.

Q.—What does it come to ?

A.—I could not tell you. I am not very much concerned with it.

Professor Burnett-Hurst.—*Q.*—But is the data at present collected unreliable ?

A.—Entirely guess work. As a matter of fact, the other day in Shillong the Taxation Committee found that there was a great shortage of crops in a particular district during a particular year, and it was probably one of the best years, but the area reported was below normal. It was mere guess work.

Q.—During epidemics, and especially during the influenza epidemic, the reports of *chowkidars* were less reliable ?

A.—Yes.

Q.—Would you suggest that persons who have been trained in agricultural work should be made responsible for recording the statistics of crops ?

A.—Over and above the reports we get from the district officers, we do, to some extent, obtain information ourselves. We make our officers do a lot of work on crop experiments, and also report generally in regard to acreage of crops, and we compare their reports with those received from the district officers.

Q.—Is the Director of Agriculture responsible ?

A.—Yes.

Q.—And do you submit your reports to the Director of Statistics ?

A.—Yes.

Q.—Probably, even with this information which you get and utilise, you still regard the data relative to the outturn as unreliable ?

A.—The figures in regard to the outturn are not very unreliable. Of course, I have found from my experience that they are made very carefully.

Mr. Kaul.—*Q.*—Who makes them

A.—Officers above the rank of sub-deputy collector.

Q.—Responsible officers ?

A.—Yes.

Q.—Does not the personal element enter

A.—It does. But still they are guided by a set of rules, and if you find that one man is making a mistake, you return his report to him for correction.

Q.—How do you find that he is making a mistake ?

A.—We find the normal—whether it is high or low.

Q.—If it is not normal, do you return it ?

A.—Yes.

Q.—So it is possible he may report it as normal when it is abnormal, and you would not return it ?

A.—Unless it is unusual. In sending up his report he must state whether the crop was not up to the average.

Q.—Is he supposed to know the rules ? Might not a new man make a mistake ?

A.—We have a form, and he has to fill up the remarks as to the condition of the weather and the condition of the crops. It is very rarely that we have to send it back.

Professor Burnett-Hurst.—*Q.*—Would you suggest that the students trained at your colleges should be employed to supervise the work of crop reports in agricultural areas ?

A.—That is difficult, because the circle sub-deputy collectors are under a collector, and they cannot be put under agricultural officers.

Q.—Do you get your returns from the collectors ?

A.—Through the collectors.

Q.—Could not your students work under the collectors and sub-deputy collectors ? Is there not a difference between the agricultural officer and the agricultural student ?

A.—All our officers are educated at agricultural colleges.

Q.—What about the students trained in agriculture at your college ?

A.—We have no college.

Q.—Where are they trained ?

A.—Some are trained in Pusa, Sabour and other places.

Q.—Have you no staff from which to recruit for crop reporting ?

A.—None.

Q.—Would it be possible to arrange any scheme of agricultural demonstrators who would also act as crop reporters ?

A.—I do not think so, because the class of people we have for agricultural demonstration are not very educated. The thing in regard to

his is that we cannot possibly raise any suspicion in the minds of the people, which will be the case if we make enquiries of this nature through irresponsible people.

Q.—If you think it is going to raise suspicion when it is an enquiry in regard to agriculture, do you think it would raise more suspicion if it is in regard to individual wealth ?

A.—Oh, yes. You will have to employ a very good staff, and very responsible persons, so that they can make the villagers understand that it is not with any ulterior motive that Government is making this enquiry ; but with inferior staff the result would be bad.

Q.—With a suitable staff ?

A.—I do not think it will be reliable.

Q.—Are there not certain parts of Assam where the investigator may be very badly handled if he started enquiring about incomes ?

A.—Yes. We would have to omit the hill tracts. We have just made a report, and I have had to omit the hill provinces.

Q.—Why is that ?

A.—Because we have not the staff.

Q.—If you sought the information, might you not get into trouble ?

A.—Yes, that is one reason.

Q.—Is the tract inaccessible ?

A.—The tract is inaccessible in some places, and without the help of tribesmen you cannot go from place to place.

Chairman.—*Q.*—Have you taken a census of wages ?

A.—Yes.

Q.—With whose help ?

A.—With the help of the Land Records Staff, in six districts.

Q.—And in how many centres ?

A.—We place one officer in every centre and he has to make a census for only four villages.

Q.—There are four villages attached to a centre : how many villages are there in an entire tract ?

A.—I could not tell you.

Q.—How many are there in Assam ?

A.—We have 25,000 villages in the whole province, and 19 subdivisions in the whole province.

Q.—So that practically you have about 1,300 villages in each subdivision ?

A.—Yes.

Q.—And out of this number of villages you take only four ?

A.—Yes.

Q.—That is a very small sample ?

A.—Yes ; we have to finish the census in the month of December.

Q.—Do you think the figures are sufficiently reliable to generalise from four villages to over a thousand ?

A.—They have to select the villages and groups in such a manner as to make them serve as an average for the whole group.

Q.—Who selects ? Is that done by the district officers ?

A.—Not the district officer himself. The list is sent to me for approval.

Professor Burnett-Hurst.—Q.—What information do you seek in the census, and from what classes of persons ?

A.—The same as that put down here. We generally repeat the enquiry at the same villages for the next census.

Q.—Do you take your census quinquennially ?

A.—Yes.

Q.—Do you deal with urban wages also ?

A.—Only in regard to industrial wages.

Q.—Craftsmen and village artisans ?

A.—Yes.

Q.—From what areas do you collect the information.

A.—We get the municipalities to collect.

Q.—Do you know how they do it ?

A.—I think they do it by house-to-house enquiry. Where they have the Vital Statistics officer, they can do it easily.

Q.—Is the vital statistics officer a medical man ?

A.—No ; he is an officer paid by the Municipality.

Q.—But he is the Municipality Medical officer of Health ?

A.—Yes.

Q.—Are not your vital statistics extremely inaccurate ?

A.—I cannot tell you anything about vital statistics. In rural areas they are not reliable, but in large towns they are. The people are liable to prosecution if they do not furnish information.

Mr. Kaul.—Q.—I suppose in towns the householders report births and deaths.

A.—In our province, proceedings are taken rather frequently if they do not.

Professor Burnett-Hurst.—Q.—Is it your opinion that an enquiry into indebtedness should be undertaken, if an intensive study is made ?

A.—I think an enquiry should be made, but it seems to me out of the range of practical politics. I think you can do it through co-operative societies, but that you can only do in the villages where you have them.

Q.—Is there any *haisiyat* statement ?

A.—Yes.

Q.—What does it contain ?

A.—Movable and immovable property, and indebtedness.

Q.—Is there any reference to the number and the value of the trees ?

A.—No, that is included in 'land'.

Q.—In the United Provinces, trees are shown separately from the land.

A.—We do not do that. For instance, if a man has an orange orchard, the value of the land is very much increased. It is more valuable than a bare plot of land.

Q.—Do you think it would be unwise to carry out an enquiry into indebtedness?

A.—I think it is impracticable at the moment.

Q.—For what reason?

A.—The cost. Who is going to pay for it?

Q.—Then is it not just as impracticable to carry out an enquiry into other things like income or wealth?

A.—That is so. I do not think Provincial Governments will undertake the enquiry themselves.

Q.—They do not think it will pay?

A.—They would not get any benefit from it. Direct taxation is made by the Government of India and why should the Provincial Governments make the enquiry?

Q.—What is the condition of the District Boards and Municipalities in your province? Are they badly off?

A.—No, but they are not rich. There is *kala-azar* and malaria, and they have to fight these diseases; and, considering these duties, I think they have insufficient money.

Chairman.—Q.—Have you made an estimate of the industrial production in your province—I mean a rough estimate?

A.—No, we have made no rough estimate. In my own province, I tried to gain information with regard to cottage industries, but I had to give it up because I found out that with my present staff I could not do it. As a matter of fact, I completed it for one district with great difficulty.

Q.—What did it come to per head of the population?

A.—I only wanted to get the production of certain classes of industries—for instance, weaving. I wanted to ascertain the value of the cloth they produced in particular places.

Q.—Have you prepared any budgets?

A.—No.

Q.—Have you published any report?

A.—It is not worth publishing.

Q.—Have you all the agricultural statistics for these?

A.—Yes.

Q.—But have you obtained the value?

A.—No.

Dr. L. L. FERMOR, O.B.E., A.R.S.M., D.Sc., F.G.S., Officiating Director,
Geological Survey of India.

The questions (of the Questionnaire) with which this Department is specially interested, are numbers 22, 23, 25 and 26. I will deal with these questions serially.

Question No. 22.—The minerals for which regularly recurring and full particulars of production and value are not obtainable, are principally those extracted from the mines outside the Indian Mines Act. It is noted in the Appendix E that “no returns for the year 1923 are given in respect of slate, limestone, granite, sandstone, kankar, laterite and marble”; the figures for these minerals will be found in table 32 of Records, Geological Survey of India, Vol. LVI, pt. 2. For the majority of the other minerals for which no returns were received during 1923 as listed in Appendix E, the position is that there was no production. There is already an arrangement in force under which the Local Governments are responsible for the collection of statistics of minerals produced in the non-act mines.

Question No. 23.—It is not clearly understood what the following sentence actually means:—“While the Review of Mineral Production (contained in the Records of the Geological Survey of India) gives the quantity and value of the output of a certain number of minerals.” In fact, the Review contains consolidated statements of figures for the quantity and value of minerals produced from the Act mines as well as the mines not coming under the Act; *i.e.*, the figures published in the Records, Geological Survey of India, include those published by the Chief Inspector of Mines.

Question No. 25.—The Indian Mines Act does not exclude from its scope all mines and quarries which are less than 20 ft. deep. Under the Act No. IV of 1923, mine means any excavation where any operation for the purpose of searching for or obtaining minerals has been or is being carried on, except those falling under the subsequent notification No. M-1051, dated the 26th July 1924 issued by the Government of India in their Department of Industries and Labour.

Question No. 26.—The pit's mouth value of a mineral is deduced by deducting from the market value the charges incurred in transporting the mineral from the mine to the market where it is sold. Pit's mouth value, therefore, bears a correct relation to sale value in the open market. The standard of value published in the reports of the Chief Inspector of Mines, Great Britain, is the pit's mouth value, and I am of opinion that for the sake of uniformity, the same standard should, as far as possible, be retained in Indian reports as heretofore. Royalty is paid on pit's mouth value.

Dr. L. L. FERMOR, O.B.E., A.R.S.M., D.Sc., F.G.S., Officiating Director, Geological Survey of India and **Mr. R. R. SIMPSON, M.Sc.,** Chief Inspector of Mines.

Oral evidence, Wednesday, the 15th April, 1925.

Chairman.—Q.—Do you wish to confine your answers to minerals only or do you want to help us with your advice on other points also bearing on an Economic Survey ?

Mr. Simpson.—A.—I do not think I can usefully go beyond minerals.

Dr. Fermor.—A.—I agree with Mr. Simpson.

Chairman.—Q.—For what minerals is correct information chiefly available ?

Dr. Fermor.—A.—Perhaps it will save you a lot of trouble if I tell you what the position is concerning mineral statistics. For mines under the Mines Act every proprietor has to make a return which goes to Mr. Simpson as Chief Inspector of Mines. He gets the returns required under the Mines Act, and the other returns come to the Geological Survey in one of two ways. For mines not under the Mines Act, but yet in British territory, the returns are sent by the local Governments. For mines in the Indian States, which are not under the Mines Act, the returns come to us through the political officers. There has been a great amount of collaboration between the two departments, and we have agreed as to the collection of statistics. I think Mr. Simpson is of the same opinion, that we can obtain no more information without putting people to too much trouble. The statistics relative to mines under the Mines Act are published by the Chief Inspector of Mines in his Annual Report. The Annual Review of Mineral Production in India published by the Geological Survey includes Mr. Simpson's statistics, the figures obtained from the Indian States and those for mines in British territory not under the Mines Act ; so that this review purports to be a complete review of the mineral production of India for the year to which it relates. We have considered the extent to which we should ask the local Governments to provide us with more detailed statistics than we are now receiving, and we have decided that any further information would be of very doubtful value.

Chairman.—Q.—How would you proceed if Government wanted information of the same standard as is supplied in any other advanced country or Dominion ?

Mr. Simpson.—A.—The trouble is that a large number of small mines are owned by illiterate persons. To get any statistics out of them is hopeless, and it seems to us unnecessary to have them. I may say that under the Mines Act now, we get the figures of the output from all excavations except those given in Notification No. M.-1051, dated the 26th July 1924, made by the Government of India in the Department of Industries and Labour. Even from these exempted mines we get some figures. The exempted mines are mines for certain minerals which are not more than 20 feet deep and in which not more than 50 persons are employed simultaneously.

Dr. Fermor.—A.—The position is that, under the old Act, statistics for mines less than 20 feet deep came to us. Now they all go to the Mines Department. Those that do not come to them will still come to us.

Mr. Kaul.—Q.—Between the two will anything be left ?

Mr. Simpson.—A.—Nothing material ; a very small amount escapes.

Chairman.—Q.—What is the value of the Minerals which escape coming into your calculations ?

Mr. Simpson.—A.—I should say not much, except building stone. Owners of all large stone quarries are required to submit figures.

Prof. Burnett-Hurst.—Q.—There are a considerable number of stone quarries ?

Mr. Simpson.—A.—Yes. Owners of all stone quarries which are more than 20 feet deep or which employ more than 50 persons, have to send us figures.

Chairman.—Q.—They charge it as such and collect the fees ?

Mr. Simpson.—A.—It is merely a small matter of Royalties.

Dr. Fermor.—A.—Our figures of mineral production include such figures as we have for building-stone, but they are not complete by any means.

Prof. Burnett-Hurst.—Q.—Taking the figures of building stone at four million tons—that is the total you publish—can you give us any rough estimate as to what proportion these figures bear to the entire production of stone material or road metal in the country ?

Dr. Fermor.—A.—I should not be surprised if it was less than half. On the other hand, it may be three quarters because most of the big occurrences are reported. What proportion is not included depends upon the proportion of the small occurrences.

Prof. Burnett-Hurst.—Q.—How would you form a rough estimate of the building-stone material and road metal produced in the country ?

Dr. Fermor.—A.—You would have to add 50 or 100 per cent.

Q.—I quite realise the difficulties of getting these returns.

A.—You will notice that the totals of building-stone are included in Group 2, of which we cannot get reliable data. The data given there are reliable so far as they go, but they are not complete. We get somewhat full data from some local Governments, and these figures are compiled. The other Governments are not able to return figures of production except in mines under the Mines Act.

Chairman.—Q.—Do you think it is possible to get more complete figures for lime in certain provinces than are supplied in the returns ?

A.—I think the limestone column is the most complete in the table of production of building materials and road metal.

Mr. Simpson.—A.—Except that we do not include all *kunkar* limestone. In this respect it is incomplete.

Q.—The total value of mineral products is 20 million or 25 million pounds ?

Dr. Fermor.—A.—Yes.

Q.—You have not got the exact measurements in places ? Supposing more exact measurements were given, what would be the result expressed in value ?

A.—Everything depends upon where you value the minerals.

Q.—Have you issued instructions as to where they should be valued ?

A.—Yes, at the mines.

Prof. Burnett-Hurst.—Q.—Is that the case with all minerals ?

A.—It is the basis for all minerals. In one or two cases we may make a change and accept the values at the port of export. All this relates to value, and not to quantity. The ideal method would be to value each mineral at the point where it is shipped or used. Minerals going to another country would be valued at the port of export. Minerals which are smelted in India would be valued on arrival at the smelting plant.

Q.—Supposing you had all the information, how much more would the value be at the mines ?

Mr. Simpson.—A.—In the mines it would be the same.

Q.—If more exact information was collected ?

A.—We cannot say whether it would be more or less. In some places it is over-valued, and in some, under-valued.

Dr. Fermor.—A.—The value given to me is the cost of production plus profit.

Q.—At the pit-head ?

A.—Yes, otherwise it is market value, which is pit-head value plus cost of transportation to the market.

Prof. Burnett-Hurst.—Q.—This is exclusive of salt ?

A.—Yes.

Q.—Is mica valued at the port of export or at the pit-head ?

A.—You have hit upon a mineral open to some discussion. Considerable thefts take place in the mica fields as a result of which the total amount reported as produced is smaller than the amount exported. The export figures include the stolen mica as well as the production already reported.

Mr. Simpson.—A.—There is more mica sold than is reported as mined.

Dr. Fermor.—A.—At page 125 of that book, Records, Geological Survey of India, (Vol. LVI), you will find a detailed statement which gives the quantity and value of the production. If you refer to our Quinquennial Reviews, you will find a statement of the value of the mica exported. The last quinquennial period for which I have statistics here is 1915 to 1918. The average annual production was about 41,000 cwt., and the average export was about 49,000 cwt. So there was a difference of a little over 8,000 cwts. between the two. If you can discover a method by which you can enable us to get the exact returns of the mica produced you will be doing a service, not only to us, but also to the mica industry.

Mr. Simpson.—A.—They are trying to stop the thieving by special legislation. A Bill will be introduced for the purpose. Thieving is going on to a very considerable extent at the present moment.

Dr. Fermor.—A.—The losses due to thefts have been so great as to result in the shutting down of mines which would otherwise be working profitably.

Q.—With the exception of manganese ore and mica, the minerals are valued at the pit-head ?

A.—Except also jadestone and zinc-ore.

Mr. Simpson.—*A.*—In my figures they are all pithead values. In the Geological Survey figures there are several minerals which are valued at the port of export but practically all the minerals are at pithead values.

Q.—Would it be possible to get some uniformity in the valuation ?

A.—For all practical purposes there is uniformity.

Q.—What about Jade ?

Dr. Fermor.—*A.*—Jade is worked in Upper Burma but not in the administrative tracts. It is entirely outside our area. The mines have to be 20 feet deep. Jade is exported to China. It has no particular value in Burma, except for export purposes.

Chairman.—*Q.*—What do they use it for ?

A.—Ornaments.

Prof. Burnett-Hurst.—*Q.*—What we are endeavouring to ascertain is the value of the total mineral production.

Mr. Simpson.—*A.*—So far as all the important minerals are concerned, you have that.

Q.—In our question No. 22, is a list of minerals for which no returns were received in 1923.

A.—The position is that there is no production for the majority of them.

Q.—Would you mind mentioning which they are ?

Dr. Fermor.—*A.*—There is mercury, which has never yet been produced in India.

Q.—Yet it figures as a mineral of economic value in the books of the Geological Survey of India.

Dr. Fermor.—*A.*—A little mercury or cinnabar has been reported from various localities. We put in paragraphs discussing minerals which have been reported as found, but this does not always mean that the mineral is found in quantity or that it has ever been worked.

Mr. Simpson.—*A.*—In my report you will find some figures for fuller's earth, but only a small quantity has been produced.

Dr. Fermor.—*A.*—There is nothing about mercury in the last quinquennial review of mineral production.

Q.—There are two sections of minerals—those in regard to which you have information and those about which you do not publish information.

A.—Do you wish me to start with those about which we have not got figures ? There is a small production of agate. It is a sort of cottage industry. There are small mines on the Rajpipla side. We have no figures and we have never received any figures concerning the production of amethysts. Antimony is occasionally found associated with other minerals and there has been a production in the past from near the Shigr: glacier. There is no production nowadays. Occasionally there has been

a production in Lower Burma. As regards aquamarine, there is a mine in Kashmere. I suppose it is not worked, for we have no returns. For building stones we have in fact given figures. For cobalt there is no production. Corundum, I know, is being produced in Rewa, at least on a small scale, for on a recent visit to Banda I found the agate-workers using corundum from Rewa. Fluorspar is not produced. Graphite: I think there was none in 1923. There is generally a very small production of graphite. Garnets are sometimes produced in Rajputana. There must be a small production, but we do not get returns. Lignites: there is no production. Lithographic stone occurs, but it has never been produced in any quantity. Molybdenum was found in small quantities associated with wolfram in Tavoy. Mineral waters: there is no industry for utilising them. Of nickel there is no production. The absence of deposit of nickel ore is one of the great defects of the Indian supplies of minerals. We publish figures of production of phosphates. Peat: I do not know if it exists, except in the Nilgiris. As for potash salts they exist in small quantity in association with the salt deposits of the Salt Range. They would not be recognised unless people were specially looking for them. As regards precious stones, there are no deposits of any size except those already worked in the Ruby Mines district of Burma. Rock crystal is found all over the country, but there is no industry. Rose quartz is found in some places, but it is not used. Refractories: the first is fire-clay, and it has already been given under clay. Fire-clay would probably come from the Bengal coalfields. (You will find it at page 139, Records, Geological Survey of India, Volume LVI). Kaolin is probably given under clay as well. For some refractory materials we have not obtained figures as such but they would go under 'miscellaneous' and under 'building material', if extracted as building stone. Sillimanite is exported from the Khasi hills. Kyanite has been found in Singhbhum, and investigations are being made concerning the utilising of it, but I do not think it has yet become an article of export. Pitchblende is found occasionally, but I have not heard of deposits of any size. As regards platinum and iridosmine: these are occasionally found in minute quantities with alluvial gold, especially in the Burmese rivers, and a small quantity of platinum was obtained in the past as a bye-product by the Burma Gold Dredging Co. There are deposits of sulphur in Baluchistan, but they are of small size as far as is known and I do not think any attempt has been made to work them. Sulphate of soda is produced, and we obtain statistics from the Department of Northern India Salt Revenue. The producing districts are Champaran, Saran, Muzaffarpur, and one or two other districts in the Ganges valley. Sulphite ores are not returned as such. No attempt has been made to recover sulphur, or at any rate, I have never heard of it. There is plenty of titanium-ore, but the use for it is very limited.

*Prof. Burnett-Hurst.—Q.—*You can use it for steel?

*A.—*Yes, for particular kinds of steel. There is a probability that in the future it will be used for the manufacture of white paint. Titanite would be obtained as a bye-product in the treatment of Indian bauxite for extracting aluminium should this industry be introduced into India. Uranium occurs very rarely; pitchblende is an ore of uranium.

*Q.—*And arsenic?

*Dr. Fermor.—A.—*It is very rare in India. There are no deposits. There used to be a production of blue vitriol in Rajputana. Magnesium

sulphate may be obtained from sea water, and there is an industry on the Bombay side, near the Runn of Kutch, for the extraction of magnesium chloride from sea water. It is used in the cotton industry. Borax is obtained from Tibet and not in India. There is usually a moderate quantity of borax coming through the passes into India. You can find the figures for it in the report of the statistical department dealing with the land-borne trade.

Q.—And a certain amount of sand is required for glass making ?

A.—Yes, this is likely to increase in importance.

Q.—If a Census of Production was carried out, glass factories would report how much sand they use ?

A.—Yes, then you would be able to help us, by passing on the figures of the glass materials. We have no means of getting these figures at present, because they are worked in such small quantities.

Prof. Burnett-Hurst.—*Q.*—I have a note here which says : “ Although many valuable mineral products are being worked in the different parts of India, it is impossible to obtain figures for some of them sufficiently precise to be of any value for statistical purposes. The most conspicuous of such minerals are the different forms of building materials and slate.” Would you agree with that ?

Dr. Fermor.—*A.*—Yes, I understand that an attempt was made at one time to collect fairly elaborate statistics of building material and slate. It was abandoned in 1899, because the data could not possibly rank as being of any value as they were little more than a mere guess. Since then we have attempted to get better figures.

Prof. Burnett-Hurst.—*Q.*—The actual statement of Sir Thomas Holland was this : “ If the extent of the use of building materials could be expressed by any recognised standard, it would form one of the best guides to the industrial development of a country. The attempt made to obtain returns of building stones, road metal, and clays used in India was abandoned when it was shown, in 1899, that the returns could not possibly rank in value much above mere guesses ”. Since then you think more reliable figures are obtainable ?

Dr. Fermor.—*A.*—I should not like to assert that the general position is very much better than what Sir Thomas Holland suggested. I must admit that the figures for building material and road metal are commonly unsatisfactory and incomplete. But I think the lime-stone figures are more accurate because several large companies work limestone for the manufacture of lime or for fluxing purposes and the data which they submit are naturally of the same order of accuracy as any other mineral for which the Mines Department gets figures.

Chairman.—*Q.*—Do you have provincial representatives of your Department in all parts of the country ?

Dr. Fermor.—*A.*—We work the whole of India from Calcutta, which is our headquarters, and we have divided India into circles, in each of which we have a Superintendent.

Q.—What is the revenue of your Department ?

A.—The direct revenue is about Rs. 2,000 to Rs. 3,000 from the sale of publications, but the indirect revenue is several times the cost of the

department. In our indirect revenues we should claim a proportion of the royalties paid to local Governments and of the income-tax paid by mining companies to the central Government.

Q.—How much do you get for the Government out of the 21 million pounds worth of minerals ?

A.—The standard rate of royalty for most minerals is $2\frac{1}{2}$ per cent. on the pit's mouth value. A minimum of $2\frac{1}{2}$ per cent. of the total value of minerals produced from lands in which the minerals are worked by Government should be received by the local Governments in the form of royalties on the minerals.

Mr. Simpson.—*A.*—The Government get no royalties on coal in the coalfields in Bihar and Orissa and Bengal.

Dr. Fermor.—*A.*—That is because they are under the permanent settlements. As regards the gold production in Mysore, the Mysore Government gets the royalties.

Q.—What mineral resources are not utilised here, for which schemes for utilisation exist ?

A.—Bauxite is the first of them. It would be the basis of aluminium smelting. Large deposits are available, but the smelting of aluminium is concentrated in very few hands.

Q.—Is it a monopoly ?

A.—It is not quite a monopoly, but it is possibly becoming one. I do not think the public know exactly to what extent there is an interlocking of interests.

Mr. Simpson.—*A.*—Bauxite is only valuable when it is near a cheap source of power.

Q.—Are there any other mineral resources which could be utilised ?

Dr. Fermor.—*A.*—Ideas on this point can be obtained by studying the obtainable statistics. The method is to study the statistics of imports into the country, and compare the list of imports of substances made from minerals with the list of minerals found in the country.

Q.—You must have a lot of general ideas for developing mineral resources ?

A.—This method was followed whilst Industries was attached to the Indian Munitions Board, and certain areas were found.

Q.—Have they resulted in any report ?

A.—Certain schemes were suggested in confidential reports to the Munitions Board in connection with the investigations which were made to see what we could do in India during the war to make things locally out of the materials obtainable in the country. Various mineral products were considered.

Q.—What additional information do you think is required by the Geological Department, from a scientific point of view, which is not collected at present ?

A.—My case is that we can get all the information we want by asking the people who have the figures. I have never found mining people refuse to give information. They will give information confidentially with regard

to anything that we wish to ask them about. I deprecate any action on the part of Government to make the submission of such information compulsory, because we can always get it in another way.

Q.—What information would they object to give ?

A.—They would object to give the details of the cost of operating, except under great confidence.

Q.—You mean on account of commercial rivalry ?

A.—Yes.

Prof. Burnett-Hurst.—*Q.*—I should like to put a few questions with regard to the possibility of obtaining wage returns from mines and mine managers.

Mr. Simpson.—*A.*—We are getting them now, to a small extent.

Q.—I think this is the first time that the wages have been stated ?

A.—Yes.

Q.—But these are a few averages.

A.—Yes, but I get the figures.

Chairman.—*Q.*—Are any changes necessary in the Factories and Mines Acts ?

A.—We have just got a new Act which is fairly satisfactory, the Indian Mines Act of 1923. By the regulations under it, statistics have to be submitted.

Prof. Burnett-Hurst.—*Q.*—These returns merely give you the average earnings, etc.

A.—Yes.

Q.—With your knowledge of the mining industry, do you think it is possible to carry out a detailed census of wages on the lines of the enquiry conducted in Great Britain ?

A.—It could be done, but it would be very troublesome.

Q.—Troublesome for the mine managers and the mine owners ?

A.—Yes : and it is a question whether you would get accurate returns. There is such a lot of contractors' work.

Q.—The contract work is one difficulty. Another difficulty would arise from the workers working in groups or families : and this division into families would create difficulties which do not arise in England, where a miner is paid at a piece rate of wage for the particular work that he carries out ?

A.—But the figures we get give you a very fair idea of the economic condition of the Indian miner.

Q.—They only take into account his earnings in the mines and not what he gets when he goes to his village. He is not in the habit of remaining at the mines ?

A.—There is quite a large number who stay at the mines all the year round, and these figures are figures for the number of persons who work at the mines and not the total employees. It is a total average of these

who work every day on which the mines work. It is the average number of attendances divided by the average days worked. That gives the whole economic income, supposing a man stayed there all the year round.

Q.—That is a big presumption ?

A.—Yes, you can divide it by two and add the man's agricultural earnings, which could be ascertained on enquiry.

Q.—Can you give a rough idea as to the proportion of the miners who are settled at the mines as compared with those who migrate to their villages ?

A.—I cannot. I have no idea of it. They are so migratory in their habits.

Mr. Kaul.—*Q.*—The number of persons staying at the mines has increased ?

A.—As the conditions become more attractive.

Dr. Fermor.—*A.*—And as the children grow up at the mines.

Prof. Burnett-Hurst.—*Q.*—You here have a return of the average number of persons employed during a certain period of time ?

Mr. Simpson.—*A.*—It is the daily average.

Q.—What proportion do you think that average bears to the total number of persons engaged in mining ?

A.—You might have to add 50 per cent.

Q.—There is a considerable amount of absenteeism ?

A.—Yes. It would be anything from 50 to 100 per cent. You may say that the Indian coal-miner does not work more than four or five days a week.

Q.—They come as family units and work in the mines till they cut about a couple of tubs ?

A.—Yes. There is not so much of the family system now as there used to be.

Q.—That would apply to Ranigunj and Jherria ?

A.—Yes. But less to Ranigunj than to Jherria. The family system is chiefly in the Ranigunj coal fields, in the older fields.

Q.—It has been suggested that we should make intensive studies of the different classes of labour in order to find out their economic conditions. We might take the miner for example and make an intensive study of his condition, his family income, indebtedness and so on. Do you think that is possible in the mining areas ?

A.—It is possible, but it would not be popular on the part of the persons whose financial status is being enquired into. It would be difficult to get at. I suppose you could always get their wages, and then you could verify them from the colliery managers' or mine owners' books.

Q.—When it comes to such a thing as the miner's wealth do you think you can obtain the information ?

A.—You can get it fairly accurately. If he owns land, he might give trouble over it. It would not be equally easy to get his income from his land, but you would get his income from mining activities exactly.

Q.—I am referring to his jewellery and other possessions.

A.—I think you can get that fairly accurately.

Q.—Would he not resent it ?

A.—Yes.

Q.—Is not a certain class of Indian miner—I am speaking of the Santali—very suspicious ?

A.—Very. I should say they are the most suspicious race in India that I have come across. For example, I have seen trouble come about without any basis whatever : the whole gang would clear out and leave the mine, without any rhyme or reason, or, at any rate, it appeared to be so.

Q.—Would it be possible to obtain returns ?

A.—Yes, I could get this from the mine owner, except in the case of persons engaged on contract.

Q.—Has he a record of all the persons who work on the mines ? He may not have recorded the earnings of individual miners.

A.—That is the main thing to get at, the individual earnings. It would be very difficult to get them.

Q.—Can you suggest anything between this most elaborate method and obtaining the average weekly earnings per person ?

A.—It would be very difficult to go further than I have gone in the table in my report.

Q.—Averages of this nature are not of much economic value. It is just like telling a man that the average depth of a stream is four feet. In parts it may be more than double that, and if he attempts to wade it he might lose his life. Averages are most misleading. We require something more than the mere figures that are published in your Report.

A.—I suppose the mine owners could supply it, but they would find it troublesome, and I am inclined to think that he would send you figures which would not be correct.

Q.—Supposing compulsory powers were employed, as in the case of the Indian Mines Act, in regard to these returns, do you think that it would lead to more or less inaccurate returns being given ?

A.—Yes, perhaps. They would fill in the returns and send them in, and who is there to say that the figures are wrong ? When the annual returns are received by me, every return is scrutinised in my office so far as the arithmetic is concerned. Then we have an officer who scrutinises it from the point of view of reasonableness. If the proportion between the mineral production and the number of persons employed is not considered to be reasonable an explanation is asked for. Similar action is taken in other matters such as value. In these elaborate returns which you are proposing it would be very difficult to do that.

Q.—It would require a considerable staff ?

A.—A very considerable staff. Finally the return goes to the Inspector who sees whether it is reasonable or not.

Q.—Would you suggest that the census of wages of mining labour should be undertaken by the Chief Inspector of Mines ?

A.—I would much rather not have it.

Q.—I take it that the larger collieries are prepared to collaborate, but it is the smaller men who find the filling up of returns rather vexatious ?

A.—They find it difficult. A very large number of mine owners are illiterate in English.

Q.—Could not the schedules be printed in the vernacular ?

A.—We have so many vernaculars, Bengali, Hindi, Gujarati.

Rai Bahadur D. N. GHOSH, Officiating Director of Statistics.

Mr. C. G. FREKE, Director-General of Commercial Intelligence, was also present.)

Oral evidence, the 15th April, 1925.

(As requested by the witness, the evidence is *not* published.)

Professor C. J. HAMILTON, M.A., Patna University.

Written Statement.

General.—In an enquiry of the kind contemplated where the field of investigation is so vast and where the available statistical data are so imperfect it would appear that the method of direct census applied to the whole area would by itself yield material that, if unchecked, could only be treated as of very doubtful validity. It is necessary to check any results so obtained by an intensive application of the method of sampling. In order that the sample areas to be investigated should be properly chosen and the information obtained correctly interpreted it is very desirable that the work should be undertaken by persons who have local knowledge as well as considerable experience of economic investigation.

In each province a committee should be constituted and entrusted with the organisation of the enquiry within its boundaries although certain matters might be omitted from its scope and entrusted to the Central Committee, as, for sample, the task of obtaining returns as to wages from the larger industrial establishments, or the census of production from large scale manufacturers. It is, of course, important that the enquiry in each province and district should work to identical schedules of information and that the whole body of material should finally be surveyed and co-ordinated by a central committee. It might be wise also for the central committee to exercise a general supervisory control over the work of each provincial committee and, if necessary, to lend experts where needed.

It will be fully agreed by all persons with much experience in economic investigation that it is necessary for an inquiry of the kind that is under contemplation that a staff of investigators of high ability should be employed to carry out the work planned by each provincial committee. A provincial committee should consist of a comparatively small number of persons a few only of whom will be able to be whole-time workers. The committees should map out the areas for investigation, organise the local investigating parties, scrutinise the returns, and as far as possible visit and actually take part in the field investigation. But in order that the work may be completed in reasonable time a considerable body of investigators will have to be employed in each province outside the members of the provincial committees. The question is how a sufficiently competent body of subordinate investigators may be obtained. For many purposes the local revenue staff will be the natural persons to employ. But while competent for certain aspects of the enquiry they are not likely to have a sufficiently high standard of scientific enquiry nor to be sufficiently trained in the theoretical and methodical difficulties to be met with to justify a course which would place the whole responsibility for the collection of data on their shoulders. Possibly two courses might be possible. The abler post-graduate and under-graduate students in Economics of the various Universities might be enlisted as supervisory and assistant local investigators. It might be possible to treat say a period of three or six months devoted to work of this kind, subject to satisfactory reports as to work done, as part of a course of study counting towards a degree. If this suggestion were adopted it would of course

be necessary to get the Universities to take the steps required in the shape of resolutions of the Senates or passage of temporary Regulations. The use of University students in Economics for this purpose would have the further advantage of setting free in whole or part the members of the teaching staff in Economics who might be required to serve on Provincial Committees or as members of the investigating agencies. The second suggestion that I would make in this connection is that if Committees are organised for the purpose of intensive investigation as many as possible of those who are enlisted for the work should be required to attend a preliminary course of instruction in the method and subject matter of the enquiry. This course should be as far as possible centralised so as to secure uniformity and to make the fullest use of those who are able to impart the necessary instruction. It would be desirable to offer a small subsistence allowance as well as travelling expenses to those attending the instructional course.

The Method of Enquiry.—(a) A Census of Production by the Central Committee.

It seems obvious that for all factory production that falls within the scope of the factory inspectors the simplest and most efficient mode of estimating the value of output is by means of a census conducted by a central census authority armed with sufficient powers from the legislature. This would give the quantity and value of the output as issued from the works at the final stage of manufacture. It is evident that such a total cannot be itself accepted as the final figure for inclusion in an estimate of national income. For that purpose it is necessary to obtain the value of the products at the point at which they become available for consumption, or, in the case of exports, when they leave the country. This implies the addition of transport costs and of retailing charges. Much information necessary for this correction could be obtained from the Railways, Steamer Companies, Doek Companies, which would show at least for broad regions the approximate destination of a large part of the produce. But the investigation into retail prices would probably be better left to enquiry made by the Provincial agencies and for which compulsory powers would not seem necessary. It would be important, however, to ascertain the size of retail stocks held at least by the larger retailers. Compulsory powers might be desirable to enable this information to be gained from the larger retailers in cities and large towns.

(b) A Census of Production by the Provincial Committees.

This will conveniently fall into the following sections :—

(i) *Agriculture and pasture.*

This cannot be made a subject for direct enquiry by means of returns issued to producers. It must be largely a matter of estimate in which the chief check will be afforded by the results of intensive sample investigations. The principal difficulties lie in the following directions :—

(a) Uncertainty as to normal yield of different crops.

(b) Uncertainty as to area cultivated,

(c) Great fluctuation from season to season in both (a) and (b).

It must be remembered that figures of normal yield applied to the area of a province or even of large districts must be subject to large

error since yield varies greatly from district to district. In the Province of Bihar and Orissa returns of cultivated area and of crop yield are admittedly collected year by year by an agency which from bottom (the Chowkidar) to top (the Agricultural Department) has paid little attention to supervising or checking the results of the returns. In many cases valuable information could be obtained by the request for returns for a short series of years from larger landlords. But each province should be left to make its own plan for revising this information and reaching totals as the conditions in each province largely vary.

(ii) *Fishery (sea and fresh-water).*

It is well known that the value of fishery is largely excluded from the calculations of those who have attempted estimates of national income in India. The value is large, but it is quite impossible to obtain direct returns for a large part of this form of production. Local enquiry will, however, enable an estimate to be made which should be translated into terms of value so far as fish is obtained other than by purchase by calculating the quantity of food which it represents as a substitute for ordinary grain and pulse. Enquiry from District Boards, Thanas, etc., would give moderately reliable figures, checked by the Collectorate staff, of the extent of fish-yielding inland waters and of the population benefited by it.

(iii) *Forests and Forest Produce.*

The present returns are very incomplete relative to the annual value under this head. In most estimates of income a greatly inadequate figure is assigned to this source of income.

(iv) *Cottage Industry.*

The produce and annual value of the labour of those employed in cottage industries is very difficult to calculate, partly because there is a large measure of joint production as between such industry and agriculture and because much cottage industry is of a repairing character rather than a branch of original manufacture. It is also difficult to assess the value of services rendered irregularly by the various members of a working family and no record of output is usually kept. The great local variation of working conditions as well as the largely unascertained extent of cottage production makes it necessary to entrust this branch of the enquiry to Provincial Committees.

(v) *Small-scale, or petty workshop production.*

Much industrial effort is given to forms of production that lie between the Factory industry of which the Factory Inspector has cognisance, and the Cottage industry in the proper sense of the term. Instances may be found in local quarries, brick fields, metal working, textile workshops, etc. These forms of enterprise could probably be traced with fair accuracy by means of economic surveys of the principal towns supplemented by information supplied by means of schedules circulated to local police, building contractors, District Boards, etc.

(c) *Wages.*

It seems evident that the collection of data on the subject of wages of employees by large firms, railways, and Government departments, including the Army, should be entrusted to the central enquiry agency.

Wage statistics are required for two main purposes. As a means of calculating the net annual income of wage earners and as showing the rise and fall of wage income from time to time. For the latter purpose any rate will suffice, daily, weekly, or monthly, provided that the rate bears an approximately constant relation to net income. For the former purpose a rate by itself is useless unless the duration of employment is also ascertained and also any supplementary sources of income such as payments in kinds, presents, or privileges.

The absence of authorities which can provide both information on the subject of wages in petty workshops or in agriculture direct this branch of the enquiry should be left to Provincial Committees. The present "Prices and Wages" returns on the subject of both rural and urban wages are most defective. It will be understood that carpenters and blacksmiths in villages are partly paid, for the most part, in kind and partly in cash. The kind of work done in return for each kind of payment is generally different. Wage rates thus represent very different things in different places. It is certainly desirable that regular returns should be made for rural areas of the wage for farm labour, harvest labour, and coolie labour. For urban areas the present return excludes coolie labour which is an important type corresponding to the ordinary unskilled labourer of England. It is almost useless giving returns in the form of a wide range; as for example 6-8 As. A single predominant figure is more useful and it is seldom that in rural areas the same kind of work will be performed by persons at considerably different wages at different times. For urban areas a return for domestic servants of different classes should be made.

The answer to question 60 in the questionnaire is certainly in the affirmative and the point is important.

The point raised in question 61 is important and difficult of solution. The only method of dealing with the problem is to form an approximate classification of different classes. There are those who migrate to high-paid employments in the cities or the mines, etc., and return to their village to spend without working. There are those who migrate to their village because of unemployment in other occupation who may be able to do some labour on the land, and there are those who migrate to the village for purpose of harvesting. Local enquiry alone can reveal the local practice in these matters.

(d) Wealth.

I should make no attempt to value the national wealth except in the form of national income. I regard the result of any such attempt as being almost useless both because the valuation is itself a matter of great difficulty (except as a mere capitalisation of income) and because it is largely unmeaning.

(e) Income.

I regard the diversity of estimates that have been put forward on the subject of national income in India as due to the following causes :-

- (a) Difference of price level at the time when the estimate was made.
- (b) Difference of definition as to what is meant by income. Thus services are sometimes included and sometimes excluded.

- (c) Difference in the method of valuation. Thus it is sometimes contended that valuation of land produce should be on the field, thus excluding all cost of transport and all marketing costs.
- (d) Difference in the completeness of the enumeration of sources of income. At least for international comparison much income must be given a money measure which in India is often obtained without exchange of money.
- (e) Crude assumptions as to the relation between agricultural and non-agricultural income.

The chief differences here indicated are not so much the result of defective statistics as of the misuse of statistics.

(f) Indebtedness.

Some general information relative to indebtedness might be obtained by circularisation of co-operative societies.

I should have no confidence in any conclusions on the subject of indebtedness that was not the result of intensive enquiry.

(g) Cost of living.

I consider the mass-unit system of measuring changes in the cost of living as wholly unsuitable in India.

House-to-house enquiries I should regard as waste of time. I consider that representative classes of the population should be defined and as large a number of typical representatives of each class should be intensively studied in order to form typical budgets. In correcting for changes in the cost of living it is not sufficient to have one price index since price indices vary very considerably as between one province and another and as between urban and rural areas. The conclusions as to cost of living drawn from family budgets may be compared and corrected by reference to calculations as to necessary expenditure, but in arguing from "necessary" expenditure, for example, as exemplified in jail dietaries, there is room for much error.

Oral evidence, the 16th April, 1925.

Chairman.—*Q.*—If an economic survey is begun by Government will it be necessary to have a stock-taking census first ?

A.—Exactly.

Q.—And thereafter will they have to maintain some establishment from year to year ?

A.—Yes.

Q.—How long do you think it would take—of course, it will depend upon the scope of the enquiry.—how long do you think it would take to have the initial stock-taking census ?

A.—As you point it out it is a matter dependent entirely on the scope of the enquiry on the one hand and the materials which are placed at your disposal. I think if the Government is prepared to provide the necessary funds and suppose you get the requisite staff, it seems to me that you can carry out the preliminary survey in the course of one year. Moreover, I feel that it is of very considerable importance that it should be carried out in one year for this reason ; in the first place,

we know that in agricultural production the output varies. If you have one part of your field surveyed under a different set of conditions to those prevailing ; when you carry on your investigation in a different part of the field, the results will not be comparable. I think the difficulties would be greatly increased if the initial survey and investigation were to last for more than one year. Might I add that what I have just said applies to the collection of data only ; the formulation and presentation may, of course, be allowed to be finished later.

Q.—At what intervals would you have a detailed census of agricultural production and industrial production ? In America they have the proverbial 5 years census of industrial production ; nowadays it is taken almost every year in Canada.

A.—I think the answer to that is, that provided you can maintain a statistical organisation, it is easier and more advantageous to have an annual revision of industrial production and agricultural production. It is most important for many reasons administrative, scientific and so forth. Moreover I think it is much easier to revise the agricultural statistics year by year, because in the natural course of things to a large extent the necessary material is always there. It is merely a problem of important and improved machinery, checking results and so forth. For an industrial survey, probably the need is less for annual revision and I think a quinquennial revision would be adequate if on grounds of expense it is desirable to economise.

Q.—Then you will not be able to get the figures for the entire production of the country as a whole—both agricultural and industrial ? May I take it that that should be one of the objects of a survey of production ?

A.—It does not seem to me that the utility of the census depends primarily upon what is called a total. It seems to me these results will be put to a series of different uses in different respects. It will be very desirable to have a periodical census of the income of the country for the purposes of taxation and so on, and I do not think that it is fundamentally important that there should be a revision year by year of the total. You do not interfere with industries in the same way as with agriculture. It is not necessary to base a policy with regard to taxation so much relative to the output of industries as it to the output of land.

Q.—In these matters do you not think that it would be safer to go by the experience of the Dominions and other countries ?

A.—You mean so far as the census of production goes ?

Q.—Yes.

A.—Well, probably they think it is much easier. Of course I do not know much about Canada. I am only guessing.

Q.—Is it not more advantageous and more paying ? It brings in more money ?

A.—I am not quite sure that I follow you.

Q.—I mean industrial production. In Canada is not industrial life more important than agricultural life ?

A.—Yes, relatively it is more important than in this country

Q.—Although they are the local products, opportunities are immense ?

A.—Oh, yes.

Q.—You are an expert ; we want your advice as to what results we can expect from an economic survey at the beginning ; what precisely do you think will be the results of a survey of that kind ; in what form are the statistics to be recorded for the information of the public and also for the guidance of the Government in its economic policy ?

A.—Firstly I think it is most important to obtain a correct figure for total agricultural production. As your questionnaire suggests, at the same time, there are many minor forms of agricultural products which I think will be most important to keep returns for comprehensively and to a minute degree of accuracy.

Prof. Burnett-Hurst.—*Q.*—For example ?

A.—For instance, minor vegetable products.

Chairman.—*Q.*—Fruit ?

A.—Yes, fish as well, so far as it is obtained from the stream. As you know some fish is gathered from the land itself after the floods have receded. You cannot possibly value that. But it does not seem to me that the substantial utility of the enquiry is much affected by minute degrees of accuracies of that sort. After that I think it will be most useful, from an administrative point of view, to determine the value of the product of the small-scale industries. In my note I have attempted a distinction between cottage industries and what I call small-scale industries. The distinction is a most important one. I think it is most important to attempt some fairly accurate estimates as to the value of the work done under these two forms. The third item of importance that I should take up is the general wages question. That probably ought to be very simple so far as suitable employment offered by the large industries is concerned where work-people are continuously employed, subject, of course to trade variations month by month and year by year. The problem is very difficult where the earning population is partly agricultural and partly industrial. At the same time it does not seem to me that the problem is a very difficult one, if you can obtain accurate information from all the employers not only as to the volume of the employment year by year or month by month but also as to the actual personnel. Supposing they employed 100 men in the course of one month—in December—and in January another 100, and in February another 100 men. They would simply say that 100 men were employed in December, 100 in January and 100 in February, but we would not know whether it is the same 100 men that were employed or three hundred men altogether were employed during that period. They should distinguish between migratory wage-earners and regular wage earners. One very important point in connection with the wage question is the collection of money wages for concerns. It is not so very important so far as wage earners are concerned in the large scale factories, but it is important so far as the wage earners in the villages are concerned. Then next in order of importance I would put the census of production of large scale industries. That does not cover the small workshop and cottage industries. In England for instance the scope of the census

of production is limited to manufacturers. A very important question is the valuation of the product. If you stop at the factory gate it is obviously not a complete census of national income. What you want to do is to value the product, as it is valued when it reaches the consumer or in the case of foreign goods, when it leaves the country. That however, necessarily implies an enquiry into the services performed by transport, selling and marketing agencies and so forth. A large number of Indian economists suggest that the proper test of valuation is in excluding all these latter items. The committee will agree I think that that would be a mistake. I have submitted in my note that an attempt to estimate the national wealth is not worth undertaking. I think statisticians agree that estimates of national wealth are subject to so many qualifications and hypotheses that a calculation is of very little use.

Q.—But has the subject not been very much to the forefront in recent after-war calculations in connection with the capital levy ?

A.—But I think you can get all that you need from an easier enquiry into income.

Q.—Will not the national wealth enable the country to measure its progress in wealth and wealth building ?

A.—Undoubtedly.

Q.—And also—this is only a rough method—we have to compare the total prosperity or the assets of one country with those of another. America has published statistics of other countries for comparison sake. Other countries are making such enquiries. Why should we not do the same ?

A.—You may do it by an extensive instead of an intensive method, but would it be wise to admit that ? Would you in an inventory of national wealth like to have the full latent national resources ?

Chairman.—*Q.*—No, only the actual wealth.

A.—Then it seems to me that by excluding what may be called social wealth, which does not correspond to any individual or state income, you have all that you want in an enquiry as to income.

Q.—Is the income for one year ?

A.—May I suggest that the only way in which you can value wealth is by capitalising the income ? That is the method adopted in estimating the national wealth by Sir Robert Giffen and I think the majority of the people proceed upon that basis. They get the figure for income and then they say the probable life is so much and they capitalise it at a certain rate.

Q.—Do you know the system adopted in Australia and America ? In Australia they do it by canvassing individuals but in America they send out representatives and take a very careful survey. So the point is that if we have to meet that, there should be some reason why we should not do so, or we should be depriving the country of the means of comparing its present condition with other countries and also comparing its present with its past and future ?

A.—Any comparison with the past will be impossible, because this will be the initial enquiry.

Q.—Yes, but should we not begin ?

A.—I agree that there are some advantages, but the difficulties of making an enquiry in this country are very great. It seems to me to be better to make no attempt than to make an attempt which would leave a very large margin of error.

Q.—In most countries they begin with mistakes and then gradually become perfect. Many things will be hazy at first, but the subsequent censuses will become more reliable ?

A.—Yes, but the form of wealth which you would take into account, which would exclude from the investigations into income, would not be of very great importance, it would consist of stocks of furniture, jewellery, house property, state property and so on.

Q.—And Municipal property ?

A.—Municipal property is easy, but when you get to some forms of communal property, it becomes very difficult to place a value upon them. Supposing you tried to put a value upon the national forests, how could you do that except by capitalising the present annual income.

Q.—In each case you would have to lay down certain rules suitable to a particular item ?

A.—Yes, what I feel is that I do not see that the enquiry would not be of interest and value even if it should be conducted successfully, but you could reach a very close approximation to the same result from your investigations into the income and from your census of production.

Q.—At all events ought we not to collect sufficient information so that the economists, statisticians and administrators might build up an estimate of wealth ?

A.—Exactly.

Q.—What other items would you include in your enquiry ?

A.—One important item which I have noticed in your questionnaire is that of the cost of living, and from the administrative standpoint, I think it is a very important item. Neither do I think it is a very difficult branch of the enquiry. The only difficulty in this connection will be to determine the distribution of the national income between different classes having different costs of living. The immediate problem is the cost of living of the different classes. I do not consider it a very difficult problem. Administratively it is very important and that as much as any other branch of the enquiry, ought to be kept regularly corrected year by year. I think I have indicated that so far as the means of correction are concerned I disagree with the use of mass statistics, which is the method employed in this country.

Q.—Assuming that the main lines of the enquiry are settled how would you proceed with the survey ?

A.—I have indicated that in the note that I have submitted.

Q.—May I mention one set of conditions ? Do you not think that it would be desirable to centralise the carrying on of all statistical work in the country ?

A.—Normal statistical agency or this particular enquiry.

Q.—The statistics of this enquiry and all the normal statistical work may form one organisation ?

A.—What, I think, is most important to have is an all-India central statistical agency.

Q.—Is that not the rule in every Dominion ?

A.—Undoubtedly. I think it is self evident but I think it is almost equally important or perhaps even more important to have a real efficient permanent branch in each province. Without the one the other is likely to be a failure.

Q.—Would you call it a statistical bureau ?

A.—The name does not matter.

Q.—Then do you want a central statistical bureau and provincial bureaux ?

A.—Yes.

Q.—Would you want a branch at the headquarters of each district ?

A.—The provincial bureau would be the collecting agency from which they would send out information. The provincial bureau would have as its first business the control over the existing methods for the collection of statistics, such as vital statistics or agriculture—cultivated areas and so on. It may be necessary to improve these local agencies and spend a certain amount of money for the upkeep. I do not think it should be laid down in minute details from headquarters. As regards the nature of that agency provincial statistical officers should be sufficiently competent persons to know what the local conditions of their provinces are and what methods are efficient. If the Government is not willing to follow his advice.....

Q.—Then change the man ?

A.—I would not change the man. If the man is competent and the Government will not have his advice the Government must be convinced that statistics are of value and a reasonable amount of money must be spent in getting the information. At present I have made a number of enquiries in my own province as to the care and interest taken by various officers engaged in it but I find complete ignorance as to the method. This matter of making returns is treated as absolutely unimportant. Therefore from the lowest to the highest there is no control no check. I have been discussing the matter with a number of Collectors and I asked them to tell me exactly the degree of control exercised in their own districts. They do not know even the basis of control and they are the officers who are supposed to revise the figures before they go to the office for tabulation. Then having got your provincial statistical agency, and having given it a certain amount of freedom as to the precise machinery and method to be adopted in each province ; you will probably have to have in each district an officer of the standing of a sub-divisional officer, who should be chosen on account of his ability and statistical qualifications. He ought probably to be trained before being appointed to that position, and he ought to be in charge of the statistical work in the sub-division. You cannot expect the central statistical bureau exercise anything like control over the number of districts that will be contained in the organisation.

Q.—Would you have one in every District Headquarters ?

A.—Yes, I would have a Sub-divisional officer. I would certainly have a statistical officer in each district. That was definitely contemplated by the Famine Commission when they made their recommendations many years ago. One has to realise that statistics are worthless unless they are within a certain degree of accuracy.

Q.—Did the Famine Commission recommend it ?

A.—Yes, with regard to the collection and presentation of statistics apart from any enquiry of this kind I think it is the duty of the Government to provide certain statistical information which they are capable of providing with little difficulty, and other people are not. I would take one instance. At the present time the central revenues and the provincial revenues are presented quite distinctly. There is no way by which an economist can obtain information as to provincial revenues, and the expenditure for all provinces without going through a laborious process of compilation from thick volumes. I think a small annual publication giving in a condensed form the results of the statistics of taxation and statistics of revenue and expenditure would be necessary for public information. At present there is nothing from which a member of the Legislative Assembly can gather this information. This would be work for the Statistical Bureau.

Q.—Reviewing the work of the year ?

A.—At present the publication published by Professor Rushbrook Williams is useless for any statistical purpose. It is a sort of bright journalistic comment, but for serious purposes it is of no use ?

Q.—Whom would you appoint to issue such a review ? The Statistical officers disclaim any responsibility for departmental operations.

A.—I think such an annual return as I have suggested would be very well done by the central statistical bureau.

Prof. Burnett-Hurst.—*Q.*—Would you suggest that a commission of three or four persons consisting of commercial and public men should review the publications and the data collected by the statistics departments both central and provincial ?

A.—That seems to me to be a form of work which could be very much more simply done by one competent person placed on special duty with permission, if necessary, to tour. That does not seem to be facilitated by having a committee.

Q.—Would you approve of having a committee or a commission of persons to review the facts that the Statistical Department collects ?

A.—I understand you want a permanent committee. No, on the whole I should be inclined to think that such a committee would not be desirable.

Q.—It would place the head of the Statistical Department in a very difficult position ?

A.—Quite so. If the head of the Statistical Department is, as he obviously ought to be, a thoroughly competent person, the committee could do no more than take his advice. You could not spend a long time in re-investigating the figures and so forth. If the statistical officer is doing his work properly, he is in touch with people who are able to criticise,

and these people will know more than the three. He will get ideas and suggestions from all over the field and will be constantly considering and weighing how it should be done in the light of such suggestions. To have a permanent commission which would stamp everything done by the statistical officer would, I think, be a source of delay and serious inconvenience to the statistical officer. After all, prompt publication is very necessary in these matters.

Chairman.—*Q.*—Would you advocate the publication of a pamphlet such as you suggested by the Minister concerned, or the administrative officer concerned, after the statistics are compiled by the department and handed over to him ?

A.—Do you mean the sort of pamphlet published by each Department of its work for the year, a sort of administration report ?

Q.—No, only in respect of economic matters. To review or issue a small pamphlet, just to clothe the skeleton with some flesh and blood ?

A.—If you really had good statistical information, as I assume you will have as a result of this reform, would it not be better to present the economic life of your province, not department by department, but as a whole ?

Q.—That should be done by the Minister in charge ?

A.—The Minister should be responsible, but he would not be the person who would compile it.

Prof. Burnett-Hurst.—*Q.*—I think the Chairman's question is this. Are you of opinion that the facts as collected by the head of the statistical bureau should be reviewed in the form of a pamphlet by the Minister under whose control the statistical officer works ?

Mr. Kaul.—I think it would clear up matters if we understood what is done now. Every head of a department in the province collects certain statistics. These statistics are supplied to the statistical department but are reviewed by the Minister in charge at the end of the year. I suppose that review together with the statistics would go into this pamphlet.

Chairman.—Yes.

A.—The present practice is that each department, say the Veterinary Department or the Irrigation Department or the Co-operative Department publishes its annual administration report and in that report appear certain statistics dealing with that branch of activity. My method would be to take the actual control of the collection of all these statistics and the formulation of all these statistics out of the hands of each separate department and centralize it in the hands of the central statistical bureau. That I think is of vital importance. I think the practice is a good one, which has grown up in recent years, to publish a synthesis to these different administration reports. We have in Bihar what is called " Bihar in 1923-24 ". It is something like Professor Rushbrook Williams' book. It serves a useful purpose, but the purpose would be ten times greater if you could get valuable and more reliable statistical information.

Mr. Kaul.—*Q.*—Would you try to improve the method of collecting statistics without interfering with the departments concerned ?

A.—I would take out of the hands of each separate department the function of controlling the compilation of these statistics. For instance, I would take out of the hands of the Agricultural Department this responsibility. There would have to be a great deal of correspondence between the two, but I think the statistical work in the province should be centralized.

Q.—How would it be with regard to agricultural statistics. The Revenue or Agricultural Departments would like to have all the statistics collected so as to review the position of their departments ?

A.—No.

Q.—Would you interfere with the submission of the statistics through the proper channel ?

A.—Yes.

Q.—Would you simply arrange for the collection of statistics and improve the methods of supervision and collection so that the materials collected should be accurate ?

A.—Yes, that is the function of the Statistical Department.

Q.—Statistics would come to the Minister concerned and he would be in a position to review the statistics as he does now ?

A.—Certainly.

Chairman.—Q.—Will you tell us the method of collecting this information—Primary information, primary data in the villages ? How would you proceed with the tests that you have yourself mentioned ?

A.—With regard to intensive local enquiries, in the first place, by far the most important point to be insisted upon is that this work is difficult and can only be carried out when the persons making the enquiries are to some extent not only intelligent, capable of judging quickly, but also persons who are to some extent trained in the methods that are essential. I think the first step is to gather a staff of persons of a sufficient degree of ability and train them. I think I have suggested that it might be extremely helpful if all the universities in the country were asked to spare for a period of six months a considerable number of boys, graduates and under-graduate students. I think it would be very attractive to them and it would be quite justifiable if that period could be treated as a course leading to a degree. Of course they should be relieved of any expenditure, but I think they should be paid only subsistence allowances. It may be treated as a course of their university career. Before sending them to the fields I would have them assembled in one place and put through a brief course where they could get the necessary instructions and ideas and what is very important, the main lines of enquiry should be explained so that there should be uniformity in judgment as well as in method. You may have the same method but a very different result if the judgment is different. The second point with regard to the method of enquiry which is important is that I would not make any direct or responsible use of any bodies that are not constituted *ad hoc* for the purposes of the enquiry. I would not go to the Municipalities or District Boards or Co-operative Societies and make them finally responsible for the collection of the information or the tabulation of statistics dealing with each branch of the enquiry.

Q.—Supposing written instructions are given ?

A.—It does not matter. You can never tell how far they have been followed, unless you do the whole of the work yourself. I think for large cities you may have separate local committees constituted just as you may have provincial committees.

Q.—Would you have advisory committees in the villages ?

A.—No. First of all, starting from the top you want a general advisory committee whose ultimate function will be the presentation of the entire results of the enquiry, who will co-ordinate and keep a constant check on the provincial enquiries. They must do that in order to secure a reasonable amount of uniformity of method and for the purpose of removing doubts. Beneath this central committee, in whose charge should be placed the census of production and wages census, so far as the wages of large scale industries are concerned there will be Provincial committees. It seems to me that the Provincial committees I have suggested cannot be constituted of whole-time officers. You will want to get the best and promptest information from persons with wide experience of the life of the provinces or method of control, administration and management and from experienced settlement officers or something of that sort. On this committee you will have your statistical members who will be Directors of the provincial survey. I think you will want a Director of statistical survey in each province who will be a member of the provincial committee. He will be a person whose duty it will be to organise local investigation. The method of organising these investigations will be first to choose the precise village or villages you wish to investigate. That is a very important point. All that I would wish to point out is that you should not lay down hard and fast rules as to how many villages shall be investigated in each political area. You might get some areas which will be almost entirely uniform, where one or two typical enquiries will be all you need. You may have other areas where you may want more investigation. Do not say you want seven or eight or nine villages in each political or administrative division. Leave that very considerably to the discretion of your provincial committee.

Q.—Will the method be prescribed by the central committee ?

A.—Yes. Then having done that they would get to work in the fields. While I would not have a village committee in the sense of a body empowered to determine the method of organisation and investigation, I think it is most important to enlist local assistance.

Q.—An advisory committee ?

A.—I would call it a local investigation party. You may call it a party or committee or whatever you like. It is most important to enlist local interest and support. In the first place the good-will of the local Malik or Zamindar may be of the greatest importance in getting information from the peasants. It is most important to get this co-operation, but I would not form a local committee in that sense and entrust them with the organisation of the work. I think you must have for that purpose a number of competent persons who will be in charge of village enquiries and who will work in very close touch with the central or provincial statistical director. I would not put any faith whatever in merely house-to-house questioning, because after all the matters that you have to investigate are on these lines. I do not know how far the Committee

proposes to take up the question of health and things of that kind. I do not know that it is included in the scope of this committee. The result of a merely house-to-house census would be so unreliable that I think it would be a waste of time to undertake that.

Q.—What is your view as to the finances of this central bureau. Should it be financed by the Central Government or by the Provincial Government ?

A.—I think it might very reasonably be financed by the Provincial Governments so far as the expenses involved in a purely provincial enquiry are concerned.

Prof. Burnett-Hurst.—*Q.*—It has been suggested that if the Provinces finance the bureau, they would like to have absolute control over the methods of enquiry, and there may be no uniformity in the various Provinces. If uniformity was required and at the same time the central authority had to arrange for the collection of the information, then the provincial bureau should be under the complete authority of the Central Government ?

A.—I think that is important. When I said that the finances should be borne by the Provinces, I was thinking of it from the point of view of the collection of this information in each Province and the benefit to them ; but from the point of view of uniformity of statistics there are many advantages on the side of central finance.

Q.—Do you think there would be a justification in asking the Central Government to finance the Provincial expenses ?

A.—Yes, I think so.

Chairman.—*Q.*—What do you think ought to be the position of the central bureau ?

A.—I am not quite sure whether I understand this. Is the central bureau for the purposes of this enquiry or is it a permanent organisation ?

Q.—A permanent organisation. The final work to be done by them would be this enquiry ?

A.—I think the nature of the central bureau would be very much like that of the Department of Statistics as it has hitherto been, provided that you can be confident of two things. The failure of the Statistical Department in India hitherto has arisen largely because the Department has been overweighted with the obligation of publishing voluminous returns of very little use which have added to the total expenses and because in the second place the Government of India, except where Statistical returns are of immediate importance for administrative purposes, have very little belief or interest in the statistics. Therefore, I think a sufficiently free hand has not been given to the Statistical Department and since the Incheape Committee, the retrenchments upon the collection and formulation of statistics have been disastrous. It seems to me at this stage it would be impossible to say how many expert statisticians you would require in the central bureau.

Mr. Kaul.—*Q.*—Do you think that there might be more than one ?

A.—I think you would get the sort of thing that you get in the Board of Trade. As time has gone on the different branches of statistical enquiry have become more and more specialised. One department

specialises in the collection and presentation, another in the cost of living, another department in the statistics of Foreign Trade, another department specialises with regard to employment, and so on. In other words you would certainly departmentalise.

Q.—Do you think that we should have a certain number of statisticians in charge of the various departments to form the committee which is proposed, to be presided over by the Director-General of Statistics, who could be mainly responsible for the administrative work of the department ?

A.—Yes.

Q.—What sort of constitution would you propose for the provincial committee ?

A.—I think it would be very helpful in each province to get a committee, the functions of which should be partly or largely advisory, because on these committees you will have members who can give you very valuable aid from their knowledge of the provinces and their large experience as Settlement officers. At the same time the committee would carry weight with the Government, if it made demands for further expenditure. Individual statistical officers will not carry sufficient weight.

Q.—Would you have on this Committee Provincial experts, for example, heads of departments, a certain number of non-officials who take special interest in these committees and one whole-time Director or Superintendent of Statistics as the executive officer of the committee responsible for the whole administration ?

A.—Yes, and I think that is likely to give the best results. I would not leave the statistical officer high and dry without this committee.

Q.—As regards the Census of Production you said it should be taken by the central committee. I presume you mean the provincial authorities ?

A.—No, I think the simplest way of taking the Census of Production, always assuming that it is merely concerned with the production of large-scale industries (I have already excluded agricultural products and cottage industries)—would be by means of schedules issued by the central authorities. I think it would be a waste of time having then to go through the local officers.

Q.—Have you not to verify them in many cases ?

A.—Where verification is required a reference to the Factory Inspector would be necessary.

Q.—Then would you have to make use of the provincial authorities ?

A.—Yes. I do not think that the normal channel should be the provincial officer, because it would be a waste of time.

Q.—I remember when I carried out the first Census of Industries I found that the factory managers could not fill up the schedules, and I had to send my men to every factory to get the schedules filled up. Do you not think that the same difficulty might arise here ?

A.—The method adopted in the Census of Production in England is this. I was appointed as Assistant Census Officer. I remember one of the things that I had to do was to supervise the person who had to go between the Census Officer and a particular factory. The managers did not know how to fill up their schedules. Undoubtedly a local agency would be necessary there.

Q.—Would it not be more convenient that the Provincial authorities should be made responsible ordinarily for having these schedules filled and collected and should send them to the central authorities rather than that they should be sent direct to the central authorities ?

A.—I suppose in practice it boils down to this. That it depends upon the percentage of factories that you can rely upon for information without the aid of an enumerator, and the percentage with the aid of an enumerator. If it is a large percentage, then the whole thing may be sent straight away to the provinces direct. If it is a small percentage it is a waste of time.

Q.—Do you always begin by assuming that there will be a large percentage of factories which cannot fill up schedules ?

A.—Supposing you take the jute industry, do you think that a large number of jute mill managers will not be able to do it ? No doubt the schedules will be received by the head office and I think they can supply the information without much instructions.

Q.—Jute is such a localised industry that the information is all collected in one province, so that it would be just as well to have a local man collecting it. Where you come across difficulties would you advise that the Provincial authorities be utilised for the collection of schedules until people are trained to it ?

A.—It would have a reaction in this way. It would make it more important to do what you suggest, that is, central financing, because your local committees would have in some cases to be much larger than they otherwise would be. It would be important to have sufficient funds placed at their disposal instead of relying upon what the provinces think they might spend.

Prof. Burnett-Hurst.—*Q.*—Would there not be a certain amount of hesitation on the part of employers to give information to Provincial organisations in a census of production whereas they would be more prepared to reveal it to a central body ? They might think there would be more leakage with provincial organisations than if the returns were sent direct to a central body ?

A.—I think there would possibly be some feeling in that direction, but I think the real way out of the difficulty is that the kind of information which they are going to give would not be seriously injurious even if it was to leak out.

Mr. Kaul.—*Q.*—Then would you exclude that kind of information ?

A.—Yes.

Q.—Ordinarily, can we provide for this contingency by allowing a manager of a factory to submit his report direct if he wanted to ?

A.—That I think was done by the Census of Production in England. When Mr. David Sillos was Census Officer I think I am almost sure that this method was adopted.

Prof. Burnett-Hurst.—*Q.*—Would you kindly refer to Question 36 of the Questionnaire which indicates the nature of the information which we have suggested may be obtained in a Census of Production, that is to say, the capital invested, the quantity and value of raw materials, wages, etc. ?

A.—Whether the capital invested is necessary, depends upon whether you are going in for a census of wealth. For income it is not necessary.

Q.—Except to ascertain the amount which should be placed against depreciation and interest ?

A.—When you refer to capital invested, do you mean share capital, or returns as to Bank overdrafts ? It is very difficult to take stock of Bank overdrafts. It does not give you what you want. If you have a share capital, and it is fixed capital, the figure is very misleading.

Q.—Would you in addition have “ Bank overdrafts ” ?

A.—I do not think you would get it. You would have to exclude it.

Q.—How would you ascertain the net production ?

A.—You can either exclude it altogether or take it altogether. If you exclude depreciation and interest, you cannot get the true value. Unless you can get information as to borrowed capital and as to their practice with regard to depreciation and reserve funds, you cannot get the desired figure in regard to each business.

Q.—Do you think it would be possible to secure it ?

A.—What the Census of Production in England did was this, they asked “ How much do you spend on raw materials and wages ? ”, and then “ What is your total receipts on account of goods sold ? ”

Q.—That is not the net value of the products ?

A.—No.

Mr. Kaul.—*Q.*—It gives you the added value ?

A.—Yes.

Q.—As regards the yields you say “ It must be remembered that figures of normal yield applied to the area of a province or even of large districts must be subject to large error since yield varies greatly from district to district ”. I suppose that you are aware that the yields are usually fixed on small homogeneous tracts—if we adhere to these yields, we ought to get very correct figures of production ?

A.—That I think is the correct calculation for the areas which have been recently surveyed for revenue purposes or where you have a complete and continuous record, but in provinces where this is wanting, you are in difficulties.

Q.—Can you suggest any remedies for the difficulties you point out in your own province ? How would you arrange to get reliable data for arriving at agricultural production in your province ? It is all very well suggesting that we should try to obtain returns from the different landlords, but would that be very helpful ?

A.—In Bihar, in many parts the rents are paid in kind. The landlords’ papers, if he will allow you to consult them, will show the actual yield.

Q.—The difficulty is that the landlord will not allow you to see his papers ?

A.—Then you must rely upon your own methods of sampling. You cannot be accurate up to 10 places of decimals. It is exactly the same as crop-cutting experiments. You cannot cut the whole area.

Q.—Would you take a surveyed area ? I suppose all your districts have been surveyed ?

A.—Yes. I think all have been surveyed but I do not know.

Q.—Where you cannot obtain information would you apply the sampling method and obtain the average ?

A.—Yes.

Q.—What method would you employ for ascertaining the production of cottage industries ?

A.—I think that again must be the result of the method of sampling.

Q.—That is to say you would have the Census occupational figures and multiply them by the average production per head ascertained by sampling ?

A.—Yes, you would have to determine upon a given village as the type and see to what extent time is spent in agricultural occupations and to what extent it is spent in cottage industries. For example, you may have many cases where people will make a few ornaments used at wedding seasons in the year. For the first ten months of a year they will be agriculturists and for the other two months makers of these ornaments ; and they earn a substantial sum during that time. Local knowledge will enable you to give an approximate result of their earnings from their labour and from the time devoted to cottage industries.

Q.—You would first of all find out the number of workers, then find out from a general enquiry the time each of them spent on that industry and then by employing the method of sampling you would ascertain the amount ?

A.—I would ascertain the quantities of raw materials used, the prices and what they get generally as a return. Then you can make an estimate of the value of the products of that village.

Q.—What classes would you suggest in connection with ascertaining the cost of living ?

A.—I think it is a question which is very difficult to answer comprehensively for the whole of India. I think probably it would be necessary to have about seven or eight classes. I think I would probably divide the agricultural population into three classes.

Q.—Have you seen the suggestion we have made in the Questionnaire, in Question No. 2 and Appendix A ?

A.—I should not agree with that. It does not seem to be of any use. Merely the source of income does not bear upon the amount of income when we are classifying the population with regard to cost of living. The relevant circumstance is the total amount of income.

Q.—Can you not sub-classify according to income ?

A.—Then you are complicating this unnecessarily.

Q.—For instance, you have a rent-payer who belongs to a class which is generally supposed to live from hand to mouth, or a farm servant or field labourer. Are these not more or less recognised classes ?

A.—What I was going to suggest is that you want what is called the agricultural labourer, that is one class, even there, there may be gradations, but still take them as one class. Then there is the poorer class of cultivator a man with some sort of occupancy rights. Then you take the large class of cultivator, who is a rent payer, but very often a heavily indebted man.

Q.—Is a man with an occupancy right better off than a man with no occupancy rights ?

A.—In most agricultural districts you would divide the cultivators in this way. 70 per cent. the poor class who are struggling and 30 per cent. would be a prosperous or fairly prosperous body of farmers. They would have a different standard of living. They would be rent payers and they may be also rent receivers. I would try to classify them according to their economic incomes. Then beyond that you get the trading class. It is very difficult to say what their income is ; some may be rich and some may be poor. I think the trading class have a different standard of living to the professional class. The basis of consumption is different. I would have three agricultural classes, then I would have the trading classes, the retail petty trader ; I would have the professional class and the rest I would put in by various grades of wealth.

Q.—Would you grade them by income ?

A.—Yes.

Q.—Would you try to draw the poverty line somewhere ?

A.—I think it is an interesting calculation to attempt to calculate what is the minimum of subsistence, but not a very difficult one. It varies in different parts of India, and naturally the prices vary and the method of consumption too.

Prof. Burnett-Hurst.—*Q.*—It varies with different classes, too ?

A.—Yes, but you would hardly have a poverty line for doctors and lawyers. It would be rather a development of the idea.

Chairman.—*Q.*—Would it not be desirable to collect primary data from each householder and designate the household by the leading bread-winner, so that you will have every kind of occupation and you can find out the economic conditions of that class ? Would not that be more systematic ?

A.—It seems to me that the occupation of the head of the house is by itself a very imperfect clue.

Q.—It is, but this is the best we can get ?

A.—Where you have specialised occupations very much more developed, it is easier. When you say in England that a man is a rivetter, you know what his income is. In a country like America the occupation is not so clearly stabilised and neither are they so clearly defined. They have to take what they get.

Prof. Burnett-Hurst.—*Q.*—It has been suggested by a witness that intensive enquiries should be carried out in villages and information collected from individual households with regard to their economic condition. Do you happen to be aware of any such enquiries having been carried out by official agency in Great Britain or in other European countries, in the Dominions, or in the United States ? I am referring to a detailed enquiry with regard to income, wealth and indebtedness of the individuals comprising a household. Have any such enquiries been made ?

A.—So far as I know, there has been no such enquiry.

Q.—Social workers such as Rowntree, Booth and Bowley have conducted enquiries in England. Similar enquiries have been carried out

by social workers in the United States. But nowhere has an official agency been employed.

A.—I am not quite sure as to what your question implies. I do not think Booth, Rowntree or Bowley have ever made investigations which have been based purely on house-to-house questioning.

Q.—They have.

A.—Unchecked, merely to take whatever anybody likes to tell you ?

Q.—Not unchecked.

A.—I thought your whole point was the acceptance of the information unverified or unchecked.

Q.—House-to-house investigations supplemented by additional information ?

A.—Your point is whether in England, such enquiries were made where the agency was purely official. So far as I know, there were none.

Q.—You are not aware of any ?

A.—No.

Q.—I understand the suggestion which you make in your reply to the Questionnaire apparently means a general survey comprising improved returns of agricultural production, returns of production of small-scale industries, a general wage census, a census of production of large-scale industries, and possibly enquiries into the cost of living ?

A.—Certainly into the cost of living. I should not like that there should be any doubt as to that.

Q.—Would that comprise your general economic survey ?

A.—I do not intend to exclude the question of indebtedness. I think the difficulties of estimating total indebtedness are very great. It is fairly easy to estimate, within some reasonable margin, what may be called fixed debts. That information is embodied in documents like mortgages on land and so on. It is very difficult to obtain accurate information as to unsecured debts, short period borrowings. However, I think a great deal of information is already available on that subject. What I was thinking of when I made that remark is that you have got to cut your garment according to your cloth and it depends largely upon the money granted.

Q.—Do you think it is possible to carry on concurrently a census of wages, a census of production of large and small-scale industries and endeavour at the same time to improve the statistics of agricultural production ?

A.—Yes. I see no difficulty.

Q.—Provided you get the staff ?

A.—One has always to remember that one of the greatest difficulties of this enquiry will be the marshalling of a sufficient number of investigators of the required calibre. How many people will prove to be available, I cannot say but if you make use primarily of our graduates and undergraduates who are willing to serve, that will give you a good many hundreds of persons who are available.

Q.—That is for the rank and file ?

A.—They are not quite the rank and file.

Q.—Would they be supervisors ?

A.—No, they are not supervisors. I do not think they should supervise. Yes, they are the rank and file. They are field officers under control, never to be put in charge, unless specially selected.

Q.—What about trained statisticians, do you think you can procure a sufficient supply in India ?

A.—For the purpose of the provincial enquiry I do not think trained statisticians, in the highest sense of the word, are necessary, I think it is necessary to have one or two trained statisticians, certainly in the census committee, where their expert knowledge in the handling of statistics will enable them to detect errors and refer the matter back for enquiry. The organisation of the provincial enquiries depends upon experience in economic investigations and training in economic statistics and economic methods and familiarity with it together with local knowledge.

Q.—That is assuming, of course, that the central organisation controls the provincial committee ?

A.—That I have said is important.

Q.—Would you regard that as essential ?

A.—Yes. I have already said that you must leave the provinces with a considerable degree of liberty as to the number of places which they will investigate, the precise method of formulating the questionnaire, or whatever you make as the basis, because you will get differences in local conditions which must be to some extent allowed for.

Q.—I agree. But are you going to permit a man who is an economist but not a trained statistician to approve or alter the questionnaire ? Surely the questionnaire is the basis of the whole enquiry ?

A.—I think the questionnaire might certainly be standardised by the central body. I think it is most important that the central body should have control over the provincial agencies ; I feel that the central body must give the local agency considerable discretion as to the number of samples which it takes in a particular area, details of the situation of the villages themselves and so on. It is no good making an arbitrary rule that you must have village committees appointed in every place. You must have a reasonable amount of elasticity.

Q.—To return to the subject of the organisation of the provincial departments, if the Central Government is financing should not the Central Government have the right of appointing the director of the provincial bureau ?

A.—You are now thinking of a permanent statistical organisation, and not of this particular enquiry.

Q.—Is it your idea that you should have two bodies constituted one for the initial economic survey and the other for the periodical collection of statistics or is it your opinion that there should be one controlling organisation ?

A.—I think obviously the first consideration is the organisation of this initial enquiry, and for that purpose I think it is right that there should be centralised provision for financial control and centralised power of

appointment ; but when you come to the maintenance of permanent statistical machinery, I think it is highly improbable that you will be able even if it is desirable to maintain the system of central appointment. After all the provincial statistical department has got to work with a committee. It has to be an agency which is recognised as acceptable to the local authorities.

Q.—If you refer to our terms of reference, you will notice that it practically consists of two parts, the means of supplementing the existing data and the method of carrying out an economic survey. The means of supplementing the existing data would probably require the establishment of some permanent organisation for the collection of economic statistics ?

A.—Certainly.

Q.—Would you utilise that organisation for carrying out the economic survey or would you establish a special organisation for making such a survey ?

A.—It appears that you are rather at the beginning of a new epoch and you must make this enquiry the starting point. You may have to set up a special machinery for this particular enquiry, if it is desirable. I think the committee will agree with this that it will be a waste of time to have only one investigation and stop there and never carry it on. Obviously a permanent organisation is implied. I should not start at the present moment by attempting to set up a permanent statistical organisation. I think you might start with an organisation *ad hoc* for this enquiry. Then that might be modified in the light of experience but out of it would come a permanent organisation.

Q.—Your idea is that a permanent organisation should develop from the organisation for a general economic survey ?

A.—Yes.

Q.—Would you suggest that in addition to the economic survey you should have intensive village studies on the lines of those conducted by Dr. Mann, Dr. Lucas and others ?

A.—As a part of this enquiry ?

Q.—As a part of the economic survey. Do you suggest that they should be two sections, extensive and intensive ?

A.—I have already suggested that. By intensive I meant an intensive method of sampling for the purpose of getting more or less restricted information and material. A village survey such as that conducted by Dr. Mann goes into a large number of other things. I think it would be making an unnecessary demand on the available staff to try to complicate and extend the scheme in that way.

Q.—Would your intensive village study relate to production ?

A.—Limited to the points here suggested.

Q.—Taking a village as a unit as distinct from the household ?

A.—I would take the village as a unit, but as households make up the villages, I should not leave out any household.

Q.—Do I understand that you do not desire a house-to-house enquiry ?

A.—I should put no confidence whatever in it. Supposing you sent a non-expert in economic investigation and you gave him a table of questions

and he went from house-to-house and asked " How much jewellery have you got " ? and so on. I put no confidence in that. The village enquiry must be superintended by some one who knows what he is doing and who can weigh evidence.

Q.—Would you still go to the households ?

A.—Certainly, you must go to your people. I meant to draw a contrast between what I call intensive and extensive. The mere act of running to every house in India asking them certain questions is what I call extensive enquiry.

Q.—Do you suggest that the provincial statistical organisation should select typical villages by random sampling ?

A.—Certainly not by random sampling. Supposing you have a thousand villages in this area and they are distributed equally or unequally, and I take ten out of a thousand, that would give you very imperfect results. It would be very helpful if you knew what I call density. Supposing you have an actual area where the conditions are very uniform and you have other areas which are distinctly different, if you take one here and one there, the result would be misleading.

Q.—If you divided a province into tracts within which the economic conditions are uniform, would you then select villages within these tracts by a system of random sampling ?

A.—I would not tie myself down. I suppose it would come to random sampling. You must be guided to some extent by questions of all sorts. For instance, there is the question of accessibility.

Q.—If you define your locality relative to certain economic conditions, then the selection of typical villages is open to the objection that the villages may not be typical in other characteristics ?

A.—After you take an area and try to establish its economic character from typical conditions ; you have so many things which you have to take into account. First of all, you have to know the local conditions. If you have a man who has a local knowledge of the Punjab, he cannot be of much use in Bihar. You may get to districts, side by side, which are entirely different. One may be low rented land with fairly fertile land but the conditions of the peasantry may be quite different to those of the peasantry of the next place, where the rents may be rather high and the economic conditions may be quite different.

Q.—That is why it was suggested that intensive studies should be carried out by local organisations ?

A.—That is why I said that the director of the local enquiry need not be primarily a highly trained statistician. But he must be an expert in economic matters and he should have at his command persons with a high degree of local knowledge. There is no use of putting a man from some other place in complete charge of the provincial enquiry or a man from the Punjab to do the work, if he is going to work in Bihar.

Q.—You mentioned that the poverty line should be determined in regard to certain classes ?

A.—I think it would be useful.

Q.—Would you suggest that this should be undertaken by an official agency ?

A.—I was regarding it as a part of this enquiry. Anybody who knows anything about the subject knows that you cannot do it with any precision in regard to pounds, shillings and pence or rupees, annas and pies. You would have to remember that you would get a very large number of wild and unsubstantiated statements offered by private committees or individuals in those committees. The estimates will be authoritative and you will have at your command the best data available at the moment. I think it would be useful if the committee included in its report some expression of its judgment as to some of the relations of income to the minimum of subsistence. That it should lay down some positive poverty line which is regarded as a high water mark is absolutely obviously desirable.

Q.—But there is a section of the public who if they see any figures in official publications regard them as the last word ?

A.—It is better that it should be a fairly accurate last word, than that there should be a number of inaccurate last words.

Q.—Do you think an official organisation should be employed ?

A.—I think it would do more good than harm. At the present moment in economic literature there are numbers of statistics which are being made use of but which are very wide of the mark and it would be distinctly good to have a more correct and analytical statement on the subject.

Q.—You have suggested a central organisation, which you consider in the course of time might be developed on the lines of the Board of Trade. Would it not be a good plan to have an officer between the Statistical Department and the special departments with which they are concerned, for instance, the Agricultural Department— a member of the Department of Agriculture who has been accustomed to deal with Agricultural Statistics ?

A.—Has he been accustomed to do this ?

Q.—Certain members have been so accustomed. There are some members of the Agricultural Department who have taken a considerable amount of interest in agricultural statistics. The same thing may be said of other departments, for example, the Department of Public Health. Would you suggest a system of liaison officers between the department ?

A.—I do not know. It seems to me that the Director of Statistics, if he knows his business, is in constant communication with all those departments and I think he is quite capable of being his own liaison officer.

Q.—He does not specialise in half a dozen subjects ?

A.—That is my direct answer to your question. I say that it would be useless. If we are not going into details, it would be a waste of time and money. It would be a hopeless waste of time to have any liaison officer at all.

Q.—I am merely seeking your opinion ?

A.—The point I should like to make clear is that I am not condemning what I have already approved. Suppose you have your Director of Agriculture. He will have his Agricultural people to work in the districts, who will be people from whom you are getting information, and it may be necessary to have a person detailed off to take special charge of the

statistical work in that particular field. If this is what you mean by a liaison officer, I agree. This is a specialised man dealing in specialised work in a particular field. That I think is essential. But if you want a man going between the Director of Agriculture and the Director of Statistics and you want him to be running between these two, it seems to me to be impossible.

Q.—We are here seeking the opinion of witnesses and then we shall form our own opinions. We are practically in a position of a Judicial Committee, to sift the suggestions that have been made with regard to the working of the central statistical organisation ?

A.—You mean in India or the provinces ?

Q.—In India. You have different branches, each dealing with special subjects, for instance, agriculture, prices, wages, mineral production, etc. Do you think that each branch should be under the control of a specialist, whether a person of the department specialise in the subject or a person is deputed by, say, the Agricultural Department so serve on the staff of the statistical organisation and to act as a liaison officer ?

A.—It does not seem to be necessary as a part, if I understand your proposal, of the normal organisation.

Q.—Do you disapprove of the suggestions ?

A.—I do not disapprove of it at all, but I am not sure that I have grasped the nature of the suggestion. I am not sure in what he is to be a specialist, agriculture or statistics.

Q.—He will be a member of the Agricultural Department, who has been accustomed to dealing with agricultural statistics ?

A.—I disagree with this. The right thing is to have at the head of the Department a Statistician, and that is the dominant consideration.

Q.—His qualification should be primarily that of a trained Statistician and then he could specialise in a particular branch of statistics. Do you approve of that ?

A.—Yes.

Written Statement.

1. It appears to me that there are two principal lines of enquiry which may be followed in carrying out a general economic survey such as that proposed.

2. The first is extensive in its scope, and aims at framing as comprehensive an estimate as possible of the total net value of the raw produce, manufactures and services of all kinds which make up the annual (money) income of British India.

3. Here we must rely, for by far the most important part of our material, on the existing agencies for the collection of statistics of agricultural outturn; and the problem is mainly one of improving the methods employed so as to render these annual statistics more reliable and more adequate. (To facilitate comparison with Mr. Datta's results, I would have this information compiled, for the purpose of the proposed economic survey, with reference to his economic circles—but including Burma.)

4. "Census of production" methods (aiming at a valuation of net output—*i.e.*, gross output less cost of materials used) may be applied successfully, in my opinion, not only to inspected mines and factories, but also to the great transport industry, *viz.*, railways. With this census of production might usefully be combined a census of wages. In the drawing up of both sets of census forms, the assistance of an advisory committee for each of the principal industries concerned should be sought; but it will, no doubt, be necessary to take legislative powers to make the submission of returns compulsory. In giving them a statutory character, it would be well to make both the all-India census of production and the census of wages, which it is suggested should be combined with it, quinquennial, since much of the value of such returns lies in the index which they afford of wage-movements and industrial development. The census of production returns should include particulars of the number of persons employed, and sufficient details as to the character and value of the plant to allow of an accurate estimate of the annual depreciation involved.

5. In addition, the Forest Departments may be asked to furnish as comprehensive (annual) returns as possible of the total net value of India's forest produce of all kinds.

6. I am extremely doubtful of the success of any attempt to collect all-India statistics of the net output of the very numerous 'cottage' industries, mines and quarries not coming under the Indian Mines Act, or fisheries. A special agency, and a very costly one, would have to be created for the purpose. Here, I think, it will be necessary to rely on the results of less ambitious (but carefully planned and periodical) provincial enquiries.

7. The second principal line of enquiry, as it appears to me, must be intensive in its scope, its objective being to frame an estimate of the economic condition (*i.e.*, income related to the cost of living) of the various classes of the population. For this it is necessary (1) to define these various classes; (2) to ascertain, as nearly as may be, their relative numeri-

cal importance; and (3) by taking a sufficient *sample* of each, and applying the "family budget" method, to obtain the necessary data for an estimate of their economic condition. An intensive survey of this kind may be made, I suggest, once every ten years.

8. The population may, first of all, be divided into urban and rural. For the towns, the only possible agency for conducting an intensive enquiry of the kind which is contemplated (apart from one created *ad hoc*) appears to me to be the municipalities; and I would use this agency, for want of a better, and confine this branch of the enquiry to municipal areas.

9. In every province I would have a fully representative Economic Survey committee, with the necessary whole-time staff, whose business it would be to guide and co-ordinate the work of the municipalities and that of other agencies employed in conducting provincial enquiries, and to bring together and publish the results.

10. The first task of the municipal authorities would be to carry out a house-to-house enumeration of the ratepayers, having as its object the collection of the following (among other) particulars:—

- (1) Name of rate-payer.
- (2) Style of house (pakka, kacheha pakka, kachcha); No. of rooms.
- (3) Main source of rate-payer's income.
- (4) Subsidiary sources of income, including income of those who live with him.
- (5) Total No. of persons in the rate-payer's household, including dependants and servants.
- (6) No. of earning members of the rate-payer's family, who live with him.
- (7) No. of non-earning members.
- (8) No. of domestic servants, if any.
- (9) Whether the rate-payer pays income-tax, or not.

11. The unit of enumeration adopted is, and I think must be, the household. It will be possible, no doubt, to supplement the information thus obtained, to some extent, by reference to the Census returns. The households enumerated would first be divided, I suggest, into two broad categories, *viz.*, (1) those living in more comfortable circumstances (*e.g.*, (2) in pakka or kacheha pakka houses), and (3) those living in poorer circumstances; they would then be classified according to the occupation (or main source of *income*) of the rate-payer—*e.g.*, zamindar, wakil, Government servant, money-lender, shopkeeper, tonga (ekka) driver, brassworker, etc. etc. Those comprised in the first category would further be divided into (a) those assessed to income-tax, and (b) those not so assessed.

12. As regards (a), I see no reason why the Income Tax authorities should not be asked to compare a list of these rate-payers, arranged under appropriate occupational headings, with their own returns, and to furnish, for each principal occupation, particulars of the number of assessees and the aggregate income returned, classified in suitable income-groups—it being, of course, understood that no information could be given in a form which might make it possible to identify individual assessments. Such

information, which would be of the greatest possible value, ought not to be very troublesome to prepare, the total number of income-tax assesses in the whole of British India being so comparatively small. Extra clerical assistance would, no doubt, be required in the larger towns and big cities.

13. For *general* information as to income, apart from class (a), it will be necessary to rely on the results of a local Wages Enquiry. Similarly, for *general* information as to the cost of living, the necessary data will be furnished by a local Prices Enquiry.

14. Something more, however, than general information is required under these heads: and it is here that the necessity for intensive enquiry arises. The method to be adopted, that is to say—the only method, in my opinion, which is likely to give the desired results—is to take a sufficient *sample* of every important occupational group, both those comprised in classes (a) and (b) of the first category and those belonging to the poorer classes, and by first-hand investigation of the circumstances of the individual households contained in the sample to obtain the materials for “family budgets”, which can be used to frame a reliable estimate of the economic condition of the various classes of the population. Since the *range* of incomes is, comparatively speaking, extremely limited in India, quite a small sample (for each class and occupational group) will probably suffice in most cases. Indeed, it is in this fact that the hope of practical success in the application of this method mainly lies. Suitably selected and specially trained investigators will have to be employed for this branch of the enquiry. On this point I will say something later.

15. We may turn now to the rural population. Here, I think, it will be well, in the first place, to obtain for each province as a whole, if this can be furnished by the Revenue authorities, a complete return of landholders deriving from their estates an annual (net rent) income of not less than Rs. 2,000. This return should contain among other particulars:—(1) the area of the estate; (2) the average gross rent-roll; (3) the estimated expenses of management of the estate; (4) whether income-tax is paid, in respect of income derived from other sources. Where income-tax is paid, the Income Tax authorities may be asked to furnish particulars (without, of course, disclosing individual assessments), which would make it possible to classify, in suitable income-groups, the *total* income of those included in the return. Family budgets should be obtained, where possible, for representative households belonging to each income-group.

16. For the rest, in dealing with the rural population, it will be necessary, so far as any intensive enquiry is concerned, to rely exclusively on *samples*. I suggest that 10 typical villages be selected for the purpose in every sub-division. A picked Deputy Collector should be placed on special duty to take administrative charge of the work in every district. The intensive economic survey of the selected villages which is contemplated should be carried out, under his general direction, by a specially recruited and carefully trained staff. The period of the enquiry should extend over a full agricultural year.

17. The enquiry would start with a house-to-house enumeration and classification of the population of each selected village on much the same lines as that suggested for municipal areas. The investigators would then proceed to collect as complete and reliable *general* information as possible regarding the economic condition of the *village*. This will be arranged

under a great variety of heads; and will, of course, include full particulars as to wages and prices in the village.

18. So far as agricultural outturn is concerned, the information obtained should be of the greatest possible value in checking and supplementing the statistics furnished by the extensive method of enquiry. I am doubtful whether reliable statistics of minor agricultural products, pastoral and dairy products, and fuel, are likely to be obtainable in any other way.

19. Important first-hand information can also be obtained in this way of the selling value of land, and of the character and value of live-stock.

20. In addition, however, to this mass of general information, the "family budget" method will have to be applied to a sufficient number of households, drawn from all the principal classes and castes represented in the village, to enable a reliable estimate to be framed of the economic condition of the various classes of the rural population.

21. I may add that, in my opinion, it is only by the first-hand investigation of the circumstances of individual households that information of a reliable kind is likely to be obtainable with regard to two very important factors in the economic condition of the village, *viz.*, (1) fragmentation and scattering of holdings; (2) indebtedness.

22. I should very strongly deprecate over-burdening the proposed general economic survey by attempting to collect statistics of "wealth" (as enumerated in Appendix J). A certain amount of useful information as to the selling value of land and of live-stock will be obtained in the course of the intensive village surveys which I have suggested. Information with regard to industrial capital of all kinds, supplementing the already fairly complete existing statistics, will be obtained in the course of the proposed census of production.

23. On the question of the cost of a general economic survey such as that which I have outlined, I fear I cannot say much. The cost of conducting and publishing the results of an all-India census of production and census of wages, with the limited scope of those proposed, ought not to be a large sum; and the cost of conducting the provincial enquiries, which I have suggested, should not be very great. The heaviest item will be the cost of training, pay, and allowances, (for 18 months, say), of a fairly large staff of temporary investigators. These should be college graduates, with a special aptitude for the work; and let it always be remembered that the personal equation counts for more than anything else in economic enquiries of the kind which are contemplated. The municipal authorities (and the Income Tax Department) ought to be put to little extra expense, except in the big cities—in respect of which special financial and other arrangements will certainly be necessary.

Oral evidence, the 16th April, 1925.

Chairman.—Q.—What opportunities have you had of studying the economic conditions of the country?

A.—The chief opportunity I have had has been through the Patna College Chanakya Society, with which I have been connected for the last 14

years, and which has been continuously engaged in modest enquiries of this kind. It has done particularly good work in connection with the collection of family budgets; and its members have carried out a number of village surveys. These have been published, year by year, in the Society's annual reports. That is my main experience in this country. At home, I was connected with the cost of living enquiry and the Wages Census of the Board of Trade.

Q.—You have given us a very interesting constructive programme which contains just the sort of information we wanted to have. What are the tests you would apply to determine the economic condition of the country; for instance, production, income, wealth, cost of living, indebtedness, etc.? In the present conditions of the country, what information would you collect? If the Government decide upon proceeding with an economic survey, you will perhaps agree that a stock-taking census is necessary. How long will it take to bring things up to a proper standard—would a couple of years do?

A.—I should think so.

Q.—Do you want any regular staff employed from year to year?

A.—Yes.

Q.—Then there will also be a periodical census?

A.—Yes.

Q.—Assuming that it takes about a couple of years to do this preliminary work, how would you proceed? There is first of all the work of organisation, then the character of the work to be done, the primary data, the final reports,—all these things have to be considered. Can you give us your own mental pictures of what you would get done?

A.—I think the most valuable kind of survey would be some kind of intensive survey on a relatively small scale. An intensive survey of this kind will throw light on the relative economic condition of the various classes of the population.

Q.—In villages in the settled tracts you have some information about agriculture and cultivation. In Raiyatwari tracts, such information is more or less reliable?

A.—Yes.

Q.—In such cases the village survey may be completed by the existing Government agency?

A.—I would not make use of that agency.

Q.—We have information about the area, the crops and all that?

A.—I would make use of all such information after checking it. I should not have very much faith in the particulars given there, apart from the strictly agrarian particulars which would be valuable as a basis for a more intensive survey. I think it is most important to have a special class of investigator for this work. He can be placed in charge of a group of villages, and carry on his investigations for a full agricultural year.

Q.—If such investigations were carried on for the full agricultural year, you would use the Government accountant in the village?

A.—Yes I think the *patwari*, who is the landlord's man, will be valuable.

Q.—But the *patwari* is a Government man ?

A.—In our part of the country, he is the landlord's man.

Q.—If the Government cannot afford the money for an independent agency, and they decide upon some such Government agency to conduct the enquiry, would you have any objection ?

A.—I do not think the public would have much faith in an enquiry conducted by the village *patwari*.

Q.—That is the best agency that they have got ?

A.—Yes. Such an enquiry might be useful, undoubtedly; but I would have some more intelligent and independent class of investigator than that.

Q.—Would you have an advisory committee in each village ? You are obliged to have some officials to collect the data ?

A.—I would not have a formal committee, but I would have the investigator make use of leading men in the village who are willing to help him in his work.

Q.—Coming back to the original point, what information would you collect in the village, what schedules would you prescribe, what are the main items of information you would give in the schedules ?

A.—First of all, I would have a house-to-house census to check the statistics already available. That would show for each household the kind of house, the number of rooms in the house, the main sources of income, the number of earning members and the number of non-earning members, and so forth. That would give you, for a basis the simplest economic data regarding the village population.

Q.—Apart from these particulars, what economic data would you require ?

A.—General features of the village like the situation, the distance from the nearest railway station, the roads, the sources of water supply, the sources of fuel supply, the sanitary condition of the village—but that perhaps you do not want. Then details of the population; the growth or decrease of the population during the last 30 years; the number of houses, thatched, *kucha*, and *pucca*; the number of families classified by caste and by occupation; and further divided into those who are well-to-do, those who are comfortably off, and those who are poor. Then, with regard to the land, the total area under cultivation, the area of arable land in the village, and all the usual particulars under that head; the nature of the soil; the number, the economic position of the *maliks*, which is a very important piece of information in our part of the country. Then we should also have particulars with regard to cultivation, the crops usually grown and the areas under each kind of crop, the methods of manuring and irrigation, the number of ploughs and carts; particulars as to livestock and yield of same, *viz.*, the quantity of milk, curds and ghi; particulars as to village organisations; and a list of village servants and artisans. Then, particulars as to the local industries (if any); the number of huts; the number of shops, and so forth.

Q.—These are all the means, but what is the ultimate end of all this ? Is it, for instance, to find out the income per head, the wealth per family or the total production from agriculture, industries or manufactures ?

A.—That is one valuable figure I would like to have.

Q.—You want the total agricultural production per head of the population ?

A.—Yes; but beyond that, in every village selected for this intensive survey, I would attempt to get detailed family budgets of representative households, and the number of households belonging to different occupational and income groups. I think that can be done. In Indian villages, if you get the confidence of the people, they are ready to give information. Our students have been very successful in getting such information. That will give you some idea of the relative economic condition of the different classes. The first figure for total production will give you the income per head; and family budgets will give you the income per head of different classes.

Q.—You would take the total production of the village and the total production per head, and then you would also take the income of individual households ?

A.—Yes.

Q.—I am putting to you a hypothetical case. If you collected such statistics as would give you a figure for total income, it would include much more than agricultural and other production, and necessarily services would be included ?

A.—Yes. Production necessarily includes services.

Q.—Then should you not have a separate average taken of the income per village and that per family or per head ?

A.—You ought to be able to get an idea of the aggregate value of the services rendered by the village servants and artisans. You would collect particulars of the wages paid in money and in kind.

Q.—So we must have production, we must have 'income' and 'cost of living' ?

A.—I would include in the particulars collected for every selected village details of local prices and of wages.

Q.—There is another aspect of the question. Assuming that a few of the villagers are prepared to make a survey of production, income, wealth, etc., and they start organising themselves; or suppose there is an organisation supervised by committees at the head-quarters of the district who are willing to train the people in such enquiries, is it not desirable that the information collected in each village should be published for the information of the people themselves, to be used for the improvement of their economic condition ? We have been hitherto discussing the value of the statistics to the public generally; but is not the information of especial economic value to the people of the villages ?

A.—It ought to be, if it was provided in a form in which they could understand it.

Q.—If there are four or five intelligent people in a village who are able to help in the work of collecting the information under rules framed by the Superintendent of the Census, and whose work is checked by some official under the Superintendent, would not that serve our purpose ?

A.—I am afraid I should not place very much reliance on a local agency of that kind.

Q.—It would be unreliable at the beginning, and you would get some rough figures, but this would gradually get better, and it may be improved later on ?

A.—I should say that the village people might really co-operate in work of this kind, but the Bihar peasant would scarcely be able to.

Q.—The rural population comprises 90 per cent. of the total population of the country. The best thing to do seems to be to collect as much information as possible in each village and, if possible, through the local agency itself, and then submit it to the central office, assuming that the village people have the capacity.

A.—It is a question not only of capacity but of public spirit; and certainly such public spirit should be encouraged.

Q.—Here is another point. Supposing there is no public spirit, then you would want officials to do that work, if you want it to be done thoroughly ? That means the expenditure of a large sum of money. In that case would you take random samples and choose some villages, say one in every twenty, or in every fifty, and then make an intensive survey of those villages ?

A.—I think there is much to be said in favour of the random sampling method ; but this, it seems to me, will mean applying the methods of the intensive economic survey, to a very large number of villages. If you had not only the money but also the necessary staff, you could cover it. But as you have not, it is for that reason that I have suggested that you should take *typical* villages; and I would suggest taking ten in each sub-division. That would be roughly about 30 in a district. Perhaps, even that would be too much.

Professor Burnett-Hurst.—*Q.*—That would be about 600 in Bihar and Orissa ?

A.—In some districts there are more than three sub-divisions; there may be four.

Q.—There are 85,000 villages in Bihar and Orissa ?

A.—I should take 600 or 700, or nearly one per cent. The difficulty I foresee is regarding sufficiency of staff. I doubt whether you would get in my province a large enough competent staff to conduct a complete survey of, say, 600 or 700 villages.

Q.—First of all you would undertake a survey of all the villages, if it is possible; then you would take typical villages and make an intensive survey of them ?

A.—I am confining myself entirely to that. I do not propose to deal with the villages in the province generally, apart from the typical villages.

Chairman.—*Q.*—But supposing the money was forthcoming ?

A.—I do not think you would get the staff.

Q.—Would not the same staff as is used for collecting agricultural statistics, if it is trained and improved, serve the purpose ? Of course, the first census may not be a complete success, but the second or the third would be better. Do you not think that the people interested in each locality should study their conditions, because after all they are the mer

most interested and they would believe in methods which they understood more readily than if the work was done under Government supervision ?

A.—My own feeling is that this is work that can only be done by highly educated and fairly well-trained men.

Q.—You want a staff and you want money. Supposing you had both, and the provincial authorities were also interested, I take it you would have one kind of scheme and one method of collecting economic data for the villages of the province as a whole; but if you had not enough money and staff, you would confine your attention to 30 typical villages in each district ?

A.—But that would also need a staff. It would need all the staff that could be found in some of the provinces.

Q.—Assuming that an intensive survey of villages was carried out and full particulars of households collected, could you not analyse and compile information for any particular groups or classes of the population ?

A.—I would do that. I would classify households according to occupations in three main income groups, namely, those who are well-to-do, those who are fairly well off, and those who are poor. Under each main head, I would have them classified by their occupations.

Q.—After all, occupation generally determines the wealth or poverty of the people. If you collected the necessary details, in typical villages, you would not get the average you want ?

A.—But people following the same occupation may fall into one or other of the three main income groups. The pure cultivator, for example, may fall into any of the three. Similarly, the cultivator who combines cultivation with service may belong either to the fairly well off or the poor class. I think you will find overlapping of that kind.

Q.—To give a picture which can be easily understood, you must find these main heads. How can you determine them before you take a census ?

A.—No, you cannot.

Q.—You know the occupation and you can start collecting details, but how will you know whether a man is rich or poor ?

A.—You will know first of all by the class of house he lives in.

Q.—You may find that the house is mortgaged, or that half his wages goes to the *buniah*. Would it not be well to confine it to occupation only, both in cities and villages, each family following generally the same occupation ?

A.—It comes very much to the same thing. Under each occupation you will classify those for whom particulars are collected as far as possible in suitable income groups. One average, when there is a wide range of income, is a useless figure.

Q.—To what extent would you collect information of income per head, wealth per head of the population, in the province or the country as a whole ?

A.—So far as the province or the country as a whole is concerned, I think it may be assumed that any figure purporting to represent the average income per head is more or less worthless.

Q.—For the purpose of comparison with other countries, would it not be well for us authoritatively to indicate a figure ?

A.—You will get closer to the truth if you rely upon the figures that can be obtained by an intensive economic survey. You may try to form an estimate of India's wealth as a whole, but there are too many snags in the way of arriving at such an estimate.

Mr. Kaul.—*Q.*—In attempting to ascertain the total income, you intend valuing services ? Do you think services ought to be valued ?

A.—Certainly.

Q.—Would you value all services, or would you take only certain services which help to raise the prices of the products ?

A.—I would take all services that are paid for, that have a money value. I do not think you can get at the total money income of the country unless you do so.

Q.—The distinction that I am drawing is between the services which tend to increase the value of the production of the country—for instance, transport—and those which do not. The produce is worth, say, a rupee at the village at which it is produced ; when it goes to the market, its worth becomes Rs. 1-4-0, and by the time it reaches the coast it is worth Rs. 2. So all these transport services help to increase the value so far as that particular produce is concerned. There are other services which are paid out of the produce itself, for instance, domestic service. I get some return from the village, and out of that I pay my servants. These services I employ for my own comfort ; they do not help in increasing production.

A.—They help to make you more productive.

Q.—Would you equally take the value of the services which help in production and help in raising the value of the products, and that of the services of domestic servants and others, who help indirectly ?

A.—Undoubtedly I would, otherwise you would have to stigmatise professions, like that of doctors, as parasitic. If there are any professions that do not help towards the production of the country, they are parasitic.

Q.—They must be taken as contributing to the comfort of the public ?

A.—Yes, and indirectly helping. What is more valuable than comfort ?

Q.—There are certain professions which are completely non-productive ; for instance, a man living on his own income. He does not help to increase the wealth of the country ?

A.—The man himself is not productive, but what he owns is productive ; otherwise, he would not get any income from it. It is very difficult to separate the two.

Q.—A man who is living on the income of his house ?

A.—Yes, I would count that again.

Q.—And beggars ?

A.—They contribute nothing.

Q.—You would leave them out ?

A.—Yes. No money value is placed on their services.

Q.—You suggested three main groups as the classes whose respective economic condition we could try to ascertain—the poor, the fairly well off, and the well-to-do ?

A.—Yes.

Q.—That would apply to villages ? There you would find out how many are well off, how many are poor and how many can just live ? You could not form such an estimate for a very large area—you could not form an estimate for the district—from that ?

A.—I would try to include a sufficient number of typical villages in my survey to make it representative of the district as a whole.

Q.—Then you would apply the average to the whole population ?

A.—Not necessarily. I would say "this is the numerical proportion between these different classes in our representative villages; and this must be approximately the proportion for the district as a whole". I think that would be a safe deduction. After all, it comes to much the same thing, whether we take a number of income groups within a given occupation, or take the several occupations within these income-groups.

Q.—Do you not think it would be more helpful to know which occupational classes as a whole are comparatively poor or well off, than to know how many men in each occupation are rich or poor ? There may, for example, be classes in which there are two-thirds poor and one-third just able to live. On the other hand, if we compare the different occupations with reference to their relative economic condition, we shall find one occupation in which people are very slightly emerging from the standard of minimum subsistence, and another occupation in which a larger number emerge. Would it be more useful to know that, or to know what percentage in each occupation are poor ?

A.—I think you want to know both. The further you proceed with the enquiry, the more you will know of both. It is a question of detail. There is a good deal to be said on both sides. As you are suggesting, you may have one main list of occupations, and then you can easily subdivide them into suitable income groups—three or four—if you find it necessary.

Q.—In such cases three would be of no use. Take, for instance, the trading classes and the bigger landlords ?

A.—I should have said that the trading classes would fall into all three.

Q.—Leaving out the petty shopkeepers, the other principal trading classes would come at the top. Then we would want to know what people are submerged, and what are rolling in wealth ?

A.—You want a number of income groups. I am not suggesting that you should have three, but a number of groups under these three main heads.

Q.—You have no objection to income groups being provided under each occupation ?

A.—No.

Professor Burnett-Hurst.—Q.—You have travelled in the United States. Are you acquainted with the chief publications dealing with economic subjects in that country ?

A.—I am afraid I am not.

Q.—Do you happen to be acquainted with any official publications dealing with intensive village studies of the nature that you have indicated here ?

A.—No. I am not aware of any.

Q.—Do you happen to be aware of any official study that has been carried out anywhere in Great Britain ?

A.—Not village studies; but there was a " Towns Enquiry ", which was a detailed enquiry in a large number of towns.

Q.—That was the Board of Trade's Enquiry into the Cost of Living ?

A.—Yes; but it related also to other things. Primarily, it was into the cost of living; but it attempted to give a picture of the economic life of each town dealt with.

Q.—But not of individual households ?

A.—Only so far as family budgets were concerned.

Q.—There have been no studies similar in form to those carried out by Mr. Rowntree and the late Sir Charles Booth relating to the incomes and composition of households, undertaken by official agencies ?

A.—I know of none.

Chairman.—Q.—Have you any idea as to how the economic census was carried out in America ?

A.—No. I was there for a very different purpose; and I was not interested in that.

Professor Burnett-Hurst.—Q.—Are you of opinion that the mere figure of the average income per head, for comparative purposes with other countries, is of any value ?

A.—I think that for India a figure of the average income per head of the population would, in no circumstances, be very reliable.

Chairman.—Q.—Then why do other countries have such tests ?

A.—Because they have much better statistical materials for the purpose.

Q.—If we could conduct a survey, could we not build up our statistical material satisfactorily ?

A.—In Western countries, most of the public come under two heads; one that is susceptible to income-tax, in which case, you have very full information; the other, a well-defined wage-earning class, about whom you know, not only the rate of wages of each class, but also the number of days they work in each year.

Q.—Do you think it is possible to obtain that information with similar accuracy in India ?

A.—Most emphatically, no.

Professor Burnett-Hurst.—*Q.*—Would you agree that international statistical comparisons of that nature are largely vitiated because of the difference in the economic characteristics of the people and the standards of living ?

A.—Yes.

Q.—There appears to be a desire on the part of a certain section of the public to utilise any figure for merely comparative purposes, without any other information. Would not such a comparison, from a scientific and purely statistical point of view, be highly unsuitable and unreliable ?

A.—Very unreliable.

Chairman.—*Q.*—What other comparisons would you make in order to determine the economic condition of India as compared with any other country ?

A.—I want to find out what is the relative economic condition of the various classes of the Indian population. I want to ascertain their real standard of living, and then I can institute a useful comparison with some other country, say, Japan. If I know the average for all classes, that in itself means nothing.

Q.—That is why you recommend an intensive study ?

A.—Yes. Take a pure cultivator, or a man who combines cultivation with service. These are well-defined classes which you find in all countries; and, of course, you find them in India. If you know, at the same time, something definite about their economic condition, then you can institute a comparison.

Q.—And you do not think it is possible to do the same thing for the country as a whole ?

A.—I think it would be useless to attempt it. In the first place, the average would be most misleading, especially in India, where you have widely different economic classes. Within each class you have, relatively speaking, a very narrow range of income; but taking all classes together, you have a very wide range, much wider than in other countries.

Professor Burnett-Hurst.—*Q.*—Are you not here dealing with an entirely different type of population than that of Australia or any of the other Dominions ?

A.—Certainly.

Q.—Are you of opinion that an organisation that undertakes an economic survey of the nature you have outlined, should also establish a poverty line for the different classes ?

A.—I think it would be a very rash undertaking.

Q.—Do you happen to know of any official organisation which has established such a poverty line ?

A.—I am not sufficiently informed with regard to modern conditions in Great Britain to say whether the "dole" represents the official poverty line or not, though it approximates to it or should do so.

Chairman.—*Q.*—They are trying to do that in America. They apply a test and find out ?

Professor Burnett-Hurst.—*Q.*—Is not that undertaken by a non-official agency in America and not by an official agency ?

A.—Yes.

Q.—Would you approve of the suggestion made by a witness to classify the industries under different heads, that is, large scale industries, small scale industries and cottage industries ?

A.—How does he differentiate small scale industries from cottage industries ?

Q.—I am not aware. You have already expressed your opinion with regard to the inclusion of services in ascertaining the income per head. Would you agree with the statement that professional services may possibly lead to an increase of the productive activity of a country, but that the increase is not immediate, it is deferred, and for that reason the services of a person should be valued not at the salary he receives, but at something less because the benefit is deferred ?

A.—No, it should be at the income he receives. I am afraid I do not follow. Perhaps, what is meant is that if the benefit to be derived is in the future, you ought to discount his pay ?

Q.—Take a specific case. "A" draws a certain income at the present time as a Professor of Economics. As a result of his teaching, it is quite true that his students may increase the production of the country, but even assuming that, should not his income at the present time be taken into account in ascertaining the total income of the country, and the income per head ?

A.—Certainly it should.

Q.—There are some people who say that because the Professor is engaged in work which will lead to increased activity in the future, his income should be entirely ignored. You would not agree with that ?

A.—No, I would not agree with that in the least. There are professions which do not contribute either directly or indirectly to the activities of the country in the ordinary material sense, but they contribute to the spiritual welfare of the country which reacts in plenty of ways on its material prosperity. That is the way I look at it. If a Professor is not rendering service of that kind, then the Government are wasting public money in paying him.

Q.—With regard to beggars, it is said that they have no income. As a matter of fact some of them have considerable incomes. Would you exclude them from the population of the country when you are ascertaining the income per head of the population ?

A.—No, I would include them.

Q.—But would you include their income ?

A.—No.

Q.—As a matter of fact many of them do derive incomes ?

A.—Yes.

Q.—And would you exclude these incomes ?

A.—Yes, I would.

Q.—You base your view entirely on the nature of the services rendered ?

A.—The income from "services", which I would include in the aggregate income of the country, is the income of those who render such services as are valued in money, and take the shape either of material goods or of something else.

Q.—Some of them may render unproductive services ?

A.—Those I would place in the same category as the boy at college. He derives an income; but he derives it directly from his father. I would not make a census of the income of the boys in my hostel, and add it to the income of their fathers; but I would count them with the rest of the population when I was trying to arrive at the income per head of the population, because they share in their fathers' incomes; and it appears to me that the same thing applies to beggars.

Q.—If it is not a return for any services but if it is more in the nature of a free gift, it should not be taken into account ?

A.—No. You would be duplicating.

Q.—Supposing we were ascertaining the national income, would the income of charitable institutions be included ?

A.—No.

Q.—Do you agree with the suggestion made by a witness that there should be a central statistical organisation and a provincial statistical organisation, the latter to be under the control of the former ?

A.—Assuming that the Central Government had to find all the money ?

Q.—Yes.

A.—I cannot help feeling that it would be better to have a definite fusion between them for some purposes, *e.g.*, for conducting such an all-India enquiry as the Census of Production or the Wages Census. There, I think the provincial organisation must act as the agent of the central organisation; but in everything else, *e.g.*, in all questions relating to provincial matters, the provincial organisation should be, I think, a part of the Provincial Government and not an agent of the Central Government.

Q.—In view of the prevailing idea with regard to provincial autonomy, if the Provincial Government bears the financial burden, would they not be right in prescribing the sort of information that should be collected ?

A.—It would be vital to have uniformity. Whether the Central Government pays a part of the expenses, or not, there must be some sort of co-ordination.

Q.—You are going to permit the provincial Governments to have a certain amount of power with regard to the actual enquiry. Would it not be advisable to have a well-trained statistician in charge, rather than an economist who has had some experience of such investigations ?

A.—It is a difficult question to answer. The man best fitted to run the provincial statistical bureau may be neither one nor the other, in the strict sense ?

Q.—You would even entrust it to an administrator ?

A.—I would, yes.

Q.—Opinions differ considerably as to these details. It has been suggested by one witness that the central organisation should not lay down a hard and fast rule, but that it should be left to the provincial committee to prescribe the details. Would not that result in lack of uniformity ?

A.—I think it may. It is a question which I should like to consider more carefully; but the question of uniformity is an all-important one.

At the same time, I would like to have the agencies in the provinces identified, not only with the Local Government but also with a strong provincial committee.

Q.—Are you of opinion that a Census of Production, a Census of Wages and an intensive enquiry could be carried out concurrently ?

A.—I do not know any reason why they should not be, seeing that the machinery required would necessarily be of a very different type.

Q.—Do you think you would have a trained statistician in the country to undertake the work ?

A.—I should recommend that someone should be brought out from the Board of Trade for that purpose.

Q.—Would he be sufficiently acquainted with the conditions of the country ?

A.—One suggestion I have made with regard to the Census of Wages and the Census of Production is that you should have associated with the Central Office, Advisory Committees, consisting of men of standing in the different industries investigated, whose special knowledge would be of the greatest help in conducting these censuses. This was the plan followed in the case of the Census of Production in England. A really competent statistician from the Board of Trade, if he were associated with properly formed Committees of this kind, would very quickly tumble to the special problems.

Q.—Some years ago a gentleman was invited to go into the question of the cost of living and other subjects in Bombay. There was a very expert committee to advise him, but the result of his scheme has been partly successful and partly not, because he was unacquainted with the conditions of the country ?

A.—I know Mr. MacLeod very well; I have a great personal admiration for him, but you have got to remember that he was an old man before he came out to India. He had been for many years at the Board of Trade, and I think that such a man would find difficulty in acclimatising himself and making himself familiar with the conditions of the country. But there are plenty of young men who would quickly learn about local conditions, and would be able to run the whole thing successfully. If it were a question of intensive work I would not approve of it; but it is a question of the preparation of schedules and tabular statements.

Q.—Would you not endeavour to find a man in India if you could ?

A.—Certainly.

Q.—With regard to the Census of Wages in mining districts, do you think it is possible, taking into account the conditions of the mining districts in your province, to get accurate figures of miners' wages ?

A.—I do not see why it should not be.

Q.—The difficulty is that they work for a few days, and then go back to their villages ?

A.—You must identify the persons to whom the wages are paid; otherwise you will get no information of value. And if the labourer is working here to-day and in a different place to-morrow, it may, it is true, be difficult to trace him.

Mr. K. C. ROY CHAUDHRI, M.L.C., Bengal.*Written Statement.*

(The numbers in brackets are those of questions in the Questionnaire.)

(1) For the purpose of Economic enquiry you will have to take an account of absorption of Gold and Silver which goes by the name of a hoarded wealth of India.

(2) I would include unemployed and unemployable Graduates and under-Graduates and Political Parasites in Sir Edward Gait's classification of occupation under the heading 'unproduced'.

(18) I had great deal to do with Fisheries and Fishermen some five or six years ago and suggest the following method to collect statistics of fresh water and sea fish as follows:—

- (a) Apart from Railway bookings on Eastern Bengal, East Indian and Martin's Light Railways which include purely fresh water and estuarine fish, booking on Bengal Nagpur Railway from Puri and Baleswar would give you quantity of Rail-borne sea fish in Bengal and Orissa. There is large trade in salted and cured fish in Bengal (*i.e.*, salted Hilsa) and dry salted fish in Orissa which goes to feudatory states by carts and carriages if one can get the statistics of extra salt consumption over and above normal consumption per head quantity of cured fish can be estimated.

Excepting in Madras, thanks to the enterprise and exertion of Sir Frederick Nicholson, fish canning and fish curing is not practised elsewhere. Fish manure is mostly made in west coast of Madras and transported inland by Railways.

Edible oysters are only found in places like Pulicat lake and on Bombay Coasts. Lime is made from Shells in Madras and in sea coasts. The only agencies I could think of to tackle statistics of fish production is the Agricultural Department and Co-operative Credit Societies which are organising Credit Societies among Fishermen.

Minerals—

The report of the Chief Inspector of Mines would include wages and general condition of operatives working in Coal Mines. This is done by the Inspector of Factories in Bengal in his report.

(27) *Re* large Industrial establishment. The statistics published by the Director of Statistics are not satisfactory. The publication should be annual and should contain more details, *i.e.* the sex of operatives and children employed.

Census of Industrial Production taken every three years is essential. The dominion system of classification should be adopted and should include rents paid by operatives for quarters inside and outside the Mill compound.

(37) Cottage Industries should include Home Tailoring done by Darjis (Tailors). There are thousands employed in the suburbs of Calcutta.

(40) *Wages.*—The statistics given in the publication known as Prices and Wages in India, issued by the Director of Statistics are unsatisfactory

and unreliable. I took the matter up with Mr. Ghosh the Director some time ago and I was told that he had to rely on very kacha reports. In connection with a resolution that I moved in Bengal Council for minimum wages I quoted figures from the Prices and Wages in India but I was challenged by Industrialists who refuted the figures, especially wages of Coal Miners.

(57) The information given in the report of the Factory Inspectors, *i.e.* Wages of Jute Mill operatives is unsatisfactory. The report should state the number of working hours in Jute Mills and the rate of piece work, where piece work prevails.

(62) *Income* :—Mr. McLeod in his book on Indian currency estimated the hoarded wealth of India to be £300 million. Sir Ernest Cable now Lord Cable in a letter to Times of London in 1908 estimated at 11 millions absorbed in Gold per year. The Editor of Times commented on it and gave £23 millions or 34½ Crores of Rupees per year. I think some method should be adopted to test accuracy of these figures. Major portions of imported silver is hoarded by manual workers including Ryots.

Ibbetson calculated the total value of annual agricultural production to be £294 millions equal to 440 crores of Rupees which tallies with Dr. Slater's estimate of annual income of India, *viz.*, a little over Rs. 100 Mr. Noel Paton's estimate of agricultural production including Cotton, Jute, Rice, Wheat, Tea, Linseed Rape, Mustard, Groundnut estimated at Rs. 40 as the average farm product of agricultural population in his Dictionary of Statistics in 1891. Income Tax returns are reliable to a degree and affects large income. Family Budgets from house to house enquiry should be prepared in typical, industrial and agricultural area in view of the heavy expenses likely to be incurred for preparing an economic survey of India on the western model I suggest that grants be made to existing Economic Societies and Associations to enable them to do preliminary work, *e.g.* the Society founded the other day with Sir R. N. Mukherjee as president should prove a useful medium for such enquiry. Hundreds of Graduates with economic bias may be utilised for the purpose on payment of out of pocket expenses. I would also suggest amendment of Municipal and Local Self Government Act to empower them to undertake within their respective areas, survey of the economic condition of the people.

Cost of Living—

I am a firm believer in the methods adopted by Dr. Findlay Shirras in preparing the working-class-budget in Bombay, issued by Bombay Labour Office. In fact I made several attempts to induce Government of Bengal to follow the footsteps of Bombay Government in this matter. The want of funds was the plea put forward.

Oral evidence, the 16th April, 1925.

*Chairman.—Q.—*What information would you collect for an economic survey in your part of the country ?

*A.—*You see we have one point that has engaged my attention for some time and that is what is generally called the "hoarded wealth". That has not been ascertained so far but I have here some figures which I got while I was studying in England and I find that Mr. McLeod has written a

book on Indian Currency and he estimates (that was somewhere in 1908) the hoarded wealth to be £300 million. Following that, Mr. Ernest Cable, now Lord Cable, a man who made a good deal of study of Industrial conditions wrote a letter to the Times, London, and he pointed out that something like £23 millions worth of gold was absorbed in India every year. The Editor of the Times, London, commented on it. I have the date.—August 1908—and he quoted certain statistics and used a lot of information he had from the Editor of the Times, London; other economic scholars maintained that more than 34½ crores of rupees worth of gold and silver are absorbed yearly in India. That gives us some indication as to the hoarded wealth of the country. Some method might be adopted to estimate this. I must leave it to those who are economic scholars. India absorbs gold and silver to the extent of 34½ crores and the major portion of silver is hoarded by the manual workers.

Q.—How would you like it to be tested ?

A.—You have better information than I have. We know the import of bullion from year to year. The import of silver purely for currency is kept separate. Then the other bullion which is imported, with the exception of certain silver wares and silver utensils, goes to make bangles and so on. If you know the quantity of silver imported every year and the portion which goes for coinage and other special purposes, then you have some guide to go by to ascertain absorption of silver by the masses.

Mr. Kaul.—*Q.*—You suggest an enquiry as to the amount of silver absorbed in the mint and the amount used every year for making ornaments and silver ware ?

A.—Yes.

Q.—How would you suggest these enquiries to be made ? From all silver-smiths ?

A.—In Calcutta, I can tell you, there is one putty which is called the silver merchants' putty. 10 or 20 shops dealing with silver alone and they sell to the bazaar silver smiths who make ornaments.

Q.—I wonder whether they would supply the information ?

A.—They are people with good incomes and their incomes are assessed from the income tax point of view. If they have transactions amounting to Rs. 50 lakhs a year you can get a rough estimate if you take the value of a tola of silver. I do not know if that source can be tapped for your purpose. Then as regards the annual agricultural production of India, that is a moot point which is the subject matter of tremendous controversy for several years. I don't know whether you have read Ibbetson. He calculates the production to be £294 millions which is equal to about Rs. 440 crores and these figures tally with Dr. Slater's figures.

Chairman.—*Q.*—What are the figures ?

A.—£294 millions which is equal to Rs. 440 crores and this seems to tally with Dr. Slater's estimate of the income of India.

Mr. Kaul.—*Q.*—Dr. Slater's figures are only recent ?

A.—I found that from your paper. It is a recent thing. I don't suppose Dr. Slater has quoted Ibbetson. Then you see we have also Mr. Noel Paton's estimate. He took even tea, cotton, jute, rice, wheat, linseed, mustard, ground nuts, etc. Mr. Paton's estimate is not 40. Mr. Paton's is £320 millions. Then you have Dr. Mulall's Dictionary of Statistics.

Chairman.—*Q.*—What is the object of your quoting all this ?

A.—Because in this questionnaire you have given all the latest figures.

Q.—You are anxious to know what the agricultural production of the country is ?

A.—Yes.

Q.—Do you want the production for industries also ?

A.—Yes. I have made a special study being a labour man.

Q.—Wages also ?

A.—Oh yes. I asked a question only the other day in the Bengal Legislative Council for an enquiry about the family budgets of Industrial Workers and got the reply “ No money ” and yet a tremendous lot of money is wasted for other matters. We have an Industrial Intelligence Officer—a highly paid I. C. S. man. If they spend some money for collecting statistics we would have something to go by.

Professor Burnett-Hurst.—*Q.*—What does that Industrial Intelligence Officer do ?

A.—Whenever he reads news of a strike, he writes to the magistrate of the district and the magistrate writes to the policeman to find out something about it and when the information comes in, he reports it. That is one portion. Then lately he is engaged in a recruitment bureau in regard to Lascars. He maintains regular correspondence with the Labour Department, Government of India.

Q.—He does not compile any statistics relating to labour ?

A.—I have been to him many times. I have told him to tackle a single jute mill area. He says he cannot do it without the sanction of the Government.

Chairman.—*Q.*—Can you give us any suggestion as to how to ascertain the economic condition of the labourers ?

A.—Yes. We have got the Report on “ Prices and Wages ” and things like that prepared by Mr. Ghosh. It is unreliable. So much so that in the Bengal Legislative Council when I moved a resolution about minimum wages, there was a big discussion and I was challenged. I quoted from the report and I was challenged by Sir Watson Smythe the then President of the Chamber of Commerce and he said it was unreliable. I went to Mr. Ghosh and was told he had to rely on very *kutchu* reports ; and he said “ where did you get the figures ”. It does not always tally with the figures of the Inspector of Mines. The Inspector of Factories has one chapter for dealing with wages. The Inspector of Mines gives very little information about wages. But to ascertain wages it is not a very, very difficult matter.

Professor Burnett-Hurst.—*Q.*—The last report of the Inspector of Mines contains wages of certain classes of miners in representative collieries and representative coal fields.

A.—Only the last report. I have not the last report.

Q.—The report for the year ending March 1923 ?

A.—No.

Q.—I was going to ask you whether you consider the figures published in that form are of any utility.

A.—It all depends. In most of the collieries they work on the piece system. Now if they simply give you the information that the coal miner's wage is Rs. 4 or 5 a week, that is nothing. If they say that the coal miner's wage is based on so much a tub and he works so many days or hours in the week and is paid so much, then it gives you something.

Q.—Do you want to ascertain particulars relating to wages in as detailed a form as given in the Earnings and Hours Enquiry of the Board of Trade ?

A.—That would be an ideal thing.

Q.—Do you think it is possible in the Indian coal mining industry ?

A.—In many instances it is possible.

Q.—But there are other difficulties. The miners work as a gang, as a family or all seek work together. They are piece workers. They go down and they work so many days and irregular hours ?

A.—Yes.

Q.—Some of the work is given on contract and they are paid by contractors ?

A.—Yes.

Q.—In such cases would it not be difficult for the colliery companies to give accurate returns of the earnings of individual miners ?

A.—I have been, I think, in a good many collieries for the purpose of enquiring the earnings of miners. I admit there are raising contractors. They make their contracts with the managing agents. They employ the coal miners on the piece system. The miner and his wife work together. He only works four or five days,—at the utmost four and a half days. In four and a half days they raise so many tubs. The average rate is Re. 1 per ton and 1½ tubs make one ton. They get 9 to 10 annas a tub, that is 15 annas to Re. 1 a ton and this rate is almost universal. In certain places it is 9 annas a tub and each tub is 13 cwt. It does not matter if it is a raising contract so long as you get the raising and the number of people employed for that raising. If a family raises one hundred tons, they are paid Rs. 100 and if in that gang there are five, the wage is distributed amongst them.

Q.—Would you not have to take the gang as a unit and classify them according to . . .

A.—In most collieries they work in couples,—the man cuts and the wife fills and moves the tubs. The Inspector of Mines has a good staff of assistants under him and I do not see any difficulty in getting, not the rates of wages but the earnings. The rate of wages are well known there,—approximately Re. 1 per ton. Then I read Mr. Simpson's opinion on the matter,—that the coal miner will resent enquiries and will be indignant if you enquire what his expenditure was. We have Sonthals, Bauris and other people. I don't agree with Mr. Simpson that if any one went to enquire about their wealth and possessions, they will at once come to the conclusion that it will lead to taxation. That it might do to ordinary

people who are intelligent and suspicious enough to surmise that if a Government officer is making enquiries as to what ornaments they have and how many earthenware pots, but a coal miner would not be so suspicious that he is going to be taxed. After all he has but little tax to pay. When he is working in the coal mine he has no direct tax to pay and therefore I cannot understand why he should be suspicious about a fresh imposition of taxes.

Chairman.—*Q.*—Would you be able to collect this information if you wanted ?

A.—Yes.

Professor Burnett-Hurst.—*Q.*—The miner in many cases does not reside permanently at the mine. That is to say, he goes back to his village after he has earned a certain amount. So that you have to take into account not only his earnings as a miner but also as an agriculturist. In such a case, are you going to follow him to his village ?

A.—No. A percentage of the miners are emigrants. In fact when I was President of the Raneegunge Miners Association I found that more than 50 per cent. are settled. They are settled in Raneegunge.

Q.—What about Jherria ?

A.—In the centre of Jherria (in Dhanbad) they have not their agricultural plots but in those mines 20 miles away some of the colliery proprietors have helped to give them land or they have acquired it.

Q.—In Jherria ?

A.—They have no agricultural plots of their own.

Q.—So they migrate ?

A.—Yes.

Q.—What percentage ?

A.—They generally go during monsoon season. That is to say as soon as the rains begin, they go. That is, ploughing time or just before the monsoons they go there. If they go in July, they come back in October. These are the four months when there is labour difficulty in the coal mines.

Q.—How are you going to ascertain their income when they go to their villages for these four months ?

A.—That will be left to the people in charge in their villages. These won't be left in charge of the people in the mining area.

Q.—But you want to trace them right through ? If you don't follow them through, you might apply your figure to an entirely different family unit ?

A.—If you know this family is going to a particular place, the enquiry man has his address. He sends a slip to the man in charge of his district and he might trace him there. That is, on the hypothesis that there is going to be a lot of enquiry officers for the purpose. The same thing will apply to the jute mills. They are also migratory there.

Q.—The bulk of the industries ?

A.—Yes. The best thing about this migration is that they come back fresh and the mill authorities encourage that. The other day a mill super-

intendent told me that if he had his way, he would pay off his men and they like it. Mr. Ford of the motor car fame liked this idea, half agriculture and half factory work. I had something to do with the fishery business. I was on the business for four or five years in Madras and Chilka Lake.

*Chairman.—Q.—*What were you there, an official ?

*A.—*I owned a pioneer fishery business in Chilka lake and there I studied a good deal about fishery. The statistics for rail-borne fish you can get from the railway company. A good deal of fish goes into the Feudatory States and that is salted fish. They are either carried by carriers or taken by bullock cart. The best way to ascertain the quantity is to find out the quantity of salt used because curing is done with the help of salt.

*Professor Burnett-Hurst.—Q.—*Are there no fish curing yards ?

*A.—*Not exactly fish curing yards. In Ganjam and in Puri they cure it in the old fashioned way. In Madras where they do it with the new method, they have fish curing yards. In Bengal they have no fish curing yards. My point is that if you want to know the quantity of cured and salted fish not carried by rail, I think you will find it from the consumption of salt. Take Puri or Ganjam. There are salt dealers there. They know exactly what quantity of salt is there. We know the average consumption of salt and anything in excess of that is used for fish because there is no other use for salt. I can tell you of Puri, Balasore and Ganjam. If you know the population of Ganjam and the consumption per head of salt, anything in excess of that is bound to be used for fish. Sir Frederick Nicholson's book will tell you the proportion of salt used for fish. Practically half a maund of salt is required for $1\frac{1}{2}$ maunds of fish. At any rate you can get to know the quantity of salt used for your fish and from that you can make your own estimate.

Dr. Sir P. C. ROY, Kt., C.I.E., D.Sc., University of Calcutta.

Oral evidence, the 16th April, 1925.

Chairman.—*Q.*—Government want us to suggest a scheme for an economic survey. What are the tests you would apply to ascertain the economic condition of the people in Bengal? Is it 'income', 'wealth', 'production', 'cost of living', 'indebtedness', 'or wages', or a combination of two or more of these?

A.—The total amount of food-stuffs grown in the province might be divided by the number of people to ascertain whether you have enough for each individual to live upon. I would also take the export into account to see how much is left for the people after export. Years ago I read Dadabhai Naoroji's book. He said that in an ordinary jail the people are better fed than the village *rayat*. The average household consists of five persons, and you have to divide what is produced by a household by five.

Q.—Have you ever made any calculations yourself?

A.—No, but you know Mr. Neegy has written several articles. Mr. Neegy was in the *Journal of the Royal Statistical Society*. If you look at the back numbers of the *Journal* you will find many calculations. He says that the export of *rice* is a forced one. According to his calculation, there is *not* enough paddy grown to support the people.

Professor Burnett-Hurst.—*Q.*—I presume he based his figures on the agricultural statistics published by Government?

A.—Yes.

Q.—Which of his figures are inaccurate in Bengal?

A.—Yes. You are hoist with your own petard.

Chairman.—*Q.*—How long would it take to carry out a stock-taking census of the wealth of India?

A.—It would be a very, very big business. You know the village chowkidar is the informant as to the number of cattle and date trees—the ultimate authority is the village *chowkidar*.

Professor Burnett-Hurst.—*Q.*—What are his wages; a miserable amount not exceeding five rupees?

A.—Now-a-days say Rs. 6 or Rs. 7.

Q.—Not exceeding Rs. 7?

A.—No.

Q.—And he is the man used for collecting accurate statistics and returns?

A.—Yes. He is supposed to be a resident of the village. He is not a whole-time man.

Q.—What enquiries would you make in the villages to ascertain the production?

A.—As to the acreage under cultivation and the average yield, I think the intelligent *rayat* would be able to tell you how much paddy is cultivated. Our *rayats* are very intelligent. Sir James Pigott—in regard to the great Famine Commission which sat in 1879 on the Madras famine—

when Dr. Walker and others came out they all said that the Indian *rajat* can answer your questions very intelligently and he knows his business affairs fairly well.

Q.—Do you think he will answer questions as to his wealth accurately ?

A.—He will be able to tell you how much land he has under cultivation, how much paddy, how many maunds of jute.

Q.—If you ask about his jewellery and personal effects ?

A.—I think that is all moonshine. He has only brass trinkets. I daresay that in the irrigated areas of the Punjab, those colonies where they have wheat in abundance, they are possibly hoarding. But so far as Bengal is concerned, that is all a myth. They have only brass lotas and other things to be sent to the pawn-broker.

Chairman.—*Q.*—Gold ?

A.—Absolutely none. They have a little silver, not even two or three per cent. There are no doubt a few agriculturists who are well-off. In the Sunderbands you do not have permanent settlement. You have 99 years' leases. I know the Pods in the Sunderbands district—almost the region I come from. Some of them are fairly wealthy, but that relates only to particular districts. I know that one of them in a murder case secured the services of Mr. C. R. Das and spent Rs. 15,000—and it must have cost another Rs. 15,000 say Rs. 30,000 for the murder case. But such instance relates only to a special fortunate region.

Q.—So litigation is one of the tests ?

A.—Yes. If you have a bumper crop, you have a harvest of litigation.

Q.—Are you in favour of an economic survey ?

A.—Yes. I am. You know the late Mr. Romesh Chander Dutt crossed swords with Lord Curzon. He said the national income was at that time Rs. 30 per head and Mr. Dutt said it was more ; and now Sir George Lloyd before he went away said. . . .

Professor Burnett-Hurst.—*Q.*—What exactly is your conception of an economic survey ?

A.—The total wealth of Bengal.

Q.—How would you ascertain the total wealth of Bengal ?

A.—I would leave the wealth of Calcutta out. I have been touring and lecturing a good deal. I say that 90 per cent. of Bengal does not belong to the Bengali. We have been ousted from every avenue of trade by Marwaris and others. The Europeans also almost have a monopoly. If you go to Burra Bazar you will find that the Bengali is nowhere.

Q.—You say you want to ascertain the total wealth of Bengal, excluding Calcutta. You mean you want to treat Calcutta separately ?

A.—Yes, as a separate unit. You see, in regard to the jute mills, tea gardens, coal mines—all the wealth goes through Calcutta. We are practically an agricultural country and if you find out the total yield of the principal crops, that will give you a fair idea of the wealth of the people. Paddy and jute are the two principal crops of Bengal.

Q.—Then you mean total production, and not total wealth ?

A.—Total production. We are not an industrial people. Our only source of income is agricultural produce.

Q.—There is a great difference between production and wealth ?

A.—Yes ; I would leave Calcutta out of consideration.

Q.—In order to ascertain the land under tillage and the average yield, would you go to every village ?

A.—No. One typical village would do in a particular quarter.

Q.—How would you select a typical village ? What you consider typical, the man in the street might not ?

A.—On the whole, anyone can make out. Take a jute district like Mymensingh or Pabna—the conditions are much the same, and if you go to the south of Khulna, it is a place of one harvest “ *Ek fasal ka mulluk* ”. You would find that the average for hundreds of square miles would be almost the same. But between district and district, for example Birbhum and Bankura, Mr. G. S. Dutt would be able to tell you more. There have been six or seven famines in the course of the last twenty years, because in Bankura the harvest is a good deal dependent upon the storage of water, and these ancient embankments (*bunds* as they are called) are out of order. But leaving Birbhum and Bankura out, the whole of Bengal is in much the same condition and there will not be much difficulty in arriving at a fair conclusion.

Q.—Would you divide Bengal into tracts of similar economic characteristics ?

A.—Yes.

Q.—And in those tracts you would select villages by random sample ?

A.—Yes.

Q.—And make intensive studies of them ?

A.—Yes. On the law of averages, 20,000 people die of snake-bite. It is more or less. All the snakes do not hold a consultation and decide that they will kill only 20,000 and stop there.

Q.—Are not averages rather dangerous at times ?

A.—Yes, at times. But when an average extends over large areas it is fairly accurate.

Q.—You may be told that the average depth of a stream is four feet, and you may try to wade across that stream, but when you come to the deepest part you might lose your life ?

A.—Yes. In Lower Bengal it is very deceptive. In the rivers in Eastern Bengal every twenty-four hours there is a deposit of sand, and the steamers come to grief. The other day the steamer on which I was stuck twice. But on the whole, in Lower Bengal the conditions are much the same.

Chairman.—Q.—Cannot the people of the villages collect the economic data and thereby try to better their own condition ?

A.—I am afraid not. They are hopelessly illiterate and ignorant.

Q.—Are not a few people literate in some villages ?

A.—They are the *Bhadralog*. Among the higher caste people you have the school teachers ; even the Moslem *rayats* have not a high degree of intelligence. But there again wherever you have not got *Bhadralog*, you may travel for miles and miles and you will find agriculturists unredeemed by a single ray of intelligence.

Professor Burnett-Hurst.—Q.—Do you think that persons of the *Bhadralog* class would reveal their income and wealth ?

A.—They have nothing to conceal. In Bengal, even the Zemindars are hopelessly in debt. I doubt if there is a single solvent Zemindar in Bengal.

Q.—Do you think that in an economic survey it would be advisable to take indebtedness into account ?

A.—Yes.

Q.—It is a most important factor ?

A.—Yes. They borrow money at one anna on the rupee, and that is 12 annas per year. That is my personal knowledge. When one is in the clutches of the *mahajan* with interest and compound interest, one cannot get out.

Chairman.—Q.—What is the minimum cost of living in Bengal ?

A.—For an adult, a seer of rice.

Q.—A family, say, of five ?

A.—They are suffering from malnutrition. They boil lots of *kutcha sagh* and other vegetables, and somehow fill up their stomachs. In very few districts do they enjoy the pleasure of the full stomach—what is called a real hearty meal.

Q.—It is unknown ?

A.—I mean in rural tracts. In Bengal, I should say the adult agriculturist takes half a seer of rice, and at present it is Rs. 8 or 9, and even as much as Rs. 10 a maund, depending upon the quality. That means a seer of rice alone would cost, if it were at Rs. 10, 4 annas, but say the rice alone costs three annas. Then there are the vegetables, fish and a little condiment.

Mr. Kaul.—Q.—And fuel ?

A.—That is a great question. It has been dwelt upon by all economists that cow-dung, which used to be considered excellent in the days of my childhood is a great waste if made into cakes.

Professor Burnett-Hurst.—That is a considerable industry, practically throughout India ?

A.—Yes. I mean it is carried on by the widows and aged.

Q.—But it is considerable !

A.—In a manner.

Q.—Are not the cakes sold ?

A.—Yes.

Q.—Do you happen to know at what price they are sold ?

A.—I do not happen to know. They are seldom sold. In each household the old women make them on their own account. In villages, they

are seldom sold except to the blacksmith for making tyres for cart wheels red hot.

Chairman.—*Q.*—Take the cost of an economic survey. If it is done in great detail, assuming it comes to one rupee for a family of five persons, where is the money to come from? Would the people contribute?

A.—The people, I am afraid, will not contribute anything. They have no tangible interest in it. They do not understand it.

Q.—But their leaders will direct them?

A.—There is not that public spirit. I am afraid the Government will have to bear every farthing of the cost. But you may get honorary service wherever you have intelligent people. The *Bhadrolog* class will gladly help you.

Q.—But not with money in Bengal?

A.—No. If I am permitted, I may add one thing which has led to the poverty of the people still further. It is in the absenteeism of the landlord. Now-a-days the rush is for the towns. All the big zemindars were formerly residents. I have been travelling extensively in Bengal, and wherever you have resident zemindars you have good drinking water, but as a rule all the big zemindars now-a-days are absentees. They live in Chowringhee. They have to keep up a big establishment. They have motor cars and equipages. The leading person is the Maharaja of Burdwan. So all the wealth is drained away into the town, and living in luxury means that all the wealth goes abroad. But formerly, when they were resident zemindars, they used to look after the people directly or indirectly; even if a zemindar be tyrannical and exacting, if he lives on the spot all the wealth flows back directly or indirectly into the pockets of the people. But when he is absent, he constantly sends orders to his agents for more money. That is what we find every day.

Professor Burnett-Hurst.—*Q.*—It has been suggested that family budgets should be collected from each individual household. Do you think it is possible?

A.—Well, that is the only means of ascertaining the economic condition of the people.

Q.—You think family budgets should be collected?

A.—Yes.

Q.—Do you think you will obtain reliable information?

A.—Yes, fairly reliable. Of course, the people are so backward and ignorant, that they will probably think Government wants to impose a tax. They have a horror of that. But on the whole, if you take the help of the vernacular papers, a good deal of propaganda work could be done. Then it would disarm suspicion.

Q.—For what period would you collect the family budget?

A.—As in the case of the census, it may not be spread over a great period. It may be spread over Bengal.

Q.—But in regard to individual families, for what period of time would you ask them for information as to their expenditure?

A.—I say that the intelligent people of the village would give you all the information, without your having to cross-examine the householders.

Q.—You would not question the individual householders ?

A.—Any person in the village would be able to tell you the average economic condition.

Q.—That is not my question. What has been suggested is that the investigator should go to individual families and enquire how they spend their income over a definite period of time. Would you approve of that method ?

A.—What I would do is this :—I would first have the information collected by intelligent people, and I would then have it checked by going to individual householders. It would not be possible to go through all the individual households in Bengal. That is what I mean.

Q.—As a check, you would take typical families and obtain information from them ?

A.—Yes.

Q.—For what period of time ?

A.—Not for long.

Q.—Would you ask a man for his family expenditure for a day, a month or a year ?

A.—A day or a week would not do.

Q.—You want a year ?

A.—Yes. During the month, immediately after the crop has been harvested, they generally indulge in luxuries. I mean they have far better food stuffs. Months pass by and for the next year's crop they borrow money and economise as much as possible.

Q.—Do you think a man could tell me the expenditure of his family for twelve months ?

A.—It is a very difficult thing, because I find that in Eastern Bengal during the jute season, and when the jute has a high price in the market, they go in recklessly for expenditure. They buy the best fish and they want nothing but the best kinds of 'vilaiti' goods, but that is only immediately after they sell the crop.

Q.—When they have the money they spend it ?

A.—Recklessly.

Q.—Why do you not carry on propaganda ?

A.—The difficulty is immense. The first thing is education. As Mr. Ramsay Macdonald suggested the other day, it is the West plundering the East. Now, if I got a lakh of rupees, I would not spend it recklessly. I would buy Government paper or zemindary or house property ; but what I find among these illiterate people is that if they get a good price for their crop, they simply gamble away the money, so to speak. They will buy anything and have big festivals. Even in Eastern Bengal they marry any number of wives yet adding one or two more to the household. That is the universal custom.

Q.—Do you think the size of the family and the number of wives should be taken into account in ascertaining the economic condition of the community ?

A.—Yes.

Q.—What percentage of the population have more than one wife ?

A.—Mostly the Moslem people. 85 per cent. in north and eastern Bengal ; about 80 per cent. is Moslem, and they indulge in that luxury

Mr. Kaul.—Q.—Do not *kulins* have more than one wife ?

A.—That is an old custom. That is absolutely a thing of the past. That is a thing which existed 75 years ago. A *kulin* with two wives would be almost a curiosity, to be shown in the museum, to-day. It is an economic question, not a moral one. They cannot support even one wife. Their wives are helpful. They say it is better than having a maid-servant. They do all the household drudgery. They do everything, even the husking of the paddy.

Q.—Fish is an important item of diet of the people of Bengal.

A.—Lower Bengal ; not where there are no rivers. If you go to Bankura and Birbhum, fish is very rare, but in all parts where you have numerous rivers and creeks, there is good production.

Q.—How would you ascertain the production ?

A.—In the case of the hilsa it can be done with a fair degree of accuracy.

Q.—How, I do not follow ?

A.—In the rainy season, when they catch hilsa fish in the Padma, you can easily get the statistics. If you go to Goalundo and those places, you can almost count the fishing craft. Also, you can consult the railway traffic returns, because the fish are iced and sent down to Calcutta.

Q.—They have returns or statistics of fish sent to Calcutta ?

A.—Yes.

Q.—If we tried to ascertain fish production as a whole would it be possible ?

A.—It would be possible in the case of the hilsa and other season fish--seasonal crops—I will use that word.

Q.—Not for other species ?

A.—No.

Mr. UMAKANTA GOSWAMI, M.A., B.L., Lecturer, Cotton College, Gauhati.

Oral evidence, the 16th April, 1925.

Chairman.—Q.—What opportunities have you had of studying the economic conditions of the people of this country ?

A.—I am an inhabitant of Assam and also I come from the village side so I have come from my childhood into direct touch with the people.

Q.—You are a Member of the Legislative Council ?

A.—No, Sir. I was formerly a professor of the Cotton College, Gauhati, in place of Mr. Brown and at present I am a lecturer in the same college. I am also a lawyer of the Gauhati Bar.

Q.—What is your view about this economic survey ? Do you like it or want it ?

A.—By all means.

Q.—What should be the result of this economic survey in your opinion ? Suppose an economic survey is taken, what would be the result and in what form should the result be presented ? What would the people expect ?

A.—As a result of the economic survey, people would expect some solution of the present day economic problems—for instance, the development of staple industries like agriculture, textiles and possibly the establishment of new facilities for technical training.

Q.—Are the people in the villages intelligent enough to make the survey for themselves suppose we gave instructions in writing ?

A.—At present, I cannot say they are intelligent enough. But there is a good deal of potentiality and with guidance they will be able to come up to that standard.

Q.—What is the percentage of the literate population ?

A.—In Assam it is only 5 per cent. and English knowing form only one per cent.

Q.—What class of people can we get for an economic survey in rural parts ? Whom do you think Government should utilise ?

A.—Government may utilise the services of some honorary investigators. There are *Mauzadars* and village *mandals* and the inspection staff of the agricultural department as well as the inspectors of the co-operative societies.

Q.—What are the *mauzadars* ?

A.—They are agents appointed by the Government for realising revenue. There is a separate system there.

Mr. Kaul.—Q.—He is a sort of head-man ?

A.—Yes. A man is appointed and security is taken from him to realise an amount of revenue from Rs. 20,000 to Rs. 80,000.

Q.—A mauza contains villages ?

A.—Yes a mauza contains about 12 square miles. In that there might be about 100 villages. The number of villages may vary from 10 to one hundred.

Q.—I presume he corresponds to the tahsildar in the United Provinces ?

A.—Yes. In Assam before the present *mauzadari* system the people who realised the Government demands were called tahsildars and they were Government servants and not contractors, but that system has been abolished.

Q.—This is a contract system ?

A.—Yes. They get a percentage of the money they realise.

Chairman.—*Q.*—Have they any inquisitorial powers ?

A.—They have no power to try cases but they have power to sell movable properties from their own initiative for realisation of the revenue.

Q.—It is a very dangerous power ?

A.—Yes. As a lawyer I have come to see considerable abuses but still the Government have not thought it proper to take away that right.

Mr. Kaul.—*Q.*—Is there any other authority ?

A.—There is no other authority.

Q.—Between the sub-Deputy Collector and the *Mauzadar* there is no other authority ?

A.—No.

Professor Burnett-Hurst.—*Q.*—If you used a *Mauzadar* to collect information would not the people be rather afraid of giving it to him because he might use it against them ?

A.—At present the *Mauzadars* have little opportunity to exploit the rayats. They can only realise the revenue but they have no opportunity to extort.

Q.—If a *mauzadar* approaches the individual householder with a view to ascertaining the individual's income, do you not think that the people would be suspicious and would they give accurate information ?

A.—I think there is not much cause to be afraid because in doing that the *mauzadars* will do simply what the income-tax officers are doing.

Q.—But the income-tax officers don't go to the rayat ?

A.—For the purpose of ascertaining their income, they have to go to the rayats. In most cases the information is given to the income-tax officers by the *mauzadars*.

Q.—Whose income ?

A.—The rayats'.

Q.—They are land revenue payers ?

A.—They have various sources of income and the income-tax officers must ascertain that. The income-tax officers are not to confine themselves to the urban people.

Q.—Quite true. They have got to go to rural areas ?

A.—Yes. There are other people in addition. So it is an anomalous process.

Mr. Kaul.—*A.*—We are not able to test that.

Chairman.—*Q.*—What statistics do you need most ?

A.—What we are most interested in is the outturn of crops and in the business quarters the returns are generally regarded as of very doubtful value.

Q.—What other statistics are there which other countries have, which you would like to have ?

A.—I do not think that, apart from that, there is anything of importance. What we would like is a bit more expedition in the issue of reports. They are held up, sometimes, even after they are written.

Q.—These crop reports are issued late ?

A.—I don't think that applies only to the crop reports. They are issued as soon as they obtain information, but the annual Statistics on Banks are issued 18 months after the period to which they refer ; the Annual Review of India's Foreign Trade, issued by the Director of Intelligence, is also belated.

Q.—So far as Commercial Statistics are concerned, are you satisfied ?

A.—Yes.

Q.—Trade and Transportation ?

A.—They are very satisfactory.

Q.—Industries ? You have no information about industries except what you collect yourselves from firms like Rallis ?

A.—I think in regard to the reports on " Prices and Wages ", as previous witnesses have said, there is very little reliance to be placed upon them.

Q.—What other additions, omissions, or alterations are required ?

A.—It was the custom a few years ago for Reports of the Currency Departments to be issued in each of the provinces. That has been recently discontinued, but those reports are useful.

Q.—There was a report issued by the Currency Office in Bombay and one in Madras ?

A.—Yes. Those have been discontinued and now we receive the reports of the Controller of Currency attached to the Government of India. The provincial analyses have been discontinued.

Q.—Is it desirable to renew them ?

A.—I think so.

Q.—Any others ?

A.—I don't think so.

Q.—About the condition of the people,—a report on the economic condition of the people ?

A.—I say that can only be achieved by establishing a special department which will be able to get together materials over a period of years ; I mean a department that will always be in operation ; and not merely an occasional and spasmodic enquiry. You will then be able to check the figure of one year against another.

Q.—Continuously ?

A.—Yes.

Q.—So in Assam there are apart from landlords, rayats who have incomes which make them liable for income-tax ?

A.—Yes. There are very few.

Mr. Kaul.—Q.—The subordinate income-tax officers have to go and collect the information ; otherwise, these people have to be called to headquarters. The income-tax officers seldom go to a village to ascertain the income of a particular man ?

A.—The income-tax officers are informed by the *mauzadars* and if they find it necessary, they go into the village. In the first instance they are informed by *mauzadars* and sometimes some competent *mandals* are appointed.

Q.—What is a mandal ?

A.—A village surveyor.

Q.—You say the villagers are generally illiterate ?

A.—Oh, yes.

Q.—Suppose you ask them to make an intensive survey of the economic condition of the people and make enquiries about their family budgets, do you think they could undertake that after receiving a certain amount of instruction ?

A.—At present we can expect only a rough estimate.

Q.—We want a correct estimate. You say they are not sufficiently trained ?

A.—Certainly not.

Q.—How many men are there in a village capable of receiving training and how much training would they require to ascertain the information correctly ?

A.—No definite period can be stated. The people will take in general at least for from 10 or 20 years to come. The matter should be left to the village teachers and pundits.

Q.—Then you don't think that for 20 years the villagers would be able to conduct the enquiry ?

A.—Yes.

Q.—Till then you would have to use the school teachers, pundits and so on ?

A.—Yes. And the *Gaon burhas* and *Kanungos*.

Q.—What is a patwari ?

A.—A *mauza* is divided into circles and he is to survey certain circles and he has to prepare maps for them and the higher authorities look them over.

Q.—How would you ascertain the production of ghi and milk ?

A.—There is no large dairy worth the name in Assam.

Q.—There is a large production of milk.

A.—Not by the indigenous people but by the Nepalis and Sylheti people

Q.—They keep cattle ?

A.—Yes and the Nepalis keep buffaloes and they sell milk, curd and ghi but there is no dairy system.

Q.—If you want to ascertain how much ghi and milk they produce and how much they sell, how would you enquire ?

A.—An effort has already been made in the cattle census. Along with that they have attempted to ascertain the supply of milk.

Professor Burnett-Hurst.—*Q.*—Who ?

A.—The grazing inspectors.

Q.—Are those figures published at all ?

A.—In the Revenue Administration report of Assam. I obtained a reference to that.

Q.—But did you obtain any figures ?

A.—Yes, as to the number of buffaloes, cows and the possible amount of milk obtained from them. I think the system has obtained only for three years. Under the grazing inspectors some other agents have been appointed—some sub-agents.

Q.—Do you think that it would be possible to ascertain the economic condition of the people or would you require propaganda before the enquiry was started ?

A.—To a great extent this depends upon the officers. With good officers there should be no feeling of suspicion.

Q.—What sort of officers would you employ to conduct these enquiries ?

A.—The officers must be acquainted with the susceptibilities of the people and they must inform the people that as a result of their enquiry no further taxation is contemplated.

Q.—In certain parts of Assam there are people who are not exactly civilised ?

A.—Yes. They are the hill tribes.

Q.—Do you think it will be possible to ascertain the economic condition of those people ?

A.—There are some disadvantages as well as advantages because the domestic economy of the hill tribes is very simple and at the same time difficult to find out. As a sum total of the advantages and disadvantages it would not be impossible.

Q.—Is it not a fact that in certain parts of Assam they have not been able to carry out ordinary census operations ?

A.—There was some trouble in some out-of-the-way quarters but that was not taken as a general feature.

Q.—When you come to subjects which are more delicate or likely to arouse suspicion such as income, wealth, etc., do you not think there will be more trouble ?

A.—If the people are convinced that as a result of the enquiry no taxation or things like that are coming then there will be no ground for suspicion.

Q.—Don't you think that it will be extremely difficult to convince the hill tribes ?

A.—With the hill tribes there would be trouble but there would be less trouble if the matter is left to hill people,—the Gams or head men. If the matter is left to them for the first few years, there will be no trouble.

Q.—Do you think it could be left to these head men to collect statistics of value ?

A.—It will be rather rough at the beginning.

Q.—You think they will give information about their wealth ?

Chairman.—Wealth means their property.

Professor Burnett-Hurst.—Q.—Jewellery and whatever they possess ?

A.—We must remain satisfied with the report of the head men of the hill tribes. We may not obtain very accurate information at the beginning.

Q.—What about the middle class people ? What about the *bantias*, grain dealers and money lenders ?

A.—In Assam there is no special class of *bantias* and money lenders. It is the Marwaris who do all these things. They are the *bantias*, money lenders and grain dealers and, among the indigenous people, there is no such class.

Q.—Our terms of reference include the economic condition of the various classes of people. How would you ascertain the economic condition of these Marwari grain dealers, etc. ?

A.—Those money lenders generally live in the towns and they will give a hand in ascertaining the information.

Q.—Do you think that if you ask them for information they will give accurate information ?

A.—They may not give accurate information. But that trouble will apply everywhere.

Q.—Do you think that you will get that difficulty throughout India ?

A.—Not giving the definite income is rather a general feature and it is surely difficult to find out the accurate income. But it must be found out.

Q.—How ?

A.—There are various means of obtaining the income,—by consumption—by investigating their books—the general books.

Q.—Yes, but they keep three books ?

A.—Yes.

Q.—They may show you one book and keep the other two for their own personal use ? How are you going to get over that difficulty ?

A.—If a man is determined to hide his income, it is difficult to find it out.

Q.—That is, you say you are not likely to get accurate information from the people of the middle class ?

A.—I think that it will be fairly accurate for the people who live in towns and do big business. If not, then the whole theory of income in India is inaccurate.

Q.—There is considerable evasion of income-tax ?

A.—They do it.

Q.—So that if they evade the income-tax, they will evade in this case too ?

A.—They may try to do that but there is no help. In Assam there are planters and we cannot ascertain accurately the income of the planters.

Q.—You have probably seen the estimates made by various economists ?

A.—Yes.

Q.—Would you include the value of "services" that is to say, would you include the income of doctors, lawyers and professors ?

A.—It would be better if the system could be made so perfect as to include them.

Q.—The perfect system would be one which includes them ?

A.—Yes. But at present it would make the matter too anomalous.

Q.—But that is the perfect system in your opinion ?

A.—Yes.

Q.—Are you of opinion that a special intensive enquiry should be undertaken of tea garden labour ?

A.—It should be undertaken.

Q.—How are you going to ascertain their wages ? Directly from the individual or through the tea garden companies ?

A.—I don't think that the general rate of wages varies very much. There is not much difference between what the coolie says and what the tea garden manager says.

Q.—You don't think there is much difference between the statements of the coolies and the tea garden managers ?

A.—The manager himself does not pay every coolie. He has got his head babu and subordinate babus and those babus create trouble and the whole blame often rebounds to the manager. I have experience of some tea gardens and there the trouble comes from the head babu and the lower babus because they curtail the amounts. They fine the men Rs. 3 out of Rs. 5 but the books show that they have paid Rs. 5 and they keep the difference.

Mr. Kaul.—Q.—There is an enquiry now going on into the wages of tea garden coolies ?

A.—Not now but recently there was one and Mr. Andrews was there. At present there is no enquiry going on.

MR. R. W. BROCK, Chief Assistant Editor, "Capital", Calcutta.

Written Statement.

While unable to express an expert opinion on most of the technical points raised in the questionnaire I may, as a commercial journalist, offer a few general observations on the main issue referred to the Committee for decision.

As the cost of a general enquiry would run into large figures it is matter of some importance to secure an expert estimate of the approximate amount required. It is also important to fix financial responsibility. The enquiry having been initiated by the Government of India at the behest of the Legislative Assembly I assume no question will arise of trying to shift the burden to the shoulders of the Provincial Governments. Provincial enquiries may prove desirable but in that event it is essential to stipulate that they should be financed by special grants from central revenues. Unless the Government of India has given an assurance of a satisfactory nature on this point, the practical utility of the preliminary investigation now in progress is not self-evident. There are still 6 crores of provincial contributions to wipe out, and this, I suppose, will take at least another two years. Assuming the financial difficulty to be not insuperable, I suggest that besides being administratively difficult, and economically useless, a general economic enquiry would be politically dangerous inasmuch as like the taxation enquiry now proceeding, but to a much greater extent, it would lend itself both to deliberate misrepresentation and honest misunderstanding, even more perhaps to the latter than the former. I apply these objections specifically to the proposal of an itinerant all-India Commission. In favour of setting up permanent machinery for the gradual and systematic accumulation of data revealing the whole economic condition of the people there is, of course, much to be said.

But the question of method is all-important. To some extent it is a question of extending and improving existing agencies. Above all else, in view of the great predominance of agriculture among Indian industries, it is a question of securing *reliable statistics of crop outturns*. The commercial community, in its own narrow interests, has been pressing for reliable crop compilations for decades, in most cases without avail. In this direction recent years have brought not advance but retrogression. The Commercial Intelligence Department has been forced to curtail its staff, and the Bengal Government, by one of the meanest and most shortsighted economies of which any Administration in India has ever been guilty, has discontinued the small grant of twenty thousand rupees it formerly made towards the compilation of an accurate forecast of the jute crop. The Government of India leaves heavy and special taxation on agricultural staples like jute, cotton, rice, etc., but when the Provincial Directors of Agriculture go to Delhi to beg a few rupees to spend in improving the yield of these crops, and to assist in calculating their outturn, the Finance Member is "not at home". Directors of Agriculture, in fact, are not on his visiting list! Officially he treats them not only as beggars but as beggars unworthy of his consideration or charity. This attitude indexes the shortsighted neglect displayed by the Government of India in relation to the agricultural industry; incidentally it explains why reliable information is lacking concerning the exact economic condition of the agricultural

population. Taking the position as we find it, the question arises whether the money required to finance an economic enquiry throughout this vast country could not be spent, with greater profit to the agricultural population, in other directions. It is a question of *relative urgency*. Whether the average income in India is fifty, a hundred, or a hundred and fifty rupees per head is less important than the adoption of means to lift the average, whatever it may be, to a higher level by utilising and straining every resource to increase agricultural production. If Government has money to spare, let it, therefore be spent, not on a barren economic investigation, but on extending the staff and equipment of the Agricultural Department which though spending less than a crore a year, can point to improved crops on five million acres yielding cultivators an accession to their previous incomes exceeding 5 crores per annum. In other words, *the present outlay on the Agricultural Department is yielding the country a yearly dividend of 500 per cent.* This fact illustrates what I mean by "relative urgency". If all the preceding objections to a general economic enquiry were rebutted, I would still fall back on my plea that the country can spend its money more profitably in other directions. Upon railways yielding an average profit of 5 per cent. per annum the Government of India are spending 30 crores per annum. On the Agricultural Department, which as I have shown, yields a dividend of 500 per cent. it restricts its outlay to 8½ lakhs. Where is their sense of proportion? It is to the Agricultural Departments the country must look not only to increase agricultural productivity, and thereby raise the average income to a level meeting both individual and national needs, but also to compile *accurate crop outturn reports which must be available for a series of years before any serious economic enquiry can really be undertaken.* These functions the Agricultural Departments can fulfil only as the sequel to a considerable increase in their present financial resources. For these, and other reasons of a more general nature, *the appointment of a Rural Development Commission, charged to ascertain the possible methods of accelerating the growth of heavier-yielding and better-quality crops in India, would serve an extremely useful purpose.* We have had the Industrial Commission, the Fiscal Commission, and the introduction of Protective tariffs in the interest of urban industries, but of any official or public interest in rural development there has not been a sign. All this points to a lack of economic balance; a lopsidedness not only of thought but of actual development.

In the event of small economic surveys being undertaken, the Co-operative Department, with its comprehensive organisation and 2½ million members, should be in the best position to undertake them. I suggest that investigating officers be placed on special duty in the Co-operative Department to collate the data available in the departmental archives, and initiate intensive studies in carefully selected areas.

In respect of permanent machinery for accumulating economic data I would suggest that enquiries—to be effective—must conform to three requirements :

- (a) they must be provincial in scope and control
- (b) continuous in operation
- (c) be conducted by expert economists and statisticians concerned solely to secure and publish the facts irrespective of economic theories or political bias.

Towards complying with these requirements it would appear that four steps could be taken :

- (1) The combined Commercial Intelligence and Statistics Departments should be financed and staffed on the scale operative prior to the retrenchments effected at the instance of the Incheape Committee.
- (2) In view of the large revenues obtained by the Government of India from special taxation on staple agricultural products, special grants should be allotted to the Agricultural Department for the purpose of securing improved forecasts and outturn reports. In recent years the jute forecasts have been in error to the extent of 30 to 50 per cent. As practically the whole of the jute crop comes to Calcutta it is possible to check the actual production by exports and mill consumption. In the case of a crop like wheat only a small percentage of which is exported, there is no such check, and with this and many other crops the official estimates of production must be largely guesswork.
- (3) Establishment in Bengal, Madras and Burma of new departments attached to the Provincial Governments modelled upon the Labour Office at Bombay, modified by any recommendations this Committee may make as the result of the present enquiry.
- (4) The appointment—in relation to each and all of the great staple crops—of representative committees modelled on the Central Cotton Committee, which, while accumulating invaluable data concerning cotton production in all its aspects, is simultaneously engaged in harnessing every scientific resource to the improvement of the cotton crop, and, *ipso facto*, the economic status of the cotton cultivator. Here enquiry and economic improvement are proceeding concurrently under a single direction. No indentation upon official resources is involved, the Cotton Committee raising its own funds by a small cess collected upon each bale of cotton. If other industries are not similarly organised it is because there is, in their case, no great driving force like Lancashire to force the Government of India to take action. From the rice export duty the Government of India derives a crore of rupees per annum. There are 80 million acres under rice. And there are, I suppose, only four or five economic botanists working to improve the quality and methods of rice cultivation. Their work is promising, but their number could be trebled and so vast is the crop, the outlay would probably prove a profitable investment. If 10 per cent. of the yield of the rice duty were allotted to the Agricultural Department for improvement of the rice crop, the stimulus to production, in a few years, would be immense. I am aware of the immediate financial position of the Government of India ; my reference is to the lines of *future policy* which I suggest *should be directed to securing a rapid expansion in agricultural production with the triple purpose of improving the individual lot of the cultivator, increasing the purchasing-power of the agricultural population from the*

point of view of urban industries, and also of increasing the productivity of taxation as the necessary preliminary to enabling the State to fulfil its many duties, now neglected mainly through lack of funds, and the impossibility of levying further taxation owing to the poverty of the great majority of the taxpaying community. As an investment yielding 500 per cent. per annum I repeat that the present outlay on the Agricultural Departments might well be doubled to the great advantage of the people and the State.

Oral evidence, the 16th April 1925.

Chairman.—Q.—As regards public finance how does it come into an economic survey? Of course, that is the root of all problems?

A.—Yes.

Q.—Have you ever had an opportunity of calculating the percentage of taxation to the total income of the people of this country? Mr. Findlay Shirras puts the latter at 2,200 crores?

A.—I think that most of those estimates are only guess-work. For instance in regard to the main industry of the country—agriculture, if we take the bulk of the reports of the Agricultural Department in regard to outturn, they are very very unreliable. In the case of the jute crop, almost the whole of the crop happens to come into one city, viz. Calcutta and therefore we are able to check the reports of the department. In the last 3 or 4 years, the estimates were out by a percentage of between 35 and 40. Now if that is the case in the Jute crop (where the whole of the crop is exported or used in the mills in Calcutta, and can be checked) what is the position of a crop such as wheat, of which seven-eighths is used in the country?

Q.—Could you get an idea from the number of acres? You have a population of 250 millions and you have nearly as many acres under cultivation so from the produce per acre under cultivation you should be able to make a rough estimate?

A.—If that was the case you would be able to estimate the output of the jute crop because you know the acreage and the yield but in spite of that fact you are unable to secure the accurate estimate.

Q.—Would it be of any value to us to have the wealth of the country calculated?

A.—Well I take this point of view that whether the average income of individuals in India is 100 or 150. I think we might very well be content to believe that it is insufficient and we should direct our energies to increasing production. Supposing you spent on this enquiry, say, half a crore, you are not any better off at the end than you were at the beginning.

Q.—Are you in favour of this economic enquiry?

A.—I think not, unless you can conduct an efficient enquiry, and you can only conduct an efficient enquiry if you incur a large expenditure.

Q.—They spend a great deal of money elsewhere?

A.—What is the position of the Government of India, who would have to find the funds for a general enquiry? They are under an obligation to wipe out Provincial contributions. Are they able to find the funds for an Economic Enquiry?

Q.—You mean this is not a thing which will bring money to anybody at once ?

A.—Yes.

Q.—Would not an enquiry give you an idea of how to develop the country hereafter ?

A.—If I may proceed from that and say that, if the funds are available for an enquiry what would be the method ? Will the matter be referred to a Royal Commission which will conduct an enquiry ? Or is it to be conducted by the provinces ?

Q.—Yes, with general supervision from the top.

A.—That means the institution of a similar system as the Labour Office in Bombay ?

Q.—The whole thing may be centralised ?

A.—It would be a great advantage if each Province possessed a Labour Office on the lines of Bombay.

Prof. Burnett-Hurst.—**Q.**—Would not the Provincial Bureau have to be under the control of the Central Bureau if the Central Government was financing it ?

A.—It all depends on what was the basis of the grant. Is the Government of India going to hand over to the provincial administrations a percentage of the revenue leaving the Provincial Government to finance the Labour Offices in that case it would be a provincial undertaking. But whether under the direct control of the provincial or central government, they would be working for the country, and would no doubt accept a policy of co-ordination.

Q.—That is essential. Uniformity must be observed.

A.—Quite so, and I think one of the objects of your enquiry should be to lay down the lines on which an enquiry, if sanctioned would proceed.

Q.—Were you in Madras in 1921 when the Madras Government carried out a Wage Census ? It was carried out by Mr. Paddison and it failed because employers would not give returns.

A.—That is the difficulty.

Chairman.—**Q.**—Could we make a complete survey of the national wealth of India including the capital invested in the country ?

A.—I do not know how you are going to do it.

Prof. Burnett-Hurst.—**Q.**—Would it not be extremely difficult to ascertain individual incomes of persons belonging to the middle class and upper classes ?

A.—I think that they will be inclined to regard it as a dodge of the income-tax department.

Chairman.—**Q.**—You think if the department is armed with inquisitorial powers, there would be a lot of unpopularity ?

A.—Yes.

Q.—That is the same in every country ?

A.—Yes. In regard to all the principal industries I have urged in my notes that there should be formed an organisation on the lines of the Cotton Committee. There you have the finest piece of economic organisation to be found in any country.

Prof. Burnett-Hurst.—**Q.**—The Central Cotton Committee ?

A.—It is an all-India organisation in the sense that it is a representative of the whole industry. The meetings are held in Bombay. That is an organisation which in the course of a very few years will be able to collect fairly exhaustive information of the industry with which it deals. They are accumulating quite a lot of information. If you have an organisation of that sort in regard to jute, wheat, rice, and all the principal products, you will not only be able to collect information but also bring together representative organisations to assist the efforts of the Agricultural Department and develop industries. It is one of the features of the cotton organisation that it does not involve any outlay by the Government.

Chairman.—Q.—You collect a lot of statistics and figures and you are financed by the industry ?

A.—Yes.

Q.—How are we to know the total capital invested in industries or the capital invested in commercial concerns ? Is it necessary to have legislative powers to collect it ?

A.—Yes.

Q.—Is it desirable to collect that ?

A.—Yes.

A.—I think that might be done. It would involve very little outlay.

Prof. Burnett-Hurst.—Q.—It was suggested at one time that we might utilise the figures published in "Capital", which are obtained from the producers of the minor commercial products and ask them to supply Government with production figures. Do you think that at all feasible ?

A.—No, I think not.

Q.—A question was put to me when I was examined by the Taxation Committee (I think it was Dr. Hyder who asked the question) "Could not those figures be utilised ?" I expressed the opinion that I did not believe it was possible.

A.—I should not think it possible. I don't think any firm would be in a position to give you absolute reliable information about crops.

Chairman.—Q.—Is it possible to prepare for this country rough estimates of production, income and wealth ?

A.—It is too risky.

Q.—They do it in other countries ?

A.—I don't think they have a reliable means of making the estimate. They are only rough calculations.

Prof. Burnett-Hurst.—Q.—Do you happen to know the system adopted by Rallis, Volkarts and other firms for reporting crops ?

A.—Except that they have agents in the districts and they secure their estimates and if you have, as they have, hundreds of agents, throughout the country, you might be able to do it. They take as much interest in the Government figures as anybody else.

Mr. Kaul.—Q.—Even their estimates are based on hearsay ? I know they come to my village and ask if the yield is to be more or less than usual.

A.—Yes.

Chairman.—Q.—It is better than none.

Mr. Kaul.—A.—We are not able to test that.

Chairman.—Q.—What statistics do you need most ?

A.—What we are most interested in is the outturn of crops and in the business quarters the returns are generally regarded as of very doubtful value.

Q.—What other statistics are there which other countries have, which you would like to have ?

A.—I do not think that, apart from that, there is anything of importance. What we would like is a bit more expedition in the issue of reports. They are held up, sometimes, even after they are written.

Q.—These crop reports are issued late ?

A.—I don't think that applies only to the crop reports. They are issued as soon as they obtain information, but the annual Statistics on Banks are issued 18 months after the period to which they refer ; the Annual Review of India's Foreign Trade, issued by the Director of Intelligence, is also belated.

Q.—So far as Commercial Statistics are concerned, are you satisfied ?

A.—Yes.

Q.—Trade and Transportation ?

A.—They are very satisfactory.

Q.—Industries ? You have no information about industries except what you collect yourselves from firms like Rallis ?

A.—I think in regard to the reports on " Prices and Wages ", as previous witnesses have said, there is very little reliance to be placed upon them.

Q.—What other additions, omissions, or alterations are required ?

A.—It was the custom a few years ago for Reports of the Currency Departments to be issued in each of the provinces. That has been recently discontinued, but those reports are useful.

Q.—There was a report issued by the Currency Office in Bombay and one in Madras ?

A.—Yes. Those have been discontinued and now we receive the reports of the Controller of Currency attached to the Government of India. The provincial analyses have been discontinued.

Q.—Is it desirable to renew them ?

A.—I think so.

Q.—Any others ?

A.—I don't think so.

Q.—About the condition of the people,—a report on the economic condition of the people ?

A.—I say that can only be achieved by establishing a special department which will be able to get together materials over a period of years ; I mean a department that will always be in operation ; and not merely an occasional and spasmodic enquiry. You will then be able to check the figure of one year against another.

Q.—Continuously ?

A.—Yes.

BENGAL CHAMBER OF COMMERCE.

Written Statement.

Question 1.—If the Committee of the Chamber were of opinion that an enquiry on the lines proposed would be practicable and would yield results justifying the expense and labour involved, they would be prepared to agree that enquiries under the heads suggested would be sufficient, and they would not suggest the addition of any other subjects.

Questions 2 and 3.—The Committee have examined Sir Edward Gait's classification of occupations for the census of India, and they have compared it with the sub-division of occupations as given in appendix A. They are not quite sure that they correctly understand question No. 2, because it seems to them that the two classifications are founded on entirely different bases, and they do not see how Sir Edward Gait's classification can be used as a basis and the other classification applied to it. The classification in appendix A is, in point of fact, open to criticism; for it includes such industries as plantations and forestry as urban occupations.

But whatever classification may be adopted, it seems to the Committee that it would be utterly impossible—and that it will be so for many years—to attempt, with any prospect of success, to obtain estimates of the economic conditions of so many classes as are indicated in appendices A and G(a). It might certainly be possible to select one or two particular classes, such as clerks or mill-workers, as has already indeed been done in Bombay. Or again, with reference to question 3, a particular district might be selected, as was done by the late Mr. J. C. Jack, I.C.S., in his enquiry into the economic life of Faridpur. But to apply similar methods either to every class of the population, or to every district in the country, would be a very different proposition, and would involve the expenditure of enormous labour, time and money. In the opinion of the Committee any general conclusions based on the results of such enquiries could not possibly be even approximately accurate.

Question 4.—The Committee do not think that standards suitable for the Dominions and for European countries could be followed in India. It is one proposition to deal statistically with the peoples of Australia, with a population of, say, six millions and Canada with nine millions; in these cases the people can themselves furnish information on forms supplied to them. It is quite a different thing to attempt to deal similarly with British India, with its population of 250 millions, vast numbers of whom are illiterate, so that the information would have to be obtained by laborious personal interviews and house to house visits.

Questions 5 to 8.—The Committee propose to deal with questions 5—8 together and to answer them in general terms. It is the experience of the commercial community in Bengal that crop statistics as reported in India are not reliable, a result largely, if not entirely, due to the fact that the machinery for crop reporting is imperfect. The particular instance that naturally suggests itself to the Committee is that of the Government *jute* forecast, in which little confidence is placed. Representations have been made to Government on the subject from time to time, but these need not be referred to here in detail. It may, however, be mentioned that only two years ago *jute* interests had occasion to take serious exception to a

BENGAL CHAMBER OF COMMERCE.

Written Statement.

Question 1.—If the Committee of the Chamber were of opinion that an enquiry on the lines proposed would be practicable and would yield results justifying the expense and labour involved, they would be prepared to agree that enquiries under the heads suggested would be sufficient, and they would not suggest the addition of any other subjects.

Questions 2 and 3.—The Committee have examined Sir Edward Gait's classification of occupations for the census of India, and they have compared it with the sub-division of occupations as given in appendix A. They are not quite sure that they correctly understand question No. 2, because it seems to them that the two classifications are founded on entirely different bases, and they do not see how Sir Edward Gait's classification can be used as a basis and the other classification applied to it. The classification in appendix A is, in point of fact, open to criticism; for it includes such industries as plantations and forestry as urban occupations.

But whatever classification may be adopted, it seems to the Committee that it would be utterly impossible—and that it will be so for many years—to attempt, with any prospect of success, to obtain estimates of the economic conditions of so many classes as are indicated in appendices A and G(a). It might certainly be possible to select one or two particular classes, such as clerks or mill-workers, as has already indeed been done in Bombay. Or again, with reference to question 3, a particular district might be selected, as was done by the late Mr. J. C. Jack, I.C.S., in his enquiry into the economic life of Faridpur. But to apply similar methods either to every class of the population, or to every district in the country, would be a very different proposition, and would involve the expenditure of enormous labour, time and money. In the opinion of the Committee any general conclusions based on the results of such enquiries could not possibly be even approximately accurate.

Question 4.—The Committee do not think that standards suitable for the Dominions and for European countries could be followed in India. It is one proposition to deal statistically with the peoples of Australia, with a population of, say, six millions and Canada with nine millions; in these cases the people can themselves furnish information on forms supplied to them. It is quite a different thing to attempt to deal similarly with British India, with its population of 250 millions, vast numbers of whom are illiterate, so that the information would have to be obtained by laborious personal interviews and house to house visits.

Questions 5 to 8.—The Committee propose to deal with questions 5—8 together and to answer them in general terms. It is the experience of the commercial community in Bengal that crop statistics as reported in India are not reliable, a result largely, if not entirely, due to the fact that the machinery for crop reporting is imperfect. The particular instance that naturally suggests itself to the Committee is that of the Government jute forecast, in which little confidence is placed. Representations have been made to Government on the subject from time to time, but these need not be referred to here in detail. It may, however, be mentioned that only two years ago jute interests had occasion to take serious exception to a

trifling economy which the Government of Bengal effected in expenditure by discontinuing the employment of a staff of jute clerks engaged to check the estimates of the village *panchayats*, the total amount thus saved representing only Rs. 22,600 ; and the crop in respect of which this saving was effected had brought in to the Government of India, during the three preceding years, a direct revenue from export duty of nearly eight crores of rupees. This economy, it should be remarked, followed immediately on a succession of years during which the jute forecasts had been demonstrably far wrong. It is the considered opinion of the Committee of the Chamber that money would be far more profitably spent, from the point of view of the interests of the people of this country, in improving the accuracy of crop forecasts, than in embarking on an economic enquiry. It is, further, their opinion that the endeavours that have been made, without success hitherto, to obtain accurate crop estimates form a useful object lesson in regard to the difficulties that would be experienced in obtaining anything like accurate economic information. Jute forecast figures were formerly based on *chaukidari* estimates : for some years past they have been based on figures collected through the *panchayats*. In the course of years such collecting agencies might be expected to acquire sufficient experience to make their results reasonably accurate ; when the agencies have failed in this respect it is hardly to be expected that accurate information will be furnished as a result of enquiries directed to individuals without experience.

In question 7, enquiry is made as to whether information should be collected, even at extra cost, regarding minor crops such as vegetables, fruit, and so on. In the opinion of the Committee the cost of any attempt to collect such information would be entirely prohibitive ; and, at any rate, until cadastral surveys have been completed in every province, and probably even then, the figures would not be reliable.

Questions 9 to 13.—The Committee are not in a position to say whether the figures given in the cattle, etc., census of 1919-20 are, or not, reliable. But they cannot conceive of any system that would make it possible to collect accurate data in regard to the production, in this vast country, of such things as milk, butter, curd, eggs, honey, and the other articles specified in questions 10 and 12.

Questions 18 to 21.—In these questions enquiry is made *inter alia* as to whether steps should be taken to secure complete statistics of the production of both fresh water and sea fisheries. It is only necessary to state the question to realise how difficult it would be to collect the statistics.

Questions 22 and 23.—As is indicated in question 23, mines subject to the operation of the Indian Mines Act make certain returns to the Chief Inspector of Mines ; and the Director of the Geological Survey of India supplements these by the returns sent to him by local Governments and Political Officers for non-Act and Indian States mines. The Committee are of opinion that it would be a difficult and an expensive matter to arrange for the collection of full particulars regarding the various minerals specified in Appendix E and they do not think that the results would justify the expense.

Question 24.—The Committee do not see what purpose would be served by collecting statistics relating to the value of machinery.

Question 25.—The Committee are inclined to think that, except in the case of one or two large concerns quarrying coal by mechanical means,

the results which would be obtained by endeavouring to collect this information would be comparatively negligible, and not such as to justify the cost and trouble involved.

Question 26.—The Committee consider that, for such statistical purposes, the value at the mine is the correct basis to take. At the time when the return is made, a considerable proportion of the output to which the return relates is probably in stock and unsold. Its value to the colliery for statistical purposes might therefore be based on the raising cost, and not taken at an arbitrary market value which may be very different from the figure at which the coal is ultimately sold.

Questions 27 and 28.—The Committee answer question 27 and 28 in the negative.

Question 29.—The Committee are not in favour of introducing legislation in favour of the compulsory submission, by employers, of returns of production.

Questions 30 and 31.—The Committee do not advocate the institution of a regular census of industrial production. They are of opinion that the expense of such a census, even if contemplated only once in five years, would be prohibitive.

Questions 32 and 33.—If the information regarding industrial production is to be collected at all—and, as is explained above, the Committee do not consider it should be—it is of the utmost importance that the leakage of information should be reduced to a minimum, and if it is thought that an imperial statistical organisation would be more efficient in preventing leakage than a provincial organisation, the former would be preferable. It might be necessary to introduce a system under which individual employers would submit their returns not by name but by a cipher letter known only to the employer and to the heads of the statistical department.

Question 34.—The Committee's answer to the first question is yes.

Question 35.—If a census were to be taken on one of these three bases the Committee think that the one mentioned in (b) would be most suitable.

Question 36.—The information under all these heads could be given with the exception of (e), and information under (e) could be given in the same form as it is stated in the published accounts of companies; private employers would perhaps be able to give the information under this head in the same way.

Questions 37 to 39.—The Committee do not think that data could possibly be collected which would give figures of any accuracy with regard to the production, value, wages and hours of work in connection with cottage industries.

Questions 40 and 41.—In the opinion of the Committee the returns given in *Prices and Wages in India* are unsatisfactory. They consider that the agency which at present collects statistics of wages in agricultural areas does not supply accurate returns, but they cannot suggest any system which would in their opinion make it possible to collect such figures on a reasonably accurate basis.

Question 42.—It seems to the Committee that, if each province were to be left to decide its own system of classification, any purpose that the returns might serve would be very largely discounted because of the great

difficulty there would be in reducing the figures of different provinces to a common basis so as to enable these to be collated.

Questions 43 and 44.—The point raised in these questions is one of great difficulty. To take an instance, such a fully organised industry as the tea-producing industry finds this a serious problem to deal with. There may be 900 workers living on a tea garden, but the average attendance at work at the same time on the garden may never exceed 600. Some of the labour force work hard on the garden, others work moderately hard, others do no more than a bare minimum. On the other hand some of those who do very little work on the garden may work hard cultivating their own bit of land or, if owning no land themselves, may do some work on the garden and some work on someone else's land. The same difficulty will be found in connection with jute cultivation. "At harvest time", said Jack in *The Economic Life of a Bengal District* "a considerable proportion of all cultivators work for hire, some even engaging labour to cut their own crops and going off themselves as labourers to cut the crops of other people."

Question 51.—The Committee consider that it would be quite impossible to ascertain, with any degree of reliability, the hours of labour of agricultural workers.

Questions 52 to 56.—As they have stated above—in the answer to question No. 40—the Committee regard the statistics given in *Prices and Wages in India* as unreliable.

Questions 57 and 58.—It is only in the case of specific, well organised industries that an enquiry is likely to produce reliable results. So far as they are concerned the Committee would not themselves take exception to providing such information as may be considered desirable and necessary, but they do not see that, on the limited basis on which the work would alone be possible, it would help very far towards supplying the material necessary for framing an estimate of the economic condition of the people of British India.

The Committee agree that legislation would be necessary to secure the statistics referred to.

Question 59.—For statistical purposes a common denominator is certainly desirable, and on the whole the day is perhaps the unit most suitable to the conditions of this country for recording wages.

Question 60.—Yes, the Committee consider that it would be necessary to ascertain the number of days worked, and the earnings. But in view of the very large turnover of hands in the large industrial establishments, it would, they think, be extremely difficult to arrive at the actual number of days worked, and the earnings of each individual worker over any extended period.

Question 61.—The practice mentioned in question 61 presents one of the main difficulties which must always stand in the way of arriving at any reliable statistics of wages in large industrial establishments.

Question 62.—The Committee have examined the list of estimates of the national income of India as given in Appendix I. Taking those for the years since 1911, there are ten estimates of the income of British India. Horne estimates the income in 1911 at Rs. 42 per head, while Findlay Shirras, for the same year, estimates it on one system of calculation at Rs. 50, and on another system at Rs. 80, while

Sir B. N. Sarma puts it at Rs. 80. Wadia and Joshi for the year 1913-14 estimate it at Rs. 44½. Lupton's estimate for 1919-20 is Rs. 114 against Shah's figure of Rs. 46 for 1921-22, Sir B. N. Sarma's estimates of over Rs. 100 for 1921, and Shirras's figure of Rs. 107 for the latter year and Rs. 116 for 1922.

The Committee agree with the suggestion that the wide diversity seen in these figures is due to the part played by assumptions from very imperfect data. But they regret that they can make no suggestion as to any method that can be adopted which would give anything like reliable results.

Question 63.—The material to be handled in India is so vastly out of all proportion as compared with that in Australia that the Committee, without having any intimate acquaintance with the methods used in Australia for the income census of 1914-15, find it difficult to believe that similar methods could usefully be adopted in this country.

Question 64.—The Committee cannot offer any suggestions on this point. When discussing the family budget Jack, in *The Economic Life of a Bengal District*, took the family as the unit, but it is possible that in other districts other units would be more suitable. In any case it seems to the Committee that this question is complicated to a considerable extent by the existence of the joint family system.

Questions 65 and 66.—In their reply to question No. 59 above the Committee have stated that on the whole the day is perhaps the unit most suitable to the conditions of this country for recording wages. But in making any attempt to estimate income a longer unit of time than the day would obviously have to be adopted, and on the whole they are inclined to think that the year must be adopted.

Question 67.—The Committee answer this question in the negative.

Question 68.—The Committee are of opinion that it would be absolutely impossible to adopt methods (d) and (e) in this country because they feel that the people themselves would never tolerate the inquisitorial questions that would have to be put to them.

Questions 70 to 74.—The same objections apply to the collection of the information referred to in questions 70 to 74. In addition to these objections there is the very great one of the enormous expense that would be involved in making any serious effort to collate the information. Taking these objections together the Committee are satisfied that no useful purpose would be served by making the attempt.

Question 75.—The Committee are opposed to the suggestion that rough estimates should be taken as a basis for the collection of the statistics. In matters of this kind rough estimates are dangerous, besides being unsatisfactory, and in most cases it would be difficult to arrive at any figures that could be even approximately correct, while it would be so impossible to apply to them any test of accuracy that the Committee strongly deprecate any attempt being made to obtain rough estimates.

Question 79.—It follows from their replies to questions Nos. 65 and 66 that the Committee would consider it necessary to record the expenditure of a householder continuously for a year if any attempt were made to obtain a budget which would reflect normal conditions. The impossibility of obtaining such figures for a year is obvious, for there can be very few householders in India who keep a continuous note of their detailed expenditure for a year.

Question 81.—The expenditure on such items should be included among the items of expenditure in a family budget only in so far as such expenditure is necessary to enable the particular person or family concerned to conform to his or their standard of living.

Questions 83 to 86.—The Committee answer these questions generally by saying that they cannot see how it would be possible to ascertain information regarding indebtedness.

Questions 78 to 93.—Answering the questions in this section also in general terms, the Committee cannot think that it would be possible to collect the information under all the heads enumerated. In the case of well organised industries, such as factories, coal mines, and so on, it might be possible to obtain some of the information but so far as the population generally is concerned the Committee are satisfied that it would be found impossible to make any headway. An initial survey of the kind would take years of work without any prospect of success, and the Committee therefore recommend that any question of attempting to undertake it should be abandoned.

Questions 94 to 97.—For the same reasons the Committee are strongly of opinion that any question of making periodical surveys should be dropped.

Questions 98 to 101, 102 and 103, 104 and 105.—In view of their replies to the preceding questions, the Committee do not think it would serve any useful purpose for them to attempt to formulate answers to the questions in these four sections.

The Committee desire to say that they have endeavoured to answer as many of the questions as possible, but—as will be observed from the replies themselves—their general feeling is that an enquiry on the lines suggested holds no prospect whatever of a successful issue in a country covering such a vast area as India, and with a population so largely illiterate and of so many widely divergent types. As the Committee have explained in their replies to some of the questions, they consider many of the statistics now issued to be unreliable, and in their view it would serve a more useful purpose, if, for the present, all idea of an economic survey that can lead nowhere were dropped, and a serious endeavour made to improve the collection of trade and other statistics, particularly those relating to large organised industries. A work of this description would be of real value to the commerce and trade of the country, and therefore to the country as a whole, and it would provide economists with reliable material; it should, the Committee consider, precede any attempt to make an economic survey of the whole country.

MARWARI CHAMBER OF COMMERCE, CALCUTTA.

*Written Statement.**General.*

Question 1.—The heads mentioned in the question are not sufficient to give an idea of the economic condition of the people specially in rural areas. Information is also necessary on :—

- (1) Average holdings and method of cultivation.
- (2) Vital Statistics (Economic efficiency on strength, vitality and energy on one hand and mental equipment on the other).
- (3) Taxation and other obligation to pay.
- (4) Natural environment.
- (5) Emigration and Immigration.
- (6) General level of education and such other.

In short inquiries conducted on the lines shown in the following publications will be suitable.

1. Jack—Economic life of a Bengal district,
2. Slater—Some South Indian villages,
3. Calvert—Wealth and welfare of the Punjab,
4. Harold Mann—Land and Labour in a Deccan village,
5. Wadia and Joshi—Wealth of India and others.

Question 2.—Sir Edward Gait's classification may serve the purpose but a very good classification is also given in Wadia and Joshi's *Wealth of India*. So far as the industrial classification is concerned a good classification may be seen in the Report of the British Empire statistical conference. Each class is to be further sub-divided into groups, comfortable, below indigence, etc., as Mr. Jack's inquiries.

Question 3.—Yes. Mr. K. L. Dutta's classification may be more elaborate but as rainfall is the most important factor in the economic life of the country, we prefer rainfall divisions as given in Sir Edward Gait's table. Of course they also can be further improved.

Question 4.—In the present state of our organisation, equipment education and resources, it will be impossible to follow the standard laid down by the Resolutions of the Imperial Statistical Conferences of 1920. Thus for agricultural statistics they want information on :—

1. Agricultural and pastoral production.
2. Forest and forest produce.
3. Quinquennial census to supplement incomplete annual returns.
4. Prile and seasonal movements.
5. Crop forecasts.
6. Fisheries.
7. Returns of stocks.
8. Land tenure and irrigation.

9. Agricultural values.

10. Seasonal variations of agriculture production, etc. Our agricultural statistics are by the best and most reliable but yet they fall, to an extent, short of the requirements. Again in population statistics they want information on

- (i) *De facto* Population.
- (ii) Divorcee.
- (iii) Fertility (Duration of marriage, number of children born of).
- (iv) Occupation of Industries.
- (v) Aliens.
- (vi) Infirmities.
- (vii) Elaborate vital statistics too.

It is impossible to get all the information at the present stage.

Production.

Question 5.—The returns are generally very unreliable. The primary data are supplied by ill-paid, irresponsible and ignorant people and are something worse than even guess work. When the primary data are wrong in a statistical calculation, no amount of analysis will improve matters. Even when the District Revenue staff is engaged in collecting these then results are unsatisfactory. As is well known, previous to 1925, the average yield per acre of principal crops, used to be determined by the work which was entrusted in the hand of the agricultural Depot. The position has not, however, improved much. The Department report asserts that the statistics for Jute are very accurate but we know that the Government estimates in recent years have been ridiculously incorrect. The returns for other agricultural products must be worse.

Question 6.—So far as Bengal is concerned the position can be improved by entrusting the work in the hand of the Union Boards where it is possible to find educated and responsible people. If necessary they may be given a grant for the peasants for these inquiries and then there will be no difficulty in getting correct figures.

Question 7.—We do not think that any useful purpose will be served, at the present stage of our economic development, by collecting these data which are sure to be incorrect.

Question 8.—See answer (6).

Question 9.—No, the primary data were incorrect. More reliable information can be obtained in Bengal with the help of (1) Union Boards where these exist (2) Landlords. They may be required to submit a statement about the cattle, livestock, ploughs, etc., within their Zemindary.

Fairly accurate results may be obtained if these enquiries be conducted when population census is taken. The officials entrusted with this latter charge are fairly intelligent people and there will be no difficulty in beforehand. There is no particular advantage or necessity of a quinquennial cattle census. That can be safely taken once in ten years.

Question 10.—Approximate estimates of (b) (d) and (c) can be obtained from the collecting centres of these articles. These are generally collected by particular classes of the people either for export purposes or

for local consumption. They may be required to submit returns of their collections. Estimate for (c) can also be obtained from the export figures and the approximate amount of home consumption. It is, however, impossible to guess the volume of (a) and (f).

Question 11.—No. Items like (f) not at all necessary. We may say that even items like (a) will serve no useful purpose. For an economic inquiry statistics mainly of commodities which are imported or exported or largely consumed by the people should be compiled. This however, cannot be said of items like (a).

Question 12.—It is difficult, if not impossible, to secure even approximate, not to speak of accurate data for their substances. Only very crude data may be obtained with the help of Union Board about (a), (e), (f), (g) and (k). Item (g) being mainly intended for European consumption and produced by special people, and approximate estimate can be formed about the production.

Question 13.—No. Even all those mentioned in 12 are not necessary.

Question 14.—They are given in the "statistics relating to first administration in India" published by the Government of India. There is no reason why these figures cannot be obtained.

Question 15.—It is only too well known that purchasers who remove the largest portion of the forest produce take away more than what they buy. If this practice can be checked, a fairly accurate return is possible.

Question 16.—Generally speaking, accounts of the following are kept. Bamboo, Fodder, Golpata, Honey comb, Wax, Thach, Grass, Canes, Stones Chalmugra Seed, Ivory, Elephant, Resins and Turpentine (from factories), Lac, Honey and others. With the above mentioned defect remedied the returns can be made fairly accurate. Even if it is possible, it is not desirable to spend much for getting the remaining items, as they will not serve any purpose at this stage.

Question 17.—(a) No. (b) The private owners may be required to submit periodic statements but the statistical values of these are not expected to be great.

Fisheries :—

Questions 18 to 21.—It is desirable that information should be secured on the subject ; the difficulties in connection with inland fisheries are enormous and it seems well nigh impossible to obtain any reliable data for the purpose. In case of sea fisheries the difficulties are much less. The collecting centres and subsidiary industries are situated in particular localities, and fairly reliable data can be obtained by an efficient establishment like the Madras Department of Fisheries. This department regularly collects information on the quantity and value of the products of the subsidiary industries, e.g., fish curing and canning, pearl oysters, chanks, beche de mer, etc. Sea fisheries of Madras are by far the best development in India and those of Bombay are also coming into prominence. If the fishery department is well organised as in Madras, then statistics of subsidiary industries can be easily obtained. More important of them, i.e., the pearl fisheries are in many places Government monopolies and accurate figures of their products are within reach.

Question 22.—Yes, only when the value of the produce exceeds a minimum limit. The Chief Inspector of Mines can be entrusted with the work.

Question 23.—Yes for all minerals concerning under the reply to 22.

Question 24.—Yes, the capital of the concerns gives the idea.

Question 25.—Yes.

Question 26.—No. The present system is better. In these days of high plights and numerous obstacles there is nothing like “Market price in a country.” The so-called market prices, specially of heavy minerals, give no idea of the actual cost of production or any other data.

Question 27.—Details of many industries in F (2) are given in the “Large Industrial Establishment” published by the Government of India. Useful information regarding some of them can also be obtained from the periodic publications of the Industries Department of the different provinces.

Question 28.—No. On the other hand the names of some concerns like the tailoring shops, bidi factories, etc., can be safely omitted.

Question 29.—If necessary, legal powers for obtaining the information should be taken.

Question 30.—In the transitional stage of the industrial development, it is desirable that annual statistics of industrial production should be obtained. Failing that longer periods may be taken but in no case it should exceed a period of 3 years.

Question 31.—It should be as detailed as possible.

Question 32.—Information should be obtained through provincial organisations. The function of the Imperial organisation will be to direct and co-ordinate such inquiries and analyse their results.

Question 33.—Manufacturing and other technical secrets will neither be given out nor published in returns and so there is no necessity for any such precaution.

Question 34.—As in the case of large industrial developments they are to be defined by the amount of capital they employ, number of labourers and the use of mechanical power.

Question 35.—The occupational classification seems to be the best as it will give an idea of the direction in the national energy.

Question 36.—Items like (h) can be omitted as no useful purpose will be served by them; the amount of fuel may be included in (f). On the other hand informations regarding the following should be secured.

(1) Housing and sanitary arrangement.

(2) Number of children and women employed.

(3) Sticks and their duration.

(4) Vital and other statistics about the labours. In (g) bonus and commissions should be included in (f). Origin of raw materials if possible.

Cottage Industries :—

Questions 37 to 39.—Difficulties are certainly great but these do not appear to be insuperable. They are certainly great but by co-operative societies, for particular industries, the necessary data can be easily secured. The work should be entrusted in the hand of the industries department with the help of Union Boards and other local institutions should take up the work of a general survey.

Wages :—

Question 40.—Not only for the reasons mentioned in the question, but also for the following, the figures published in the prices and wages in India are unsatisfactory.

1. There is no regularities in employment and hence the average is meaningless.

2. In many cases agricultural labourers are paid in kind “real” and “nominal” wages.

3. Seasonal and fluctuation in wages.

4. Differences of wages in different types of rural labour.

5. Extreme dependence in local conditions as rural labour is to a great extent unmobile. A more detailed information as regards “real” and “nominal” wages ought to be obtained.

Question 41.—The Union Board, co-operative societies and local landlords are in a better position than the existing agency to supply the information.

Question 42.—The classification by the Bombay labour office, *viz.*, field labour and ordinary labour, is better of the two. There is not much difference in the agricultural labour of the different province and so much their classifications with necessary alterations may be useful.

Question 43.—If possible frequency of employment should be taken, otherwise deductions will be meaningless. But it will be very difficult to secure the information.

Question 44.—Yes.

Question 45.—The present custom in most of the places is to give a fraction of the produce and so there is not much difficulty in ascertaining the money value provided the amount of the product and its prices are known.

Question 46.—By districts or by economic circles.

Question 47.—By finding out the bare cost of living of the classes and adding to the cost wages.

Question 48.—A median is primarily a numerical expression ; it can be said to be characteristic of other members of a series only in case they are uniformly dispersed about it. It divides the frequencies into equal parts and not the units to which they apply. On the other hand mode is that item in a series which is the most characteristic. It is then typical fact and is always represented. There are of course definite limitations for the mode to be an average as extreme limits frequently ignored and that mode can be to appear where there is really none but still this is better than median even with quartile measure of dispersion.

Question 49.—It may be but that is not much necessary for the enquiry.

Question 50.—There is no need for separate returns.

Question 51.—Yes.

Question 52.—Under the heading weavers, potters, thatchers, etc., should be included. In urban areas the number of petty industries are

numerous and if possible information about the more important of them should be collected.

Questions 53 and 54.—It is possible to get an approximate idea by the organised agencies ; the present data are not reliable.

Question 55.—Village. Village artisans are not nowadays paid in kind. The method of evaluating supplements, if there be any, may be similar to that followed in the case of agricultural labours.

Question 56.—It will be more difficult than in the case of agricultural labour as artisans frequently work at night.

Industrial Establishment.

Question 57.—Yes.

Question 58.—Yes if necessary.

Question 59.—“ Mouth ” may be taken as the limit with the following reservations.

Questions 60 & 61.—It is desirable to know what the labourers actually get. The average “ absence ” may be calculated from the attendance of the establishment and then the actual earnings, either by week or month may be calculated ; if possible “ real ” and “ nominal ” wages should be given.

Income.

Questions 62 & 63.—We do not pretend to be familiar with all the estimates given in Appendix 1 but from what we know about some of them it can be said that apart from the defects in the data due to inadequate materials, imperfect statistics and in some cases absence of all informations there are fundamental differences in the conception of national income. With the existing materials at the disposal we think that the calculation of Messrs. Wadia and Joshi in the “ Wealth of India ” to be the best and scientific, while Mr. Findlay Shirras’ result is a guesswork and the outcome of confused ideas. Of the three different methods of measuring the national income, *viz.*, the Income-tax method, the occupational census method, and the production method we think that the best results which will be obtained specially in India from the last. In a country where only a very small percentage of the people pay income-tax and where the occupational statistics are for all practical purposes not existent the only method to be relied on is the production method for which some data at best are available. This method is also better from the consideration that there is no danger of confusing the total aggregate income for the national income as is the case of the other two methods. The real national income is the money value of the goods produced and consumed within the country *plus* the money value of goods imported from outside, aggregate of individual income is not necessarily the same as the national income. To get an accurate idea of the national income the production census is to be perfected and price statistics improved.

Question 64.—The size and composition of the family being different in different parts of the country it is better to take individual as units. In Mr. Jack’s enquiry standard family was taken to be the enumeration.

Question 65.—Financial Year.

Question 66.—It makes no appreciable difference.

Wealth :—

We do not think that any accurate information on this subject is possible in the present stage. The result will be more or less a guesswork and of no use. We already possess such estimates. (Page 657 of the science of public finance by Mr. F. Shirras).

Question 68.—An attempt can be made with these methods, supplemented where possible by the inventory method. Where over 90 per cent. of the people are illiterate and there is the perpetual dread of increase in taxation it will be impossible to use the inventory method.

Question 69.—We have no criticisms to offer excepting that income necessary for consumption may not be confused with wealth.

Question 70.—The value of agricultural land is to be decided on the basis of sales price noted with revenue returns supplemented by the local enquiry.

Question 71.—The value obtained on the basis of rents will not be very much different from the actual value.

Question 73.—We do not advise.

Question 74.—We do not think so, but there is no alternative method.

Question 75.—The values of articles included within "public" wealth can be ascertained with greater accuracy than those of private wealth. If then the estimate from the latter is a rough one, that former will have no value.

Cost of Living :—

Question 76.—For urban areas the practice followed in Bombay is suitable. Population should be divided into income groups like the working classes, middle classes, etc., and when the mode of living is altogether different the European classes, representative family budgets are to be collected, proper weight given to the different items and then the index number calculated as usual. In the case of rural areas a good classification can be obtained from Mr. Jack's book in which he divides the population into four groups. In comfort, Below comfort, above indigence and indigence. If desired a general index number can also be prepared but that will serve no useful purpose when the mode and manner of life are so different.

Question 77.—There is no other alternative.

Questions 78 to 80.—The inquiry should be both extensive and intensive with typical families. The extensive method is to collect from a large number and typical families' budgets showing their incomes, the items of expenditure, and similar information. This should be done with 5 to 10 per cent. of the families in the unit and several such informations should be collected in the different parts of the year. This form of inquiries is to be supplemented by intensive inquiry in which a minute study of a particular family is to be effected by some person intimately acquainted with it. The ideal family for this study is the family which has the greatest number of the families similar to the field of choice and the enquiry is to continue for several weeks at a time and several such times in the year.

Question 81.—Yes it is different to get accurate figures in the case of drugs and drinks. In the case of ceremonies (Marriages, shradhs, etc.), the average expenditure on such occasions and the total is then by the number of years taken for the generation.

Question 82.—The only remedy is to place the charge in the hands of educated and responsible people. In certain areas it is not difficult at all and for rural areas the Union Boards can be entrusted with the work.

Indebtedness.

Question 83.—In addition to the sources mentioned a little information may be obtained from the registration departments where pro-notes, and bonds and similar deed are registered but neither this the usual practice nor are these "released" when the debt is repaid and the information from the source are very imperfect. There appears to be no way of ascertaining the indebtedness except by house to house inquiry; even then it is doubtful whether people will disclose their obligations. Another method may be to approach the money lenders of localities.

Question 84.—Family perhaps, is the most suitable unit for the purpose specially when the obligation is collected.

Question 85.—In addition to the data mentioned the following are else to be found out.

1. Chief cause of agricultural and other indebtedness.
2. Relation of the income of the debtor to the debt.
3. Organisation by which the debts may be easily extinguished.
4. Seasonal fluctuation of the debts.

Messrs. Wadia and Joshi mention the following census for the agricultural indebtedness:—

1. Less of equilibrium in this distribution in rural areas.
2. Application of western conception in property rights.
3. Land Tax.
4. Drain of Potential capital.
5. Extravagance and improvidence.

Adequate information should be secured on these points.

In Mr. Jack's book he has analysed the debt with reference to the income of debtors and has shown that nearly 90 per cent. of these debts can be paid off if there is a good co-operative organisation and land banks. Inquiries should be conducted in this direction.

Question 86.—If possible intensive inquiries should be undertaken in this connection. Results of extensive inquiries are not expected to be reliable.

Initial Economic Survey.

Question 87.—The organisation should be on the following line:

(a) A central organisation to direct and co-ordinate the all-India inquiry and to publish the all-India reports.

(b) Provincial organisations, in which departmental heads will find seats to undertake through head of departments, factory-Inspectors, heads of firms.

(a) Census of production (agricultural, mining, Industrial, Pastoral) extensive inquiry.

(b) Census of wages (all terms excepting the agricultural) extensive inquiry.

(c) Census of wealth—

(1) Public.

(2) Private if possible by extensive inquiry and to publish reports of provincial important. The province is to be divided into areas in which intensive inquiries are to be undertaken by local bodies like Union Boards, and president Panchayats under the direction of and collaboration with specially trained and appointed agents. They will undertake inquiry of subjects in section 1 with few alterations. The accurate collection of primary data is the most vital point of the Economic Inquiry and all possible efforts should be directed towards their end.

Extensive inquiry can be undertaken by the departments concerned of the Provincial Governments. Provincial organisations are to co-ordinate and direct such inquiries and also to receive, analyse, and publish the reports of local centres. Sir R. Hurry Rew. K.C.D., in the Presidential address of the Royal Statistical Society in 1920 said :

In undertaking an inquiry designed to ascertain facts in numerical forms concerning economic and social relations of the people there are five definite stages.

1. Organisation of the machinery of collection including the appointment of supervision of collections.
2. Arrangement of the Schedule or Questionnaire.
3. Examination, tabulation and analysis of returns.
4. Explanation and elucidatory comments of the results. Each department will be responsible for all stages except 5.

Question 88.—Yes, if it is possible the Union Boards and the President Panchayats may be entrusted with the work ; they will work under the direction of specially trained officers appointed for particular areas.

Question 89.—If the above system is accepted there is not much work in this direction left for the revenue agency ; moreover, experience has shown that the results obtained through the revenue agency are extremely unreliable.

Question 90.—There will be no need of house to house inquiry. The local agency (Union Boards, etc.), will be able to collect fairly accurate data.

Question 91.—Intensive Inquiry for the cost of living and merely recording answers to question for (c), (d) and (e).

Question 92.—As mentioned before local bodies like the Union Boards, President Panchayats and when these are non-existent, local association or even responsible individuals may be entrusted with this work of collection, they will work under the directions and collaboration of specially trained officers like the circle officers in Bengal, engaged for particular areas.

Question 93.—For the actual collection of data for the initial survey one year should be sufficient, for tabulation, analysis, and explanation another year. The special training of officers will also require some time. In any case the initial survey should not take more than two and half to 3 years. Afterwards periodical survey may be effected in much shorter periods. Roughly about Rs. 75,000 will be required for this economic survey of a district of average size in Bengal. It should be also less, in provinces where the density of population is less.

Question 94.—Yes.

Question 95.—Ten years. It will be both convenient and useful.

Question 96.—The present practice may continue. The informations annually collected now are certainly but exhaustive.

Question 97.—Agricultural and in manufacturing Industries—Textile. If possible mineral production.

Special Industries.

Question 98.—There is no such necessity of continuous records during intervals between the periodical surveys.

Question 99.—Yes as far as possible.

Question 100.—Yes.

Question 101.—Yes as we have already said there should be a central Board to direct and co-ordinate provincial organisations. In the provincial Board the representatives of the different administrative departments should find seats ; if necessary non-official experts should also be taken in. This Board will generally co-ordinate the work of different departments and when necessary publish the reports. This Board will be directly responsible for the periodic surveys and the local intensive inquiry in their connection.

Organisation.

Question 102.—Our views have already been expressed. There should be central and Provincial Bureaux of census and statistics but there is no necessity of district branches in normal times when the necessary annual data can be collected by the various departments. During periodical surveys such establishments are to be started.

Question 103.—Yes.

Legislation.

Question 104.—Yes. But one point we should like to pay particular stress upon. No form of legislation or coercion will enable these data to be collected, if the people are apathetic and suspicious of the motives of the authorities. They must be taken into confidence, treated kindly and made to realise that these have nothing to do with taxation or its enhancement about which they have perpetual dread. The usual stiff attitude of the officials in mufasil will certainly prove injurious to the inquiry. A new set of officers especially trained will be necessary for the periodic surveys.

Cost.

Question 105.—As we have said district branches are not necessary in normal times otherwise we approve of the suggestions.

Question 106.—Most of the Provincial Governments being hard pressed, funds for the cost of the initial survey may be conveniently borne by the central Government. As for the periodical surveys the central and provincial Governments may share the cost equally.

Question 107.—Municipalities may be asked to contribute lump sums for the cost of periodical surveys, according to their income.

Question 108.—The District Board may, but the villages will not, contribute anything to the cost of inquiry.

**Mr. J. C. MITRA, F.S.S., F.R.E.S., Professor of Economics and Commerce,
Calcutta.**

Written Statement.

Question 1.—Enquiries on these subjects may be sufficient provided they include subsidiary and allied subjects. For instance the subjects underlined red in the enclosed handbill* may be mixed up with the one or the other of the six heads mentioned.

Question 2.—I have no objection to adopt Sir Edward Gait's classification.

Question 3.—Yes, I would rather adopt Mr. K. L. Dutt's classification.

Question 4.—I don't think so.

Question 18.—Yes, I agree.

Question 29.—Yes.

Question 30.—Yes, every ten years.

Question 32.—Through provincial statistical organisations.

Question 33.—The officer in charge of the organisation should treat these returns as confidential.

Question 43.—It would be sufficient to obtain a return of monthly earnings.

Question 44.—Yes.

Question 47.—Quite possible. Most of the domestic servants in Bengal receive all these supplementals. This value may be ascertained by taking into consideration the expenses at the prevailing rate to be incurred by the employee if he be not employed with these supplementals.

Question 51.—Yes.

Question 55.—Yes.

Question 56.—It is now becoming possible day by day.

Question 57.—Yes.

Question 58.—Steps by legislation will have to be taken to secure the statistics.

Question 59.—“Month” should be taken as the unit.

Question 61.—Sometimes he is more profitably employed at his village and sometimes he takes rest. He may during such periods be considered to be on half wage.

Question 62.—Yes, I would select a large number of groups of representative villages and towns and ascertain the income of the residents by actual investigation on the spot. I would then check the result by working in other methods now adopted. The whole national income may thus be ascertained by taking these results as averages. I actually tried this method in my humble way (*vide*, page 1 and 2 of the pamphlet “A State Bank for India” enclosed herewith*).

Question 63.—I advocate the institution of an income census and would check the result by the above method, which though not up to date, is likely to give a definite result.

Question 64.—The family.

Question 65.—Financial year.

Question 66.—I would adopt the same unit for all.

Question 67.—There is practically no free gift even in villages now. If there is any I would assign no value to it.

Question 68.—I would give a trial to a combination of methods (*d*) and (*e*).

Question 69.—No.

Question 70.—As a result of local enquiry.

Question 71.—All householders to submit returns of value of their buildings. This is to be verified by local enquiry.

Question 72.—On the basis of rent.

Question 73.—Yes.

Question 74.—It may be fairly reliable but there should be some method of checking the replies (*vide* pages 7 and 8 of the pamphlet "A State Bank for India"*)).

Question 75.—Yes, the rough estimates may be checked by some means.

Question 78.—Information should be collected from typical families.

Question 79.—For at least 3 months.

Question 80.—10 per cent.

Question 81.—Some of these expenditures are almost compulsory and at least 10 per cent. should be added to the family budget for these items.

Question 84.—The family.

Question 85.—I approve.

Question 86.—By special intensive enquiries.

Question 87.—Nothing in particular.

Question 88.—I think it would be sufficient to ascertain the total production of the village. I would employ non-official agencies under expert guidance.

Question 89.—I have no objection to that.

Question 90.—They would be sufficiently reliable for the purpose provided the questions are put by men having the required training and in whom the people have confidence.

Question 91.—The enquiry should be by intensive study.

Question 92.—Non-official with a sprinkling of officials. I would agree with Professor Hamilton in this respect with certain modifications.

Question 93.—It depends on the number of agencies set up. I cannot give an idea of the cost.

Question 94.—Yes.

Question 95.—10 years. The periodical surveys should synchronize with the population census.

Question 96.—May be collected.

Question 98.—Yes, special enquiries might be continued during the interval.

Question 99.—Yes.

Question 100.—Yes.

Question 101.—Yes.

Question 102.—I would follow the dominion system.

Question 103.—Yes.

Question 104.—Yes.

Question 105.—I approve.

Question 106.—Half from the Imperial and half from the Provincial revenues.

Question 107.—Municipalities should not be burdened with this cost unless they receive a special grant for this purpose.

Question 108.—No.

Rai Bahadur J. M. MITRA, M.A., Registrar of Co-operative Societies,
Bengal.

Written Statement.

General.

Question 1.—In my opinion enquiries on these points would be sufficient.

Question 2.—I would adopt Sir Edward Gait's classification and have no suggestion to make.

Question 3.—I would prefer Mr. K. L. Datta's Division. Under this arrangement the Presidency of Bengal would be divided into more or less homogeneous tracts.

Question 4.—I see no objection to the adoption of the standards of the Dominions as laid down.

Production.

Questions 5 and 6.—Fairly reliable for practical purposes of comparison.

Question 7.—This question does not directly relate to Bengal but generally speaking, the statistics would be useful and more complete if figures for the minor crops could also be collected without entailing much extra cost.

Question 8.—The existing agency should be employed for this purpose also but the estimate so arrived at may be tested by enquiries made by local officers and also by information obtained from Co-operative Societies.

Question 9.—Fairly reliable.

Question 10.—Statistics regarding the pastoral products may be collected through the agency of municipalities in towns and of Unions Boards or Chaukidari Panchayets in rural areas.

Question 11.—None that I can think of.

Question 12.—In the manner suggested in reply to question 4 : a periodical census might be held to collect these figures.

Question 13.—No.

Questions 14 to 17.—These are questions for the Forest Department.

Question 18.—Yes ; it is very necessary that complete statistics should be obtained.

Question 19.—Information should be collected through the local administrative officers.

Question 20.—In Bengal there are no deep sea fisheries. As regards coastal fisheries information should be collected through the local administrative officers.

Question 21.—Through local administrative officers. As regards subsidiary industries in connection with chank fisheries, the information may be obtained through Co-operative Societies among these industrialists. There are several such societies in Dacca which is the most important seat of the industry in this Presidency.

Questions 22 to 26.—I am not competent to give any suggestion.

Questions 27 to 36.—These are questions for the Director of Industries.

Question 37.—I would suggest the following additions :—

Book-binding ; card-board ; box making ; electroplating ; manufacture of specially treated fabrics, such as tracing cloth, oil cloth etc. ; manufacture of fishing nets ; manufacture of fire-works ; manufacture of hookkas ; laundry ; manufacture of medicines ; manufacture of mineral waters ; picture framing ; printing (press) ; repairing works (mechanical) ; tin-smithy ; umbrella making ; conch-shell manufacture ; manufacture of shellac toys and sealing wax ; manufacture of tussar and waste-silk (matka, katia) weaving ; button manufacture (mother-of-pearls, horn, metal, leather, etc.) ; braid making ; combs (horn) ; embroidery (kashida) ; match industry ; manufacture of pen-holders ; pencil manufacture (lead and slate) ; jute spinning ; fish-oil manufacture (soft soap manufacture) ; jaggery making (from date juice and palm juice) ; sugar manufacture (from date juice and palm juice) ; manufacture of Hogla leaves mats ; manufacture of dorma mats ; manufacture of kurup (leaves for umbrella manufacture) ; manufacture of lime (slaked from ghooting stones) ; manufacture of naleha (hookka-pipes manufacture) ; pati (sital-pati) making ; reed (for loom) manufacture ; heald (for loom) manufacture.

Question 38.—Yes ; the information as regards actual workers employed in the various industries can be had from the Census Reports and on the basis of these reports, a statement has been compiled by this Department showing the distribution of the industrial workers between the principal cottage industries in this province. It forms an appendix to our Summary of Cottage Industries in the districts of Bengal—a copy of which is enclosed. But more complete information should be collected.

Question 39.—Through local administrative officers who should obtain the assistance of local bodies such as Union Boards or Chaukidari Pan-chayets and Industrial Co-operative Societies. The local administrative officers should work under the guidance of the Provincial Department of Industries.

Wages.

Questions 40 and 41.—I think these figures give an idea and are fairly accurate for practical purposes.

Question 42.—I think that Mr. Datta's classification should be made uniform throughout India with necessary minor alterations to suit differences in local conditions obtaining in the different provinces.

Question 43.—It would, in my opinion, suffice if average returns of monthly earnings were obtained.

Question 44.—Yes.

Question 45.—I think these payments in kind should be converted into cash value at the current price. Where a meal is provided, the average cost which the labourer of that class would have incurred if he had made his own arrangements for the meal should be taken into consideration.

Question 46.—Not necessary so far as Bengal is concerned. There are not many irrigation works in Bengal and the lands in the greater part of the province are served by tidal rivers.

Question 47.—I think that the supplementals should be measured in cash value by taking the average cost which a labourer of the class would have incurred in making his own arrangements in respect of each. As regards dwelling, however, its letting value should be taken into consideration provided it is family quarters and not a case of the labourer living in the same house with his employer.

Question 50.—Yes, as the wages vary. In many parts of this province there is a great demand for labour in connection with Kharif but not so much in connection with *rabi* harvest.

Question 51.—Yes ; there are generally fixed hours in this province for agricultural labour from morning to afternoon—8 A.M. to 4 P.M. with a break of nearly an hour at about mid-day when the labourers take their meals.

Question 52.—No other class.

Question 53.—I do not think so. To obtain these particulars more detailed enquiries covering the entire area would be necessary. I think that these particulars might more conveniently be obtained at the time of the population census.

Question 54.—They give an idea and are fairly reliable for practical purposes.

Question 55.—Yes.

Question 56.—Yes.

Question 57.—I think that would be better.

Question 58.—I am afraid that such legislation is not likely to be effective. I would prefer to secure the co-operation of employers and to conduct through their agency a census of wages in large industries. If this, however, fails there would be no alternative but to have recourse to legislation.

Question 59.—The unit should be the week in view of the mobile character of such labour and of their periodical migration.

Question 60.—Yes.

Question 61.—In calculating their average earnings, the period of their absence should be left out.

Income.

Question 62.—Yes : most of the figures used by the compilers of these estimates were based on insufficient and untested data and many important sources of income must have been overlooked. I can suggest no improvement except the collection of more complete and trustworthy data and more careful examination of them.

Question 63.—I doubt whether an income census would be practicable or politically expedient in this country. To obtain a fairly accurate estimate of the total income, I would estimate the total production from various sources and then supplement it by the income derived from trade and commerce.

Question 64.—If an income census were to be compiled, I would adopt individual income as the unit.

Question 65.—The period of estimation should be annual.

Question 66.—The income should first be ascertained on the basis of one complete year for rent payers, of a month for salaried persons, a day for unskilled labourers—the figures in the latter two cases being then converted into annual figures for the purpose of final tabulation.

Question 67.—No.

Wealth.

Question 68.—I think that the national wealth should be collected on the basis of income collected from income-tax statistics supplemented by census.

Question 69.—No suggestion or criticism.

Question 70.—I would value them only on average sale price.

Question 71.—I would value it on the basis of cost of construction including that of land.

Question 72.—On the basis of rent.

Question 73.—I am afraid that such an enquiry would be viewed with suspicion in this country and would not be politically expedient.

Question 74.—Not likely to be reliable, but I can suggest no other method.

Question 75.—Yes ; I think that rough estimates are all that we can make in the circumstances.

Question 76.—By comparative study of the cost of living by means of index figures.

Question 77.—Yes ; the index figures meet all requirements of a comparative study.

Question 79.—A year—as there are social ceremonies at different times of the year.

Question 80.—I would divide the population into classes according to occupations and well-defined tracts and within each such class I would collect the figures of income and expenditure of a few typical families in order to afford fairly reliable data.

Question 81.—Yes : I would include items of actual expenditure. Provided drinks or drugs are not indulged in excess and excessive indulgence in these directions would exclude the case as not being a typical one. These would be the normal items of expenditure of the class of labourers concerned, *e.g.*, mill-hands.

Question 82.—The statistics of prices collected by the local administrative officers according to the present method should be verified by means of enquiries from persons engaged in the trades connected with the products and preferably from associations or bodies of such traders.

Indebtedness.

Question 83.—No other records.

Question 84.—It would depend on the unit adopted for the purpose of income statistics (question 64).

Question 85.—I accept the form.

Question 86.—By a general survey supplemented by special intensive studies of typical groups of persons of each class in different localities.

Initial economic survey.

Question 87.—No.

• *Question 88.*—Yes : by local administrative officers who might utilize the services of local bodies, such as Unions Boards or Chaukidari Unions and Co-operative Societies where these exist.

Question 89.—Yes.

Question 90.—No : but the result thus obtained would be tested by means of intensive study of different local areas and in respect of typical groups of persons in the different industries.

Questions 91 to 92.—The primary agency employed should merely record the answers to the questions and the answers obtained should be tested in the light of the results of special intensive study. There should be some special officer with a staff at the Provincial headquarters to guide the general enquiries and to undertake intensive study with the assistance of the local administrative officers and to compile and publish the result.

Question 93.—It should take about a year. The only additional cost involved according to my suggestion will be the cost of the special officer and his staff.

Periodical surveys.

Question 94.—Certainly : in order to ascertain progress.

Question 95.—Yes : it may synchronize with the population census.

Question 96.—Yes.

Question 97.—I would suggest jute, coal and tea.

Special enquiries.

Question 98.—No objection.

Question 99.—Yes.

Question 100.—Yes.

Question 101.—Yes.

Organization.

Question 102.—There should be an All-India Bureau and Provincial Bureau, but the work in the districts should be carried on through local administrative officers.

Question 103.—Yes.

Legislative.

Question 104.—Yes : if necessary but I would depend more on the co-operation of the large industrial firms and the public in general.

Question 105.—Yes : in the interest of economy, I am not in favour of the establishment of *ad hoc* district officers.

Question 106.—That would be a matter for settlement by the Government of India in consultation with the Local Governments. Personally I do not know how far the local legislature would agree to it, though the Legislative Assembly have already agreed.

Questions 107 and 108.—I think that a part of the cost of their enquiries should be recovered from District Boards and Municipalities if necessary, by legislation. I would be opposed to any levy in the villages.

Mr. B. RAMACHANDRA RAU, M.A., L.T., Lecturer in Economics,
Calcutta University.

Written Statement.

Question 1.—One controversial topic on which information has to be collected is the one of rural depopulation. The desertion of all middle class able-bodied men and the wealthy members of the village to the towns to eke out their livelihood or to enjoy the amenities of life and its resultant effects on the village life have to be traced. For that purpose there is no adequate material at present. It needs no emphasis to state that the "nation lives in the village". Village reconstruction is the supreme economic problem demanding early attention.

Question 2.—This is exhaustive. There should be a sub-division of the occupation entitled the "village craftsman". Weavers, different metal workers, a blacksmith, goldsmith and bell-metal workers, potters, the chamars, the tailor and the village shopkeeper.

Question 3.—Sir E. Gait's classification is preferable.

Questions 5, 6 and 7.—The existing machinery requires improvement but it is difficult to secure it without additional expenditure. A separate agency for crop reporting has to be organised in all provinces and this separate agency can also collect statistics on minor crops.

Question 9.—Separate statistics for bullock and buffalo carts have to be collected. Statistics relating to minor implements of agriculture can also be collected. This is necessary for arriving at the amount of agricultural capital invested in the land.

Question 10.—Statistics of a, b, e, can be collected by the village chamars. b, e might form the basis of subsidiary industries of enterprising capitalists. (See my monograph* on Leather Industry—pages 98 to 100.)

Question 12.—If a separate agency for collecting economic data were to be organised a rough idea can be obtained of these things.

Question 18.—Yes. There is a separate caste for fishing and information about fresh water fisheries can be obtained.

Question 25.—The Inspector of Mines would be in a position to obtain this information if all mines are to be supervised by him (including those which are less than 20 feet in depth).

Question 26.—The cost of marketing is also included in the market price. There would not be much difference as the marketing is done by the producer himself.

Question 27.—Mr. Cotton's Handbook of Commercial Information gives figures relating to the quantity of export and their value but not of production.

Question 28.—Artistic leather works carried on on a small scale in certain provinces referred to in my monograph (pages 98 to 100).

Question 29.—Without compulsory power it would be difficult to collect accurate figures otherwise there would be an under-estimation of production.

* "The Economics of Leather Trade and Industry"—Not printed.

Question 30.—A quinquennial census of production has to be collected.

Question 31.—As in the case of the Dominions.

Question 32.—Imperial Statistical Organisation. Labour questions are being studied by the Imperial Government.

Question 33.—A rigorous enforcement of the Official Secrets Act or a like act to be enforced in this case.

Question 35.—The occupational census of 1921 to be preferred.

Question 36.—Whether they take up apprentices and train them to higher efficiency and what is the nature of the welfare work undertaken by them ?

Questions 38 and 39.—Specially trained agency should be appointed to study the cottage industries and bring up the different provincial monographs published in the past up to date. (See Exhibit B.* Such sort of intensive work is required and students who have done research work should be entrusted with this work.)

Question 62.—Yes. Figures relating to per capita income are always near approximations to the truth.

Question 63.—An income census checked by statistics of wages, income-tax and production is necessary. The moral basis of the present British Rule has been adversely affected by the oft-quoted statements of low income figures. Just as the cotton excise duties have been used as a handle against the Government so also much capital is made out of the low figures of income given by the Indian economists. At least to disprove this the expense and trouble of this calculation have to be undergone.

Question 64.—The individual ought to be the basis.

Question 65.—The financial year.

Question 66.—Different units as suggested by the Committee.

Question 67.—This is not so very essential for it is commonly understood that only a rough idea can be gained out of a study of income calculations.

I have come across Mr. Grant Duff's estimate of national income mentioned by Prof. C. N. Vakil in his "Financial developments of India" but I have not verified it myself. Grant Duff has estimated the per capita income in 1871 at £2.†

Questions 68 and 69.—The inventory method alone is practicable at present. I have been estimating the national capital wealth of India on the lines of Dr. M. G. Mulhall [see Fifty years of National Progress in the United Kingdom (1837—1887)]. As soon as I finish the calculation I shall type the essay and send it to the Committee.

Question 70.—A multiple of land revenue is preferable. A different one for the permanently settled tracts has to be employed.

Question 71.—Local inquiry would be better and if the separate agency is organised it would be an easy thing to calculate.

Question 73.—Yes. This is the census method.

Question 74.—Reliable replies would not be forthcoming unless legislative measures are enforced.

* "The economies of Leather Trade and Industry"—Not printed.

† Under Secretary of State's speech in the House of Commons—1871.

Question 75.—Yes. It cannot but be so.

Question 76.—In civilised countries there are generally well-recognised standards of living, e.g., standard of survival, standard of subsistence, standard of comfort, standard of struggle. (See G. B. Dibble "the Psychological Theory of Value, pages 164 to 169".) The majority of the Indian people possess a standard of bare subsistence. Western Science no doubt is indoctrinating the people as to the correct method of dealing with famines and epidemics. In a few cases the standard of subsistence has given place to one of comfort. But whether this has been secured at the expense of some economic necessities as in the case of the urban middle class families has to be studied. If it really denotes a social victory won without sacrificing any necessities of life it would be a matter of sincere congratulation. (See Exhibit A,* page 462.)

Question 79.—At least one year to note the seasonal influences on family expenditure. For instance during the course of a few months individuals maintain good health and the expenditure on medicine would not be included. During the rains people are unhealthy. Taking my own family into consideration I find that my doctor's bills during August, September and October of the year are more frequent and heavy. During summer months I find that I have to spend less for the same purpose. Again with the commencement of the winter I generally make purchases of winter clothing. Thus the effect of all seasonal influences have to be studied and this can only be done if the year were to be the basis of our study.

Question 81.—All of them would have to be included.

Question 82.—Harvest prices at the sources of production are required. The present prices include transporting charges, storing and marketing charges of the middlemen. So to estimate agricultural income the harvest prices have to be noted.

Question 83.—The Registrar of all mortgage deeds would be in a position to give some information of the state of indebtedness in the area under his jurisdiction. All the bigger loans are practically made on legal mortgage of property.

Question 84.—The individual.

Question 85.—This is comprehensive enough.

Question 86.—A thorough inquiry based on the lines of Mr. Darling's "The Punjab Peasant" is necessary for each province.

Initial Economic Enquiry.

Question 87.—Section I & II. The attempt to collect information through the existing heads of departments, factory inspectors, heads of firms would be misunderstood by the people as an attempt to obtain details for levying taxation on them. A separate central agency for the collecting of economic data should be organised and in the beginning they may be trained in the task by the Statistical Department in the matter of compiling and co-ordinating the different statistics. This is necessary in the case of the permanent agency.

Question 92.—A good deal of knack and sympathy on the part of the collecting officers is required. Men of their own nationality, preferably of their own district or tahsil would be better as people would readily

*"Plea for Sociological Statistics," by B. Rama Chandra Rao.—Not printed.

confide in them. These officers collecting the economic data should not be merely mechanical in their duties but should extend their milk of human sympathy and kindness when the tales of their woes are often recited. This sympathetic attitude would gain their confidence and the task of collecting reliable data would be much simplified.

Question 95.—There should be a census of production, census of wealth synchronising with the census of population.

Question 96.—In the case of wages (Section b-87) agricultural production and statistics of prices the collection of annual data would be necessary and at the time of the periodical surveys this permanent staff should be reinforced by fresh hands working under the supervision of the trained staff.

Question 97.—Statistics of all the "key industries" should be collected annually. I regard that the annual collection of output in the large-scale industries would be useful from the stand-point of judging economic progress. Jute, cotton, wool, petroleum, iron and steel, railway workshops, shipbuilding, rice mills, oil mills, leather works, tanneries, arms and ammunition.

Question 98.—Rural indebtedness, fragmentation of holdings, and other economic ills of the agriculturists should be studied carefully by competent students of economic conditions at the time of periodical surveys.

Question 100.—The village ought to be the basis of rural study and the city or town for urban study. Certainly an official Year Book like the one published by the Dominion of Australia would be of immense use.

A comprehensive scheme for collecting economic data is necessary. It should form a distinct branch of the governmental organisation of the country. An early and timely publication of the annual returns would be of immense utility. The present wastage of raw materials might be stopped in the near future when the extent of the available material is known.

Legislation would be necessary to punish recalcitrant individuals who persistently refuse to give correct information or by false information underestimate their own property. For instance the money-lender would not give the correct figures but this can be checked by consulting the borrowers. The individual information should be checked by verifying it with the neighbour's estimate and the PUNCHAYET'S opinion can be relied upon in the case of village matters.

Question 105.—Yes.

Question 106.—(a) Half by the provincial and half by the Central Governments.

(b) Half by the provincial and half by the Central Governments.

Question 107.—The well-to-do Municipalities and District Boards might contribute say a portion of this expense.

Mr. S. VAIDYANATH AYYAR, M.A., Dip.Econ., Lecturer in Economics and Politics, University of Dacca.

Written Statement.

General.

Question 1.—I believe an enquiry of the kind suggested may be sufficient ; but I would include housing and educational facilities within the scope of such enquiry.

Question 2.—I think I would accept the classification suggested.

Question 3.—I would prefer Mr. K. L. Datta's classification. I agree that so far as possible provinces should be sub-divided into tracts which are more or less similar in economic characteristics.

Production.

Question 7.—Yes. I think this must be done.

Question 8.—I would use the village panchayat or co-operative society to supply information.

Question 9.—I am unable to answer the question.

Question 12.—A local inquiry, and the organisation of co-operative creameries would go a long way to give us a fairly accurate data.

Question 29.—Yes. I would advocate compulsory legal powers for obtaining information.

Question 30.—Yes. A quinquennial census is preferable but I believe a census synchronising with the population census would do.

Question 32.—Yes. by the Imperial statistical organisation through the provincial statistical organisation.

Question 34.—I would go further than the Indian Factories Act.

Question 35.—I would suggest that the statement of answers should contain information about the numbers of persons receiving wages below Rs. 25 or so a month, below Rs. 50 and so on as under :—

Below Rs. 25 :

Between Rs. 25 to Rs. 50 :

Between Rs. 50 to Rs. 100 :

Between 100 to 200 :

and so on.

Wages statistics ought to be given in great detail and also information must be given as to the directions in which attempts are made to increase the real wages of the workers by the provision of housing, recreation, education and other facilities.

Question 38.—I think it is. I would use the social service organisations in different parts of the country, the village panchayat in rural areas, and wherever possible co-operative societies.

Wages.

Question 40.—I do consider the figures inadequate and unsatisfactory.

Question 41.—I would leave the question of reporting about prices and wages to the village panchayat and the village headman each acting as a check upon the other.

Question 12.—I think a uniform classification is desirable for purposes of comparison. I do not agree that each province should be allowed to decide its own system.

Question 13.—A statement of monthly earnings without an approximate indication of the number of days worked is likely to be misleading. I think steps should be taken to ascertain regularity of employment as well.

Question 14.—Yes, in so far as they are definite and customary.

Question 15.—It is difficult, but we must be able to convert the payments in kind according to the exchange value of the commodities in the village.

Question 16.—It may be desirable.

Question 17.—Yes. I believe it is possible in some degree. The only way to do it is by a local intensive inquiry.

Question 51.—I think it would be difficult.

Question 55.—Yes.

Question 56.—I think it would be.

Question 57.—Yes. I think this must be done without delay.

Question 58.—Yes, undoubtedly.

Question 59.—I would prefer the “ month ” for purposes of comparison.

Question 60.—Yes. This is often the case in regard to the un-skilled employees of the Buckingham and Carnatic Mills who are employed by the day.

Question 61.—This is an unfortunate fact. It was noted by Dr. Mann in regard to the workers near about Bombay.

There are only two ways by which we can attempt to get over the difficulty. One is to follow up the labourer to the rural area and find out his earnings. But this would be an exceedingly difficult work. The second method is to assume that the worker's wage in the rural area is at least not less than what he had in the urban centres and calculate on this basis.

Income.

Question 62.—Yes : to a considerable degree.

Non-agricultural income must be definitely estimated. So far most of the estimates have failed to satisfy scientific tests largely because they were based on guess-work of the persons who estimated.

Question 64.—I would take the family.

Question 65.—The month would be sufficient.

Question 66.—I would adopt “ the month ” as a unit for all classes for purposes of comparison.

Question 67.—It depends.

Wealth.

Question 68.—I think a combination of the two methods suggested could be applied to India with some prospect of success.

Question 69.—I would, differentiate individual from “ corporation ” wealth. The wealth of individuals should be shown differently from those of joint stock companies and these again as distinct from those of public bodies.

Question 70.—I would certainly prefer a local inquiry using (a) as a check.

Question 71.—By local enquiry.

Question 72.—An estimate on the basis of rent is a very fair method.

Question 73.—I would, but the work is exceedingly difficult under present conditions.

Question 74.—This is not a very difficult task so far at least as villages are concerned.

Question 75.—I think an approximate estimate is all that can reasonably be hoped for.

Cost of living.

Question 76.—(a) is by far the best method, but short of that an enquiry into the conditions of typical families is all that can be attempted.

Question 79.—I think “ a week ” or a fortnight would do.

Question 81.—Yes, they should be, but they may be shown separately.

Indebtedness.

Question 83.—I am not aware of other sources.

Question 84.—I would suggest that “ the family ” should be the unit.

Question 85.—I do, but I would add the following :—

“ occupation of the person from whom borrowed ”.

Question 86.—An intensive survey would be much too costly and inquisitorial. I think, I would for the present be content with a general survey.

Initial Economic Survey.

Question 87.—I have no criticism to offer.

Question 88.—I think it would be. I think the village panchayat would be a suitable agency.

Question 89.—Yes. Certainly.

Question 90.—A house to house enquiry would be fairly reliable though much depends on the way in which the work is done.

Question 91.—The first is by far the better method.

Question 92.—I think we can use the co-operative societies (wherever they exist) for this purpose. But a new agency with this definite object in view may be desirable. In my view this should be a quasi-official organisation with a majority of non-official public men in its executive.

Question 93.—It is not possible at the present stage to make a statement in regard to this question. The cost of our census operations may give us a basis for speculating on the cost.

Question 94.—Yes, undoubtedly.

Question 95.—I would agree with the suggestion that periodical surveys should synchronize with the population census.

Question 96.—Yes, as far as possible.

Question 97.—Cotton, jute, steel industries. Railways and other large businesses.

Special Enquiries.

Question 98.—Yes, I do.

Question 99.—Yes.

Question 100.—Yes.

Question 101.—Yes.

Question 102.—The suggestion made here is eminently desirable, but I would have an advisory board of non-official men attached to these offices to give assistance and advice.

Question 103.—Yes.

Question 104.—Yes.

Question 105.—Yes.

Question 106.—The cost should be borne by the Government of India, but the provinces may be reasonably asked to contribute. I think the cost of agricultural survey must be borne by the provinces. In regard to the recurring cost I would suggest that the Government of India should bear one-third of the cost and the provinces the other two-thirds.

Question 107.—I think it is reasonable that they should.

Question 108.—I believe that this is not expedient at the present time.

Mr. A. T. WESTON, M.Sc., M.I.C.E., M.I.E., Officiating Director of Industries, Bengal.

Written Statement.

Question No. 10 of the Questionnaire deals with the publication of statistics of certain pastoral products. Some years ago this Department endeavoured to assess the animal bye-products such as bones, hides, horns, etc., available in Bengal. I accordingly forward herewith a copy of the statistics* so compiled which in itself indicates the difficulties involved in getting reliable and complete information of this kind.

Questions 29 and 30.—I would certainly advise the provision of compulsory legal powers under which information regarding the capacity and production of factories may be obtained and for this purpose support the proposal that a quinquennial census of industrial production should be legally operative in this country. As an example of the difficulty which such a course would obviate I may mention the recent establishment of large match manufacturing concerns of foreign origin in this country during the last year or two. At the instance of the Government of India this Department was asked to ascertain the maximum capacity, source of raw-materials, etc., appertaining to a large match concern recently established by Swedish interests. Although approached in a tactful and friendly manner this concern has so far successfully prevented the Director of Industries or his staff from inspecting it or in any way ascertaining its actual position. Such information as we have been able to procure has been obtained through the instrumentality of the Chief Inspector of Factories who has legal authority to enter the premises of such a concern, but only for the purposes connected with the Factory Acts.

In regard to para. 31 I would suggest that the Census to be of any real value should be at least as detailed as the United Kingdom census.

The information required relating to large industrial establishments can in my opinion only be obtained through provincial statistical organisations.

Question 33.—Prevention of information reaching rival concerns can be secured by making the returns from any one firm confidential, to be received and compiled by a responsible officer, the identity of the source of origin being replaced by an index number and any publication of figures being made in abstract form unrelated to the names of the firms or concerns from which they originate.

Question 31.—I consider the definition of "Large Industrial Establishments" as those governed by the Indian Factories Act will meet all requirements at present and in regard to para. 35 it is considered that the classification given in the existing publication by the Department of Statistics is quite satisfactory.

The suggested information contained in para. 36 is not sufficiently exhaustive, for example, under (d) it would be better to say "maximum power capacity of power units installed". This would cover the case of a concern driven by electric motors from a public supply. Under (e) the value of lands, buildings, machinery and plant should be those shown in the last audited accounts. Under (f) the particulars should include

*Not printed.

sources of supply and the name of each kind of raw-material. Under (j) the average works cost of production of each principal article or material produced should be given. Further, the location of each concern in relation to railway or other transport service should be indicated.

The following additional cottage industries known to the Bengal Department of Industries may be added to this list :—

Match, conch shell industries (button and ornaments), fishing rods, line, hooks, fishing net weaving, manufacture of aerated waters, manufacture of shellac, sealing wax, charcoal and tica, book binding, card board box making, electroplating, fire works, hooka manufacture, laundry, packing box, picture framing, umbrella handles, mother of pearl buttons.

Question 38.—I enclose a report* of a recent survey of cottage industries in Bengal, the principal agents of which were five young Bengalee gentlemen with more or less scientific but no industrial training, who were then attached to this Department as its agents in the principal Divisions of the province. Their posts have since been abolished. The survey however represents the kind of information which can be collected by a reasonably intelligent agency in connection with cottage industries. I do not consider it practicable to collect the detailed information enumerated in para. 38 for two reasons (a) that a much larger number of young men of this kind would be required at a cost which would be considered prohibitive under existing conditions, and (b) because I think it extremely doubtful that the workers in cottage industries would yield the necessary information both complete and reliable.

In regard to Questions 57 and 58, I consider that a comprehensive and detailed wage census by a competent staff and equipped with necessary legal powers, very desirable. At the same time a considerable area of detailed information regarding the wages paid to various classes of workers is available in the statistics of the many Government factories such as the Ordnance Factories at Cossipore, Ishapore, Jubbulpore, Cawnpore, Kirkee and other Government Factories in India.

Lastly I consider that it is extremely desirable that the necessary statistics required for the compilation of a cost of living index on the lines adopted by the Bombay labour office should be maintained at the headquarters of each of the larger provinces of India.

*Not printed.

Mr. H. R. BATHEJA, I.E.S., Professor, Ravenshaw College, Cuttack.

Written Statement.

Question 1.—I suggest that information may be collected on capital also under two heads—foreign and indigenous. Information may also be collected about income under the heads—income spent in India and income spent outside India.

Question 2.—I should accept the classification given in Appendix A but subdivide these classes further according to income. As it is the classes given in the list are by no means homogeneous as they include persons living on the margin of subsistence as well as those living in affluence. For the purpose of measuring the broken of taxation, for instance, the classification would not carry us very far unless sub-division is carried further as I have suggested.

Question 3.—Yes. But I do not accept the classification either of Sir Edward Gait or of Mr. K. L. Datta as the tracts mentioned by them though similar in characteristics as regards the conditions of production are not so as regards consumption. To arrive at a correct classification for the Committee's purpose, it would be necessary to divide India first into linguistic areas which, roughly speaking, have common customs, habits and forms of consumption, and then to subdivide these further according to regional characteristics which determine the conditions of production. I agree entirely that the present administrative divisions are unsuitable for the purpose which the Committee has in view.

Question 5.—Generally speaking, they are unreliable specially as regards total yield. The collecting staff has neither the qualifications nor the scientific interest for ensuring the accuracy which is necessary. The supervising staff suffers from the same disabilities and has not the time or the inclination to check the accuracy of the returns.

Question 6.—The ideal arrangement of course would be to set up Central and Provincial Bureau Census and Statistics with district branches but it would be too expensive. It is also doubtful whether it would be efficient to the extent desired as in any case the lowest collecting agency will be the same revenue officials who are the chief sources of error at present. It is further undesirable that higher revenue officials should be deprived of all their special functions without some retrenchment and reduction as with the growth of special Departments there is now little work to do. At the same time the revenue officials enjoy greater prestige and can command greater obedience and service than a mere statistical officer would do. On these grounds the revenue officials should continue to be primarily responsible for the collection of statistics but their responsibility should be strictly enforced. At the same time local authorities like municipalities, District Boards, Local Boards, Union Boards and Village Panchayets should be compelled by law to collect the same statistics, so that they might act as a check on the revenue officials. The results of both these agencies should be co-ordinated and checked by an Economics Board for each division organised somewhat on the lines of Punjab Board on which the local authorities and officials would be represented. The professor of economics of the local college should be the *ex-officio* Secretary of the Board and for the scientific work which he will be expected to perform in

connection with this post he should be paid an allowance, he will no doubt examine the data collected with the help of a students' economic society in whose members he will have the local knowledge which he may lack himself for checking the accuracy of the data. It will benefit him personally also to take on this function for his lectures will possess the element of reality which they lack at present. He is necessary to the organisation, as it is in response to his requests voiced through legislators, that the economic survey of the country is being undertaken and it is he alone, who possesses the qualifications and the scientific returns for ensuring the accuracy of statistical returns. If the Professor of Economics is entrusted with this duty, he will discharge a function analogous to that of a professor of chemistry when acting as chemical adviser to a local Government for which he receives an allowance.

Question 7.—Yes.

Question 8.—Please refer to 6.

Question 10.—Through local authorities.

Question 11.—Information may be collected by the local as well as the revenue authorities. Those local authorities which levy an octroi or a tax on trades and callings should have less difficulty in collecting data on these points.

Question 18.—Yes.

Question 19.—Local authorities may be asked to collect information on this point.

Question 20.—Port authorities where they exist and local and revenue authorities where they do not.

Question 22.—Yes. The Geological Survey where the output is large and the local and revenue authorities where it is small.

Question 23.—Yes.

Question 24.—It would be advisable if it is decided to undertake a census of capital also.

Question 25.—Yes.

Question 26.—Yes, but as it would be necessary to indicate each market and as price will vary according to the distance of each market from the mine, the proposal is beset with some difficulty. Under the circumstances it will be necessary to stick to the price at the pit's mouth.

Question 29.—Yes.

Question 30.—Yes. For our present purposes, a quinquennial or decennial census should be sufficient.

Question 31.—It need not be as detailed as in the United Kingdom as India is not a fully developed country.

Question 32.—As large industrial establishments may in course of time be spread over a number of provinces it is desirable that information about them should be obtained by the Central Government.

Question 33.—Details need not be published and the names of firms should be kept secret.

Question 35.—The occupational classification adopted at the census of population in 1921 as it would enable us to consider economic information in relation to other heads dealt with in the census.

Question 36.—Yes. Information may be called for about hours of work per day, about the amount of foreign capital invested and the extent to which foreign agency is employed and about the welfare institutions started for the benefit of the employees or their children and rent paid if any.

Question 37.—We might add the manufacture and repair of scientific instruments.

Question 38.—Yes.

Question 39.—Revenue and local authorities.

Question 40.—Yes.

Question 41.—No. Please refer to 6.

Question 42.—The Bombay Labour Office classification should be made uniform throughout India.

Question 43.—Steps should be taken to ascertain the regularity of employment.

Question 44.—Yes.

Question 45.—Payments in kind may be converted into cash at wholesale price rates.

Question 46.—This is not necessary as the essential thing is to know how much the labourer gets for supporting himself and his family.

Question 47.—Yes. Roughly, in each locality, the value of these supplementals is known and can be allowed for in making the initial return.

Question 49.—Yes.

Question 50.—It is not quite necessary.

Question 51.—No. It is difficult to ascertain when the Indian labourer is working and when he is not. You find him sleeping when he is supposed to be working. The employer generally is not exacting. The hours of work in India are nominally long but really short.

Question 55.—Yes.

Question 56.—It is extremely difficult.

Question 57.—Yes. It is necessary for understanding the new problems of labour and capital which are confronting India.

Question 58.—Yes.

Question 59.—Month is the most convenient unit, as it furnishes a good basis of comparison and takes in consideration the regularity or irregularity of employment.

Question 60.—Yes. Specially in the mining industry of Bihar and Orissa.

Question 61.—They are generally absent during the harvest season and employers can make allowance for that fact in calculating the actual monthly wage as distinguished from the theoretical monthly wage by looking at the yearly wage bill.

Question 62.—It is due partly to these assumptions partly due to political bias and partly due to differences in methods.

Question 63.—I should advocate the institution of an income census on Australian lines.

Question 64.—The family.

Question 65.—Agricultural year.

Question 66.—I should adopt the same unit. Other units would not give accurate results.

Question 67.—Yes.

Question 68.—Yes.

Question 69.—One feels tempted to add those moral and mental qualities which are a source of so much wealth to Englishmen and which India so sadly lacks but as they are incapable of a money measurement they will have to be excluded. The foreign debt of India and foreign capital invested in India should be deducted from the national wealth of India. The latter belongs to others and is liable to be withdrawn.

Question 70.—On the basis of average sale price.

Question 71.—On the sale price or on the cost of materials and labour spent on erecting them minus some depreciation due to lapse of time.

Question 72.—On the basis of rent, because that determines its sale price. In those towns where full rents are not realised sale price should be taken as the basis.

Question 73.—No.

Question 74.—No. There is no satisfactory method.

Question 75.—Yes.

Question 76.—By the method of index numbers, but separate index numbers should be constructed for urban and rural areas.

Question 77.—No. Separate Index Numbers for different social classes seem to be necessary.

Question 78.—House-to-house inquiries though they would be expensive. One will have to fall back on the typical family method if they are not possible.

Question 79.—For about 20 years in the case of house-to-house inquiries, if funeral and marriage expenses are to be included as I think they should be 4 years ought to suffice if the typical family method is adopted, provided allowance is made for the inevitable marriage and funeral expenses and expenditure on gifts to relations and caste and social entertainments.

Question 80.—About 10 per cent.

Question 81.—Yes. They are the items which make for the economic weakness of India.

Question 82.—Please refer to 6.

Question 84.—The family.

Question 85.—Information may also be called for about the creditor—whether he is a relation, a landlord, a *mahajan* or a co-operative society.

Question 86.—A general survey supplemented by intensive inquiries in special areas should be sufficient.

Question 87.—No.

Question 88.—Yes. Please refer to 6. This is not sufficient as 'both may be defective. Scientific aid is necessary.

Question 90.—They would be fairly reliable but not quite. The method of the population census should be followed, *i.e.*, the investigator should not merely record answers but should use his judgment also and if possible supplement the information given in answers from other sources.

Question 91.—By a combination of (i) and (ii).

Question 92.—Please refer to 6.

Question 94.—Yes.

Question 95.—5 or 10 years. Yes.

Question 96.—Yes.

Question 97.—Agriculture, textiles, coal, iron, sugar, tea, leather, paper, wines and tobacco.

Question 98.—Yes.

Question 99.—Yes.

Question 100.—Yes.

Question 101.—Yes.

Question 102.—Please refer to 6. I should have no objection to the bureaux proposed if money for them is forthcoming.

Question 103.—Yes.

Question 104.—Yes.

Question 105.—Yes.

Question 106.—It should be borne by the Central Government for if one Provincial Government refuses to vote grants for the purpose the whole scheme would be lost. Moreover the survey is being carried out according to the wishes of the Central Legislature.

Question 107.—Yes.

Question 108.—No.

Mr. B. A. COLLINS, I.C.S., Director of Industries, Bihar and Orissa.

Written Statement.

(1) *Fisheries.*—I do not think it either possible or desirable to attempt to secure statistics of the production of either fresh water or sea fisheries. Any statistics collected would be bound to be most incomplete and so misleading, while they would cost a great deal to collect and mean harassment to all concerned.

(2) *Cottage Industries.*—It is quite impossible to make any reliable general census of production of cottage industries nor, if the information could be obtained, do I think it would be of any great value. This question has already been considered as the result of the inquiries made by the Government of India and it has been decided not to take any census.

(3) *General.*—I consider that the rail and riverborne traffic returns which were abolished a few years ago as the result of the economy campaign should be reintroduced. They are extremely useful in inquiries regarding the state of any industry or the possibility of establishing any industry in any particular area. They cost relatively little to prepare and should, I think, be reintroduced in an improved form. So far as the province of Bihar and Orissa is concerned, we were compelled to abolish them because all other provinces and the Government of India did the same and the system by which they were prepared made it essential that all provinces should maintain them or else not at all. They have now, I understand, been reintroduced in one or two other provinces and I have been considering the possibility of starting them again in Bihar and Orissa. It would, however, greatly facilitate their reintroduction if all provinces were to agree to maintain them as before.

Mr. A. R. DICKS, Conservator of Forests, Bihar and Orissa.

Written Statement.

My replies to the questions in the questionnaire are as follows so far as the Forest Department is concerned :—

Question 14.—The value of timber and fuel produced by purchasers and privileged villagers in Bihar and Orissa are given in the tables appended to paras. 32 and 39 of the Annual Administration Report for 1922-23. There would be no difficulty in giving similar tables for the departmental operations in timber and fuel.

Question 15.—The statistics of the volume of timber and fuel which is sold otherwise than by actual measurement are compiled by the use of the following conversion factors :—

(a) *Timber*—

(i) Sleepers B. G. = 3.1 cft. to 3.5. cft.

M. G. = 1.5 Cft.

M. G. = 1.0 Cft.

(ii) Logs and other — Actual volume in Cft. is given sawn timber.

(iii) Poles .. Girth.

Any length .. 34" — 36" = 9 Cft.

31" — 33" = 6 ..

27" — 30" = 5 ..

24" — 26" = 4 ..

19" — 23" = 2 ..

13" — 18" = } 1 ..

0" — 12" = } 1 ..

(b) *Fuel*—

Head load = 1 Cft.

Bunghy load = 2 Cft.

Sagar load = 6 Cft.

Cart load = 15 Cft.

The figures are fairly reliable and complete as regards the outturn from Reserved Forests but as regards Protected Forests they are purely estimates and of very little value.

Question 16.—The figures of quantity and value of all items in the list in Appendix D. that are extracted from Government Forests in Bihar and Orissa are already given in Annual Form No. 20 except timber, fuel and charcoal. As regards these three latter quantities of timber and fuel are given in Annual Form No. 19 and for values see reply to Question 14 above. As regards charcoal there would be no difficulty in supplying figures of quantity and value for this.

The following items in the list are included in the returns of "other minor produce":—

(a) Fibre.

(b) Edible fruits.

(c) Horns.

(d) Skins.

Information regarding them is given in Annual Form No. 20 and is only reliable as regards Reserved Forests.

Question 17.—Unclassed State Forests in Bihar and Orissa are merely forests that have been acquired for reservation and are in process of being reserved. As regards private forests it is hard to see how statistics of forest produce can be obtained without compulsion.

I have nothing to say as regards the other questions.

Mr. A. C. DOBBS, Director of Agriculture, Bihar and Orissa.

Written Statement.

General.

Question 1.—Without any idea as to the object of the enquiries I am unable to say whether those specified are likely to be sufficient.

Question 4.—I have not access to a copy of the resolution of the Imperial Statistical Conference.

Question 5.—The Agricultural Statistics and Estimates submitted by me from time to time are not even approximately accurate and reliable in detail except in so far as the areas are ascertained from time to time at the time of Settlement, and that the estimates of outturn in different seasons probably correspond with the facts within say ten per cent. The figures of variation of area from year to year and those accepted for the normal outturn per acre are almost entirely speculative and probably not within 20 per cent. of the truth in the majority of cases.

Question 6.—The existing system of reporting in Bihar and Orissa depends (except in regard to settlement figures) on the opinion of village chowkidars and other persons on whom no responsibility can be thrown for even approximate accuracy.

Nothing short of a mechanical system of sampling would in my opinion enable such accuracy to be achieved and the cost of such a system would be prohibitive, for the majority of crops. An attempt is being made in this Province to evolve such a system for the area under paddy.

Question 7.—I do not think it is practicable at whatever expense to collect information of any value as regards these crops which are grown on very small areas and frequently are mixed crops.

Question 9.—I append a copy of my last cattle census report which shows to what extent the information collected was reliable and suggests improvement.

Questions 10 to 13.—I can make no constructive suggestions.

Agriculture.

Question 40.—I do not think further differentiation would make the information obtained in regard to wages more satisfactory. I can only suggest that the object of a wage census should be to show the relation of wages to prices over areas comparatively homogeneous in both respects.

Question 41.—I think the present agency is satisfactory.

Question 42.—I consider that it is misleading to distinguish any kind of strictly agricultural labour from ordinary labour in agricultural districts. Skilled workers might be distinguished when they get higher wages than ordinary labourers but not otherwise because any difference in the other direction is no doubt made up by special advantages which are difficult to assess.

Question 43.—I think the casual nature of agricultural employment should be accepted, and monthly returns obtained if required.

Questions 44 and 45.—I should prefer to use the daily wages of casual unskilled labourers on work that is not strictly agricultural as an index for all purposes than to attempt to go into the details referred to.

Question 46.—See reply to 40. Any classification should have regard to the relations disclosed by the figures of the several tracts.

Question 47.—I doubt if the supplemental could be measured or valued at all accurately, and should have no faith whatever is the resulting total.

Question 48.—See replies to 40 and 46, any method of representing, by a signal figure, the money rate of wages in any district with which I am acquainted would give results that would mean very little to me.

Question 49.—Within homogeneous tracts the total numbers receiving each rate would make for clearness, but not otherwise.

Question 50.—The answer will depend on the object of the enquiry.

Question 51.—It should be possible to get accurate figures for the number of hours leisure enjoyed by agricultural workers between sunrise and sunset at any time of year, over large areas where agricultural conditions do not vary greatly.

Question 52.—I can suggest no other crafts.

Question 53.—I doubt if it would be possible to get approximately accurate figures for numbers earning varying rates.

Question 54.—The variations in wages of craftsmen reported indicate that the figures are of much less potential utility than those of ordinary labourers, so far as they go they are probably reliable.

Question 55.—In the case of craftsmen I see no alternative but to try to estimate the value of supplements.

Question 56.—Much of the work of craftsmen must be piece work I doubt if they keep regular hours as a rule.

Wealth.

Questions 69 to 75.—In my opinion the only reasonably useful idea of the wealth of any unit is given by a comparison of the total income, (wages salaries and profits), with the total expenditure on essential necessities such as food, fuel, and a minimum of clothing and housing. No details or sum of details seems likely to give anything like so useful a figure as this, for any purposes.

Question 76.—The cost of food, fuel and the minimum of clothing and housing seems to me in all cases to give the best basic unit. All other expenditure is a matter of choice.

Questions 78 to 81.—I cannot imagine the use of family budgets for any purpose whatever except to satisfy idle curiosity.

Question 82.—I can make no general suggestion for obtaining price statistics, each case seems to me to differ.

Questions 83 to 86.—I have no experience of indebtedness.

Question 87 to 93.—I consider that the planning of a more carefully thought out system of collecting and comparing statistics of wages (including salaries) and prices, would be far better than the survey proposed, which would be very expensive and troublesome and the results of which

would probably only be misleading. A discussion among those interested sufficient to elaborate the improved system that I suggest should not take more than a week.

Periodical Survey, Special Enquiries and Legislation.

There seems to be every reason to avoid making useless enquiries and surveys.

The frequency and details of collection compilation and publication of any enquiry that is likely to serve a useful object must be decided with reference to the particular object in view.

Organisation and Cost.

The organisation and legislation should be evolved 'ad hoc' and the cost could depend on the organisation necessary in each case.

A Government statistician of sufficient ability and authority would probably be worth a very large salary because he would be able to eliminate enquiries which would not serve the object for which they were intended.

RANGOON.

(*Note* :—Witnesses from the province of Burma were examined at this centre.)

**Mr. J. B. MARSHALL, C.I.E., B.Sc., I.C.S., Deputy Commissioner,
Thayetmyo District.**

Written Statement.

(*The numbers appearing at the beginning of paragraphs are those of questions in the Questionnaire.*)

1. Many other matters connected with the economic condition of the people might be suggested. Where to draw the line has to be determined with reference to the possibility of obtaining accurate statistics, the probable value of the statistics when collected, and the cost of collection. I would restrict the enquiries to (1) Production, (2) Wages, and (3) Cost of Living, because statistics of Income, Wealth and Indebtedness will be inaccurate and of little value, and the cost will be excessive. For the same reason I would limit enquiries regarding Production to the principal crops, important minerals, factory production, and perhaps cottage industry production.

2. Sir Edward Gait's classification seems suitable. The classification should however agree as closely as possible with the classification adopted by other countries so as to facilitate comparisons. I believe that either the International Labour Organization of the League of Nations or an International Conference of Statisticians has attempted to prepare a uniform classification for adoption, but I regret I cannot quote the reference at present.

3. The sub-division of a province into tracts can be done after the statistics have been collected as the preliminary examination of the statistics will show where a similarity of economic characteristics exists.

4. I have not seen the resolutions referred to. I think the standards to be adopted should be settled by an International Conference rather than by an Imperial Conference.

5 to 39. *Nil.*

40. Yes. The figures seem to me to be unsatisfactory and of very little use.

41. The statistics are sometimes so vague and meaningless (*e.g.*, "3 annas to 10 annas per day") that they cannot be described as either accurate or inaccurate. Special enquiries in selected areas might be made by investigators from the Provincial Labour Office, and a detailed report on the methods and results of these enquiries distributed to district officers as an example of what is wanted.

42. There should be a uniform system for the whole of India.

43. For agricultural workers it is the annual earnings that are important. In Burma there will be special difficulties owing to the employment of floating and immigrant labour, especially at harvest.

44. Yes.

45. The investigator will have to do the best he can to determine the value of the payments in kind by converting them at local prices current at the time of payment.

46. The returns themselves when collected will show if any such classification is necessary.

47. If family budgets for that class of worker have been collected, a moderately accurate estimate should be possible, based on the proportion of family budget expenses that he has been saved the necessity of incurring.

48. This will depend on the nature and quantity of the statistics collected, and the decision may be left to the statistician who has to report on the figures.

49. Yes.

50. Nil.

51. Hours will vary considerably from season to season but a rough average might be obtainable.

52. There is not much advantage in collecting wage statistics for any of these small classes. The collection of accurate statistics of wages of agricultural labour and wages in large industries will be a quite big enough problem.

53 to 56. Nil.

57. Yes, but gradually, as funds permit.

58. I think an attempt should first be made to obtain the statistics without recourse to legislation to give compulsory powers.

59. It will not matter much which unit is selected provided that allowance is made for absences and overtime before the daily, weekly or monthly wage is calculated.

60. Yes.

61. Methods of overcoming the difficulty are indicated in text books of statistics (*e.g.*, Bowley's Elements of Statistics, 4th edition, pages 32 to 38). The method most suitable for application to the available statistics would have to be selected.

62 to 75. Nil.

76. An index number calculated from weights based on family budgets should be adopted for each class.

77. The "mass unit" system is not suitable. I understand that this system is being abandoned in Bombay in favour of the standard budget system.

78. I prefer the "complete house-to-house enquiry" method.

79. This can be decided when enquiries into the nature of the householder's expenditure have been made.

80. The percentage will depend on the size of the population of each unit.

81. Yes. if the expenditure is not illegal.

82. I suggest a regular check of reported pieces by Investigators of the Labour Office.

83 to 86. *Nil*.

87. I should restrict the survey to :—

Section I.—(a) and (b).

Section II.—(a) (i),

(b) (ii) and (iii),

and (f).

88 to 93. *Nil*.

94 to 96. After family budgets have been collected, the cost of living index number should be prepared month by month. Wage statistics should be collected at periodic intervals as frequently as the permanent staff to be employed at the provincial Labour Office can do the work. Production censuses might be decennial, and the repetition of a family budget enquiry for any particular class might be at even longer intervals. Everything will depend on the strength and ability of the Labour Office establishment, and this again will depend on the financial position. I regard the appointment of an expert permanent staff to make continuous enquiries as the only feasible way of attacking the problem. An extensive and expensive survey, conducted by all sorts of untrained agencies, will be a useless waste of time and money.

A Labour Office for Burma will be established from about the end of May. In this office we propose to collect and tabulate the following statistics :—

- (1) Movements of prices.
- (2) Wages.
- (3) Family budgets.
- (4) Cost of living.
- (5) Rents.
- (6) Hours and conditions of labour.
- (7) Conditions of recruitments.
- (8) Immigration and Emigration.
- (9) Trade Unions.
- (10) Industrial Disputes.

This will be more than enough work for the small staff sanctioned and I think it should be regarded as a sufficiently ambitious programme for the present, until more experience has been gained and more funds are available.

97 to 106. *Nil*.

107. No.

108. No.

Oral Evidence, the 20th April, 1925.

Chairman.—*Q.*—Will you kindly tell us what have been your opportunities for studying the economic condition of the people of Burma ?

A.—Just the ordinary opportunities of a district officer. I am going to be in charge of the Labour Statistics Office.

Q.—For how long has this Labour Statistics Office been working ?

A.—I am going to open it next month.

Q.—What is the immediate object of the Labour Office ?

A.—It is to be based on the Bombay model. We propose to collect statistics of prices, wages, family budgets, cost of living, etc.

Q.—With reference to what industries did the proposal originate ?

A.—There have been strikes among the dock labourers and workers in the oil industry and there was very little information available regarding the conditions of labour, wages and so forth.

Q.—Have you any objections to make the labour office a census and statistics office ?

A.—No, but I think we should proceed slowly and gain experience. This is our present programme.

Q.—Our first object is to obtain a correct census of production, in which will be included agriculture, industry, mines, fisheries, forests and so on. Is it possible to collect all the statistics needed for ascertaining the value of production under these heads through the same agency as is now collecting statistics of Agriculture ?

A.—I should not think so.

Q.—The figures for the cottage industries will have to be collected by district agencies ?

A.—We collect statistics.

Q.—Do you expect any difficulty in collecting statistics of production ? Suppose we want to have a stocktaking census, will you be able to collect statistics of production with the present agency, aided by a small staff ?

A.—I am afraid they will be very inaccurate. If you want accurate statistics, you have to incur a big expenditure of money.

Q.—But the agricultural statistics are fairly complete ?

A.—Yes. We have got accurate estimates of the area for the principal crops.

Q.—Of course, for the minor products you will have to collect information also about the minor industries. The mining figures will have to be collected by the Geological Department. Have you got any representative of the Department here ?

A.—We have a Geological Survey Superintendent. He is a Burma man and he deals with minerals.

Q.—The Development Commissioner looks after the oil mills ?

A.—Yes.

Q.—He looks after factory industries ?

A.—There is an Inspector of Factories under the Development Commissioner.

Q.—What does the Development Commissioner correspond to in India ?

A.—I cannot say. This was what was called the Financial Commissioner's Department. There was a Financial Commissioner who did everything and then it was split up.

Q.—What are the departments which he controls ?

A.—The Development Commissioner will control this new Labour Office, which will open next month and he also controls mines and minerals, agriculture, co-operation and so on.

Q.—To what extent does he control agriculture ?

A.—The Financial Commissioner controls Land Revenue while the Agricultural Department is under the Development Commissioner, together with the Co-operative Department.

Q.—Are they all credit societies ?

A.—You will have the Registrar before you and he will be able to give you all the information you want on that subject. I have never gone into the matter. You will get all the information from the Registrar himself

Q.—From the point of view of the district officer, there is no difficulty in obtaining a census of production ?

A.—There is a difficulty in collecting accurate data.

Q.—Can that difficulty be overcome by the expenditure of money ?

A.—A very big expenditure of money.

Q.—A large amount of agricultural statistics is collected now ?

A.—Yes.

Q.—You want only statistics of minor crops for making this complete ?

A.—Yes, so far as agriculture is concerned.

Q.—The bulk of the statistics are at present available ?

A.—They do not include everything.

Q.—For this initial census, it will not matter if it is inaccurate, but under the heads that I mentioned, do you think that there will be any considerable expenditure necessary for getting the statistics of production. We want statistics of the entire production of Burma ?

A.—Only agriculture.

Q.—Production of all kinds. As regards larger industries probably the Development Commissioner will collect the information ?

A.—Yes, the Labour Office.

Q.—Then, probably for the initial census some additional expenditure may have to be undergone ?

A.—Yes.

Q.—You see no particular difficulty in collecting information as regards the statistics of production ?

A.—There will be some difficulty about fish. It will be difficult to get accurate statistics of anything except crops.

Q.—Statistical information will not all be quite accurate. In no country can you obtain very accurate measurements of all large quantities of production ?

A.—That is so, but you want some kind of reliable statistics, if they are to be valuable at all.

Q.—Could you not get some rough figures of the production of fish ?

A.—You could get rough figures.

Q.—Could not the Head of the Fisheries Department make rough estimates ? Do you want any intensive studies for the statistics of the fish production. From your knowledge of the country how would you suggest such information should be collected about fish ?

A.—It would be very difficult. There is a very big production and a very big consumption.

Q.—What proportion is it, can you give us any idea of the money value ?

A.—I could tell you next year, after I have taken the family budgets, but I could not do it now. I know that there is a big consumption of fish among the Burmans.

Q.—Do you see any insuperable difficulty in collecting this information with a reasonable amount of outlay ?

A.—I do not see how you can get any accurate information. Something might be done in connection with leased fisheries. We could get the lessees of fisheries to give us some information on this point. There is, however, a considerable amount of fish caught by people who have net licences, and you cannot make any estimates as to that.

Q.—Probably it will cost very much ?

A.—Yes, very much, more than the fish will bring in.

Q.—So far as the production statistics are concerned, you do not apprehend any real difficulty in collecting the requisite information, provided that some additions are made to the staff and some money is spent ?

A.—I think it will cost a lot of money. The Labour Office staff is to consist of three investigators only.

Q.—What does the Labour Office cost come to per annum ?

A.—Rs. 70,000 per annum. That is only the estimated cost. The particulars are in this (hands up printed document). I will leave you this copy and you can get more if you like, from the Chief Secretary.

Q.—How much does the Bombay Office cost ?

A.—I have it here. The budget estimate is Rs. 1,15,308.

Q.—What other tests would you apply to find out the economic condition of the people ? Income, wealth, wages, indebtedness—taking all these items into consideration what other tests would you apply for production ?

A.—I think we have got too many as it is. We have to proceed slowly at first, till we gain experience with the present staff.

Q.—What would you restrict the survey to ?

A.—To wages, cost of living, production of the main crops, minerals and the big industries.

Q.—You would not make any intensive studies as regards Income or Wealth ?

A.—I would not make any attempt at present, until we gain some experience with this ambitious programme for the Labour Office. I think the economic survey should be done by a permanent staff collecting continuous information.

Q.—You have to take stock at intervals—at the commencement, and probably check it from year to year, marking the variations ?

A.—Yes.

Q.—If that is so, how long would you take to complete the first stocktaking census, and for that census under what heads would you collect the information ?

A.—I shall have more ideas about it a year hence. I am not prepared to say now how long a census like that would take.

Q.—Supposing we wanted a production census from every village or every city, what agency would you employ ? How would you proceed with the work ?

A.—Do you want the whole of the products ?

Q.—Yes, supposing we want rough estimates prepared, how long would it take to collect information only for production ?

A.—Village by village ? Do you want estimates according to present information, taking what figures the officials give us as correct ?

Q.—Yes, and then checking in some places the information as collected under the heads I have mentioned. We have agricultural statistics, but we have not got the information about some of the minor crops. We have not got statistics about cottage industries. We want to collect all that information.

A.—If you send out men to every village you would get a very great mass of inaccurate information within a month.

Q.—Can you get accurate information within six months ?

A.—You would have to employ a special staff.

Q.—We agree that that will be very necessary, but as regards production statistics what additional staff would you require for the villages ? For an initial census, say, if it took six months or a year, what additional staff would you need ?

A.—I do not know how it would be done. Are you going to take sample villages ?

Q.—Who collects the statistics now ?

A.—The Revenue Surveyor.

Q.—He corresponds to the Circle Inspector in other parts ?

A.—He works as an assistant in the Land Records Department.

Q.—What additional staff would you require ? Would it not do if you give him an assistant for two or three months ? The bulk of the information is already there ?

A.—But the other things contain a large number of small details.

Q.—Our business is to prepare a scheme for an economic survey. What sort of a scheme would you suggest for Burma? For production purposes you have the agricultural statistics. The additional information required is of a minor character, how much staff would you need; how would you collect information and what will it cost taking it as a whole? If you tell us to-morrow or within the next few days, after discussing the matter with other revenue officers, your opinion may be of substantial help to us?

A.—That is to say, you want to know the additional amount required to collect this information in the villages within the year?

Q.—Yes, we want all the additional statistics. You have already collected a lot of statistics of production but they do not give all the economic data we want. We want to develop it so that the information may be complete.

A.—I suggest that it might be done by doubling the Land Records staff; by doubling the annual cost of that it may be done. I think the cost will be absolutely prohibitive.

Q.—If the existing staff gets some assistance, I suppose that would be enough?

A.—Oh! no. The Land Records staff are concerned with the assessment of land revenue. The preparation of the estimates of output is subsidiary. You get the exact areas from the assessment.

Q.—In the case of settlement reports, you collect all that information?

A.—Yes, the Land Records staff collect it year after year.

Q.—What organisation is necessary within the district? Of course, so far as the outside of the district is concerned, we don't want to trouble you. Think the problem over and kindly favour us with a note in, say, 10 days' time. I mean from your knowledge of local conditions?

A.—I will give you some facts about the districts to show what extra staff would be needed for the statistics of production of each village.

Q.—Your information might be 25 per cent. out. Supposing the Government accept your estimate, if we find it is 25 per cent. out we can correct it next year. We must learn in this way. Will you kindly send the note to us within a fortnight's time?

A.—Yes, very well.

Q.—So far as the production statistics are concerned, in the urban areas, would you entrust the collection to the municipality?

A.—They would not be willing to pay for it.

Q.—But they pay for the population census?

A.—Most of the municipalities in Burma are very hard up.

Q.—All over the world they have been hard up since the war, because people are so badly off. The Government want to know the true condition of the people including those in cities also?

A.—The municipalities might reply that if they had the money, they could improve their roads and the economic conditions would be improved thereby more than by taking a survey of the existing conditions.

Q.—If you do not know how you stand, how will you improve yourself? Then you will be acting upon wrong information. You must take stock and see what the conditions are; a general statement will not do?

A.—You want me to look into one or two villages in the whole district and see what the whole district comes to?

Q.—Yes.

A.—Very well.

Mr. Kaul.—Q.—May I take you through the details of some of the things we have been discussing? As regards your agricultural returns, you prepare the statement of the actual areas under crops?

A.—Under the main crops.

Q.—Does not the Patwari, or whoever he is, who is required to do this work record the area under minor as well as major crops?

A.—Yes, they are all recorded.

Q.—Then in order to get a return of all crops, major and minor, all that you have got to do is to see that he transcribes these notes when he makes up his returns. At present what he does is to put down the figures of the principal crops, and all the other figures of all the other crops he lumps together. So it would mean only a little extra labour to put every minor crop into the report which comes to headquarters?

A.—I think this is correct. You can get it from his map and from his register too.

Q.—He puts it down in the crop inspection register?

A.—Yes.

Q.—Every crop that is sown on every piece of land?

A.—Yes.

Q.—At present he does not transcribe this in his statements? He takes only those crops which are required for the forecasts?

A.—Yes.

Q.—There is the forecast and there is the actual area under crops, i.e., the harvest crop return? In that he enters the main crops? As regards the other crops he totals them and puts them down as "other crops". That is he puts down the totals under *Kharif* and *Rabi*?

A.—That will be so.

Q.—So he will have to add some more columns to his returns and enter the other individual crops, whether the area is 2 or 10 acres?

A.—Yes.

Q.—It will mean only a little extra labour?

A.—Yes, so far as the crops are concerned.

Q.—The next thing is finding out the outturn. It is at present ascertained for the principal crops only. So far as the minor crops are concerned, they are not ascertained. This can be done by holding experiments regarding the minor crops as well?

A.—Yes.

Q.—Now, for instance, you hold at present 10 experiments for the major crops. In future you would have to carry out 4 experiments on the minor crops as well. Out of 12 experiments which you now carry out in the districts in a year, at present you devote your attention to the major crops alone—in future, instead of having 12 experiments on the major crops only, you will have to do only 8 of the major crops and 4 with regard to the minor crops and you would gradually obtain material for ascertaining the yield of the minor crops ?

A.—That is so.

Q.—I presume you have done settlement work ?

A.—No.

Q.—You have probably seen settlement work done ?

A.—Yes.

Q.—You know that statements as regards unimportant crops are prepared ?

A.—Yes.

Q.—Where there are no data of yield a cash value is imagined but in the way that he (the settlement officer) values the other crops, in arriving at the assets in his estimate, we could value every crop that is grown, by ascertaining the yield of the minor crops ?

A.—Yes.

Q.—Now, the conversion of the area into quantity and of the quantity into value is the additional work to be done ?

A.—Yes.

Q.—Supposing we had to appoint additional men to do this part of the work, and the returns come to a man who sits at the headquarters and converts this area into values. That will be mathematical work. Supposing we provided that kind of assistance, it would cost very much less than doubling the Revenue staff ? Don't you think that we can get the agricultural production in that way ?

A.—For crops, yes, but it would not include every production.

Q.—The other things are dairy products, pastoral products, and even fisheries. About fisheries you can get some figures from the railways and ports, export and import figures, which would be useful for checking and if we want to ascertain it for a village, all that would be necessary would be to have a man in charge of a group of villages who would go round slowly for two or three months, and during the harvest he would take a note of how many cattle had died, how many skins had been extracted, how many milch cows there were, how much milk each cow was giving and so on. It would not mean a very large staff to get this rough information. In order to get very correct information you want a special staff ?

A.—Yes, you can do that by an expert investigator.

Q.—But if you wanted a rough estimate 10 per cent. this way or that way ?

A.—It may be, but you would not be able to find out in which way it was exaggerated.

Q.—Supposing we were to add a certain number of men for each tahsil, who would do this work, convert all the area into value as regards crops and collect all this other miscellaneous information, it would not come to doubling the staff? It would be very much less than that?

A.—I do not know. The Revenue Surveyor is at present in charge of several villages.

Q.—What is the sort of duty that he is in charge of?

A.—You can ask the next witness that.

Q.—You have got your annual reports which give these figures of surveys and so on?

A.—Yes, the Land Records Administration Reports or the Land Revenue Administration Reports. The Commissioner of Settlement of Land Records is also giving evidence before this Committee.

Q.—About mines you said that the information is all collected by the Development Commissioner—those mines which are governed by the Mines Act. I suppose all the information is collected by the Chief Inspector of Mines?

A.—I could not really say. These are chiefly wolfram and tin mines. I have never been in a district where they have mines like that. I have only been in districts where there are oil fields.

Q.—There are certain mines which are governed by the Mines Act and every one of them is under the Chief Inspector of Mines?

A.—Yes.

Q.—We understand that the executive authorities collect information about mines which are not governed by the Mines Act—small miscellaneous mines—and that they are responsible for giving information to the Mines Department as to which miscellaneous mines were in existence?

A.—The district officer sends in annual reports about the amount of clay extracted for bricks, etc., but it is a very rough estimate. That I think is about all. I have no experience about mines under the Mines Act.

Q.—The Mines under the Mines Act would be looked after by the Chief Inspector of Mines who would collect the information about them?

A.—I do not know.

Q.—What the authorities would have to do would be to collect information in respect of such mines as are not under the Mines Act and about which, you are at present to collect some information and report upon them. If you are asked to obtain the total output and the number of men employed, it would not be an impossible task?

A.—It is done at present as regards clay and, I think, building stone.

Q.—These are the only kinds of mines which exist in your districts?

A.—Yes, oil also.

Q.—You furnish information about them?

A.—They have to pay royalty upon all their products, which gives us figures for production and they show also how much is free from royalty.

Q.—So you can get the exact figures for the production of oil. Supposing we were to arrange for obtaining the production of large industries by means of special investigators or by the central office sending out schedules to them, what would be left would be the minor industries in the villages and towns ?

A.—Yes.

Q.—In Burma at present I suppose these minor industries are very small ?

A.—Very small.

Q.—And it would not be difficult for the district officers with the help of the additional men that might be appointed to ascertain the production of these small industries ?

A.—I think that it would be rather difficult. With regard to weaving for instance, you have a very large number of looms in the villages. There was a census of looms taken at the last Provincial Census in 1921. I am not sure whether the Census Superintendent regarded it as accurate or not.

Q.—The Census of looms need not be difficult at all. Nobody can conceal looms. It would be an easy matter to find out how many looms there are in a district altogether ?

A.—We do not know how much they produce.

Q.—Yes, that is what would have to be ascertained when you were making an intensive survey of the villages. You would have to add up all those looms and that would act as a corrective to the general enquiry. You would ascertain the total amount produced by each loom and the amount of raw material that they employed ?

A.—I do not know that you can get it very accurately.

Q.—Do you think that a census of production of that sort can be made ? I have practically gone over the whole ground. There will be certain things where special arrangements would have to be made—I leave the wages question to Mr. Burnett-Hurst—but the cost of living would have to be ascertained, how would you ascertain it ?

A.—By family budgets.

Q.—By intensive studies ?

A.—Yes.

Q.—‘ Wealth ’ you think is impossible or unnecessary to ascertain .

A.—I do not think it would be worth the expense to get an inaccurate statement.

Q.—Neither ‘ Income ’ nor ‘ Wealth ’ ?

A.—No.

Q.—And ‘ Indebtedness ’ ?

A.—You would not get correct answers. That is the opinion expressed in all Settlement Reports. Settlement officers say that they have made enquiries about indebtedness and the answers received were never reliable.

Q.—Supposing they were not reliable at first, they might become more and more reliable gradually ? Have you any serious objections to trying to ascertain the income or the wealth ?

A.—My objection is that it is not worth while because the result does not seem to justify the expense. I would rather carry on with the programme of getting statistics of wages and of the cost of living.

Q.—Supposing an intensive survey of villages was being made and supposing we also asked the people what their income or wealth was, would they have any objections ?

A.—No objections, but they would not know. That would be the objection.

Q.—Do you mean that they would not know what the objection was or what their wealth was or that they would not like it ?

A.—They would not be able to tell. They are not in the habit of thinking about it. Or else they live from hand to mouth, more or less.

Q.—But where the people have some income ?

A.—Shopkeepers, do you mean ?

Q.—Yes.

A.—They would not be willing to tell the truth. They would think that it was connected with taxation—the Income Tax.

Q.—Supposing we were to assure them that it was not connected with the Income Tax, would they trust us ?

A.—They would be very suspicious, I think.

Prof. Burnett-Hurst.—Q.—Are you of opinion that what are required in India at the present time are accurate statistics and not a mass of statistics which are full of gross inaccuracies ?

A.—I think that is required. I think it is better to have a few accurate statistics rather than a mass of inaccurate statistics.

Q.—Do you consider that there is sufficient material available at the present time to enable one to form an estimate of the economic conditions of the people of Burma ?

A.—Not if it is expressed in any statistical form.

Q.—Mere vague generalisations ?

A.—Yes, mere vague generalisations.

Q.—Do you think that it is essential to get accurate information about the economic condition of the various classes of the people expressed in definite statistical form ?

A.—Yes, I think it would be advantageous if we had that information, but that is going to cost a very large sum, which might be spent usefully in other ways, and those other things might be more beneficial to the province.

Q.—With your knowledge of the conditions of this province, do you think it would be possible, as someone has suggested, that intensive studies could be carried out by the people of the villages themselves ?

A.—Not in this province.

Q.—Not in Burma ?

A.—No.

Q.—How far are the statistics of income, collected by Settlement officers in Burma in the course of their settlement operations, accurate ?

A.—You mean agricultural income ?

Q.—No. There are in certain Settlement Reports statistics of the income of the families as well as statistics relating to indebtedness. You have already expressed an opinion about indebtedness. But what about the statistics of income ?

A.—They are probably more accurate than the statistics of indebtedness.

Q.—Would not a man be more prepared to state his indebtedness than his income ?

A.—No. It is a curious fact that he is not.

Q.—Is that a characteristic of Burma alone ? I suppose you are not acquainted with the other provinces of India ?

A.—Personally I think it is generally so at Home too. People do not like to expose the fact of their being in debt.

Q.—Yes, probably in England, but not so much in India ?

A.—In Burma they would be against it. I do not know anything about the other provinces of India.

Q.—Is the proposed Labour Office to deal with Rangon or Burma ?

A.—Burma.

Q.—Is the work of the Labour Office to cover rural as well as urban areas ?

A.—Probably.

Q.—But its initial investigation will relate to urban areas, I take it ?

A.—Yes, it will begin with industrial labour in urban areas. Of course agricultural wages are more important than anything. We will have to go on with that.

Q.—I note that you have said that one of the main subjects about which your office is going to collect information is "Wages." A certain number of employers resent the taking of a Census of Wages. Are you not of opinion that it is to the benefit of the employer as well as the benefit of the employee to have accurate information regarding wages, etc., published ?

A.—Yes.

Q.—You have also recommended the collection of family budgets ?

A.—Yes.

Q.—In collecting family budgets do you think you will get accurate information ?

A.—It depends upon the men who are to be investigators.

Q.—That is to say, for this type of work it is essential to get a highly trained investigator ?

A.—Yes.

Q.—I take it from your replies to the questionnaire that you would prefer appointing a small well-trained staff to collect accurate information

rather than have a large heterogeneous, ill-equipped staff to collect information which may, or may not, be of value ?

A.—Yes.

Q.—In collecting family budgets what method do you suggest as the best ? Would you send an investigator to a household and get that man to question the family as to how they spend their income or would you send an investigator to make periodical visits to the household and study that family for a considerable period of time, say, a year ?

A.—I would use both methods and see which is the best.

Chairman.—Q.—You have an open mind ?

A.—I have to read the Bombay Family Budgets report and see what the best method is.

Prof. Burnett-Hurst.—Q.—The mere reading of the report or the mere scrutiny of a family budget will not tell you whether the figures are accurate or not ?

A.—That is so.

Q.—I suggest that it is not possible to get accurate information by merely going to a family and asking for the return of their expenditure during the past year. I presume that you would take a year as the unit of time ?

A.—I do not think it is necessary in urban areas.

Q.—What about families that go to a town and carry on certain work there for a period of time and then return to their villages ? I presume that practice which prevails throughout the other provinces of India also applies to Burma.

A.—It is a slightly different problem here. We have Indian emigrants migrating to the labour tracts leaving their families behind in India. In the case of Burman labour in the oil fields their families live with them all the year round.

Q.—What about industrial labour in Rangoon ?

A.—It is mostly immigrant labour from Madras.

Q.—Do the workers periodically migrate to their villages ?

A.—Yes, when they do not come with their families.

Q.—When do they migrate ?

A.—That is one of the things we are going to enquire about.

Q.—On the approach of the monsoons ?

A.—In the Akyab district, which adjoins Bengal, they arrive about November or December and go away about the beginning of the rains. In Akyab the rice milling season closes down for the rains.

Q.—When you are collecting your family budget to ascertain the expenditure of a family, would you not be “killing two birds with the same stone”, if you obtained not only the expenses but also the details of the income of the family ?

A.—That would only apply to the class for which you are collecting family budgets.

Q.—It has been suggested that intensive studies should be made in certain typical villages of individual households, of each and every household both with regard to income and expenditure. Do you think that it is practicable ?

A.—To make an intensive study ?

Q.—An intensive study in a typical village.

A.—It is quite possible with an expert investigating staff.

Q.—Would it be possible to divide districts into tracts of similar economic characteristics and within those tracts, to select either typical villages or villages by random sampling, that is to say, by making a list of your villages alphabetically and marking off every 50th or 100th and making an intensive study of those ? Which method would you prefer, typical villages or a village taken by random sampling ?

A.—Well, the random sample method would require more villages to be selected and would not do.

Q.—Not necessarily. You might carry out a system of random sampling and you might get a microscopic picture of the district as a whole ?

A.—I would prefer a typical village.

Q.—Having selected a typical village would it not be open to objection by the man in the street that such a village is not typical ?

A.—Yes.

Q.—You would take no notice of such objections ? Would not a selection by random sample obviate that ?

A.—I think you might ask Professor Bowley. I have just begun reading statistics.

Q.—Professor Bowley and I have carried out enquiries on that basis ?

A.—If you and he go to the village, I am willing to waive what I said about my typical village.

Q.—Are you of opinion that people will resent an enquiry into their wealth ?

A.—Yes, it is the same thing and for the same reason.

Q.—Do you think that the shopkeeper, the grain dealers and the professional classes would state their wealth accurately ?

A.—I think they would be unwilling to do so.

Q.—In your answer to question 58 dealing with the Wages Census you say “ I think an attempt should first be made to obtain the statistics without recourse to legislation to give compulsory powers ”. An attempt was made by the Provincial Governments and the Government of India. I think in 1921-1922, and it did not succeed ?

A.—At that time there was no provincial Labour Office.

Q.—There was a provincial Labour Office in Bombay ?

A.—In Bombay, it was quite successful.

Q.—At least the Wages Census was successful ?

A.—Yes.

Q.—If you had a labour office in every district in every province, the next attempt might be successful ? There is a Labour Commissioner in Madras ?

A.—He has nothing to do with the labour question.

Q.—He carried out a Wages Census which he admitted was not successful. Employers would not give returns and he suggested that compulsory powers might have to be employed. In view of the fact that up to the present time, complete returns are not available by voluntary means, it may be necessary to apply compulsory powers ?

A.—It may be necessary, but I think that when a regular office has been opened for the collection of labour statistics, employers may be more willing to supply information than when certain requests for information are made by some other departments. I hope to get on without any compulsory powers. If I am not successful, I will ask the Government to introduce compulsory powers. Of course, I do not know whether the Government will agree to that or not.

Q.—Do you think it would be at all possible to extend your office in the near future into a Provincial Bureau of Statistics ?

A.—It is quite possible, if the necessary finances are forthcoming, to collect general economic data and to carry out the decennial census.

Q.—In your answer to question 61 you say, “ Methods of overcoming the difficulty are indicated in text books of statistics (e.g., Bowley’s *Elements of Statistics*, 4th Edition, pages 32 to 38). The method most suitable for application to the available statistics would have to be selected.” You refer us to Bowley ?

A.—I had read it in Bowley a day or two before.

Q.—This problem is one of the special features of Indian industrial life ?

A.—Yes.

Q.—And Dr. Bowley is unacquainted with Indian conditions ?

A.—He deals with the problem of absenteeism.

Q.—It is a different problem from that which is experienced in India, because in Great Britain you have accurate returns of unemployment from trade unions and labour exchanges. Here you have no such information. You have a man who is employed in a mill during part of a year and you can get accurate returns for the period of his employment there. Then he goes back to his village and engages in agricultural pursuits and you do not know what his income is there. How are you going to trace that man ? Are you going to send an investigator to follow him up to Madras to see what his income is as an agriculturist ?

A.—If the Madras and Bengal Governments also appoint Provincial Labour Officers, we will try to get some information from them.

Q.—You would try to follow him up ?

A.—Yes.

Q.—You are studying a family which is engaged partly in industrial labour and partly in agriculture. It is the very sort of family about which we find it most difficult to obtain information. I am just putting the question to you with a view to ascertaining your opinion as to how you would grapple with the difficulty ?

A.—I should get ideas from you. It will have to be tackled somehow.

Mr. A. J. PAGE, I.C.S., Commissioner of Settlement and Land Records.

Written Statement No. 1.

(The numbers appearing at the beginning of paragraphs are those questions in the Questionnaire.)

1 The subjects given appear sufficient and comprehensive.

2. I accept the classifications of Appendix 9 (a) and Appendix A except that it seems necessary to include a heading for "transport" under I—Agriculture. Movement of crops from the ground is an important item and the man who does some of the transporting may not always end his journey in an urban centre, *e.g.*, he might cart crops to a river bank for water transport.

3. A better division as far as Burma is concerned is into the following tracts :—Central Basin, Deltaic, the Northern Hill Tracts and the Coast Ranges as adopted in Mr. Morgan Webb's Census Report.

5. Chapter XVII of the Report on the Land Revenue System of Burma should be studied with regard to the reliability of the statistics of cropped areas and the crop reports. The authors of that report after a survey of conditions in different parts of India came to the conclusion (paragraph 198 *ib.*), that for Burma, as a whole, the statistics were not materially, if at all, less accurate than elsewhere.

The "Agricultural Statistics of India" as far as Burma is concerned are of course compiled from our Season and Crop Reports and as far as crops are concerned the figures are compiled from those recorded by the Revenue Surveyors in their registers. As regards live-stock the figures are those supplied by the village headmen to Township Officers who submit returns for their Townships to the Deputy Commissioner. Such figures are roughly as accurate as could be expected seeing that they are not collected by any agency specially appointed for that specific purpose. The figures for rural areas are likely, on the whole, to be more accurate than for areas which include urban areas since rural headmen are likely to have a much more intimate knowledge of the conditions prevailing in their charges than the corresponding ward headmen in towns.

As regards "Estimates of area and yield of principal crops" the difficulties involved in arriving at satisfactory figures will be found fully discussed in the introductory remarks to Statistical Bulletins No. 2 and Nos. 3 to 5 issued by this office. No. 2 deals with the Rice Forecast and Nos. 3 to 5 with the Cotton, Groundnut and Sesamum Forecasts. Graph 2 at the end of the Rice Forecast bulletin shows at a glance how the forecast estimates have differed year by year from the actuals. The whole question of the best method of calculating the rice forecast is still under consideration and occupied a great deal of the attention of my predecessor last year. I have not myself been in the office long enough yet to tackle the problem. It seems clear however from my predecessor's notes that the method which has recently been used is defective in several respects. For example, it does not allow for crop failures being as a whole on the worst land and it does not allow for an increased internal consumption in good years when more food will be cooked for a meal and therefore more wasted and when more rice will be given away as religious offerings or for charity.

6. The machinery for crop reporting in this province is sufficient. Steps are being taken to remedy the chief defect in the system by introducing a more efficient class of Inspectors who supervise the work of the revenue surveyors.

7. The extra cost involved in collecting information about minor crops such as vegetables, fruit, etc., would not be worth incurring and it is doubtful if the statistics collected over small and scattered plots and areas would be reliable.

8. If the information is not worth collecting for tracts under supplementary survey it will be still less worth while or reliable for areas outside supplementary survey.

9. In Burma the information regarding live-stock, ploughs and carts is furnished annually. As mentioned above it is given by headmen and collected by Township Officers. Variations of over ten per cent. in district annual returns are queried at once by this office so that apart from any longstanding undetected error in any particular district the figures should be comparatively correct.

It will be noticed that in our yearly figures no information is given regarding certain backward tracts nor for the Shan States. Figures for these areas were however given in the Agricultural Statistics of India for 1919-20 but these were only rough estimates. A regular census is being taken in these tracts for the first time this year though the Southern Shan States and some other tracts have already reported that they will be unable to compile the figures required.

The figures are as reliable as can be obtained.

10. Statistics for meat and skins might be collected by making it obligatory on slaughterhouse lessees appointed under the Village and Municipal Acts to keep a record of the necessary information. They are already required to maintain registers giving descriptions of the animals slaughtered so that it would not be difficult for them to keep a note of this further information.

Statistics for skins can also be checked against the export figures.

(c), (d) No statistics for wool or tallow would be available.

(e) Statistics for bones could be obtained from the railway company as far as up-country products are concerned. Wagon loads of bones are occasionally seen on the line. I am unaware of the method of their disposal in Rangoon or who could supply information regarding the Rangoon stocks.

(f) The trade in game is illegal as no one ever gets permission from the Deputy Commissioner to trade in forest produce of public forest land as required by the Rules under the Forest Act. There is however a considerable amount of traffic under this head especially since the expansion of the Arms Act.

18. I agree.

19. Most fresh water fisheries are sold by auction on yearly leases. There are many conditions attached to these leases. A further condition might be added making it obligatory on the lessees to keep regular accounts

of the amount of fish caught. No other method suggests itself. It would seem impossible to obtain any reliable figures of the amount of fish caught with licensed implements in open fisheries, *i.e.*, fisheries not leased out.

21. (a) There should be no difficulty in obtaining information regarding the very important industry in this country of *nga-pi* or fish paste manufacture. The makers of it are usually located in definite centres so that a census of their products would not be difficult to obtain.

22. The only mining industry with which I have come into contact is that of the Mogok Ruby Mines. From my experience there I should say it would be almost impossible to get reliable figures of the following minerals mentioned in Appendix E. Apatite, Zircon, Amethyst, Aquamarine, Corundum, Garnet, Precious Stones, Rock Crystal, Rose Quartz. Much of the trade in these inferior stones is in the hands of native miners and traders from whom detailed information is extremely difficult to procure.

40. (a) I see no reason why the figures should be unsatisfactory because they refer to selected villages only. For seasonal occupations returns relating to a particular month are of course of no value by themselves.

(b) The division in the tables under two heads only "unskilled or agricultural labourers" and "ploughmen" seems insufficient owing to the different scales of remuneration given for the different operations enumerated in my answer to question 41.

(c) Tabulation of the *range* of daily average wages is correct and in accordance with approved statistical methods though one would like to know the mode or median of the figures in this range.

(d) Information should be given in the case of daily wages of the number of days for which wages were paid.

(e) This depends on what is meant by an 'average wage'. I doubt whether any technical value is attached to the word 'average' in this connection. If the tables state that the daily average wage in a district varies between eight annas and one rupee I think that the ordinary district officer who supplies the figures in the first place would mean the daily wage of a typical labourer doing a typical amount of work and that this wage was as low as eight annas in some parts of the district where labour was abundant and as high as one rupee where it was scarce.

41. There is no agency in Burma which collects statistics of wages. The last quinquennial census of wages in Burma was in 1916 and was conducted by the Commissioner of Settlements and Land Records. In 1921 the quinquennial census was postponed pending a decision whether an all-India Census of Wages was to be held. In 1923 the Government of India decided that there were objections in the way of prescribing uniform tables and procedure for a periodic wage census and left the question of such a census with Local Governments for decision. In accordance with this ruling the Government of Burma in 1924 decided that as no use had ever been made of the statistics of wages collected in the past and as equally reliable figures could be gleaned from Settlement Reports the attempt to collect such statistics for rural areas should be abandoned.

The following is briefly the system adopted in 1916 for the collection of statistics of wages in agricultural areas. Information was collected for these classes of labour :—

- (a) Village Artisans, Carpenters and Blacksmiths.
- (b) Agricultural labourers, Ploughmen, Weeders, Transplanters, Reapers and Unskilled labourers.
- (c) Transport, Steersmen, Boatmen and Cartmen.

The District Land Records Staff was used to collect the information which was tabulated to cover wages in cash, wages in kind, wages by season or by trip, wages by day and wages by month and as regards wages by season or trip the number of days for which wages were paid. Each Deputy Commissioner was asked to select ten villages in his district which should generally be the headquarters of a revenue surveyor but not the district or sub-divisional or township headquarters. An Inspector of Land Records filled up the schedules. In tracts outside supplementary survey the Township Officer filled up the schedules.

For the compilation of the returns the province was divided up into four wage tracts, the Central Basin, the Deltaic, the Northern Hill Tracts and the Coast Ranges. Specially administered territories and Northern Arakan were omitted.

In my opinion this system was as good a one as could be adopted whenever another census should be considered necessary.

42. The classification in my answer to question 41 would be most suitable for Burma. Separate details for sowers are not available as sowing is generally included in the work comprehensively included in that done in the ploughing season. Labour employed on bunding and other earth-work would be done by the "unskilled labourers." It seems necessary also to include village carpenters and blacksmiths, cartmen and boatmen in the general agricultural economy of which they obviously form a very essential part.

43. Our 1916 tables gave the total number of days for which the different wages were paid but these figures of course give no indication of frequency of employment of the individual labourer throughout the year. This would be difficult if not impossible to estimate. For instance, there is nothing to indicate whether a ploughman on the completion of his work fills up the rest of the year as a planter and reaper or goes off as a cartman or boatman.

44. Yes. To ignore such payments would certainly detract from the accuracy of the true wage values. In this province such extra payments (whether food or betel or tobacco) are not confined to harvest alone.

45. Settlement officers in this country usually convert payments in kind into terms of cash at the rate assumed as the standard price, tract by tract, of the crop cultivated. This standard price being based on the average of a series of years is purely theoretical so that the conversion of payments in kind at this rate may give values not in accordance with current facts. To obtain a correct valuation for census purposes such payments should be converted at the monetary rates prevailing at the time and reduced if necessary to a standard by the employment of index numbers for the commodities concerned.

46. No.

47. Such supplementals can be measured by systematic enquiries conducted on the lines of Settlement enquiries.

48. I have been unable to obtain a copy of the Third Wage Census of Bengal so it is impossible to give a definite opinion on the merits of the two different methods of representation employed.

I presume that to get the median and quartiles figures showing the total number of persons concerned would have to be obtained for each district and this would involve a much more elaborate enquiry than that of the Punjab Survey.

In the latter, as far as I can gather, the "mode" for each district must have been stated from the general knowledge and impressions of the *Kanungos* who were responsible for the figures. Otherwise the mode is not so easily discovered with great accuracy as are the median and arithmetic mean.

As regards the graph of the frequency distribution there is an underlying assumption that the units—villages—are of a fairly uniform size. The tables do not indicate whether there is any great variation in this respect from district to district.

49. Of course the utility of the wage returns would be greatly enhanced if the "total number of persons" to whom the rates applied was known but such figures could only be obtained with accuracy at the time of the regular Population Census.

50. Yes.

51. No.

63. Statistics compiled from income-tax returns are of no value whatever as an indication of income in rural or urban areas outside large towns where perhaps the majority of assesseses keep accurate accounts. This remark is made subject to the exception of Chettiar money lenders and Chinese traders who all keep careful accounts but the returns relating to them may be vitiated by doubts of the reliability of the subordinate assessing staff.

64. The household.

65. The year should be taken as the unit of time.

66. Different units must be adopted and converted into one yearly unit for purposes of comparison.

67. This would be very difficult to estimate. *E.g.*, what value could be placed on leaves, roots, etc., collected in the jungle as substitutes for vegetables?

70. (a) Sale prices noted in revenue returns are of little value as there is no indication of the quality (fertility, etc.) of the lands sold.

(b) The value of agricultural land bears no relation except in a general way to the land revenue as the latter is fixed after a consideration of several different items (gross produce, rents, nett produce, etc.), all of which may affect the sale price in varying degrees.

(c) Careful local enquiry is the only way to value agricultural land.

71. Buildings in villages would be valued by their capital cost less depreciation checked by local opinion of their value.

72. In most towns in Burma this method is only applicable in the busy quarters, *e.g.*, near the bazaar. Municipalities which base their assessments on rental values find that these soon become arbitrary or non-existent as the outskirts of the town are approached.

73. Impossible.

77. The "mass unit" system as worked out for India is not suitable for Burma. Articles such as wheat, mutton, milk would almost disappear instead of being their consumption, as in the India figures, 30, 47 and 20 per cent. of the consumption of rice. On the other hand fish in its various forms—fresh, dried or fish paste—would be an important item which could not be neglected.

If a separate "mass unit" system were worked out for Burma the figure for fish certainly could not be calculated from "consumption = production *plus* imports *minus* exports" as the production of fisheries is unknown. Estimates would have to be framed from enquiries as to the relative sales of fish and other listed articles in large bazaar centres.

Again any such system worked out for Burma as a whole would be very much out if applied to such a heterogeneous community as Rangoon which, one would gather, must exceed Bombay in complexity.

78. The usual method of collecting information regarding family budgets is by taking typical families.

The method of taking random samples might be useful if there was any one competent to work out "probable errors of random sampling" and the like.

79. For a year, but no average householder, certainly not a Burman agriculturist, is going to keep continuous accounts of his daily household expenditure.

80. As large a proportion as the time at the disposal of the collecting agency will allow.

81. Yes, also gambling debts, no mean item in some budgets but it would be difficult to obtain details.

82. The statistics of prices issued by this department are on the whole fairly reliable.

Indebtedness : 83 to 86.—

83. There are no other detailed official records.

84. In Burma the unit has always been the household and this is the only one suitable to conditions here.

85. The list given covers all the main heads under which indebtedness has been tabulated in our Settlement Reports and no others appears necessary.

86. A perusal of recent settlement reports leads one to the conclusion that special intensive enquiries will not give reliable results.

Mr. Furnivall on page 20 of his Myingyan report discusses at some length the difficulties encountered on account of the unwillingness of cultivators to admit their debts and finally says that the statistics he collected were so misleading as to be inaccurate and were accordingly omitted from his report.

Mr. Reynolds in his Magwe Report (paragraph 51, page 16) corroborated from his own experience Mr. Furnivall's remarks.

Mr. Stewart in his Kyaukse Report of 1922 says that his figures show that indebtedness was not so heavy as at the time of original settlement and apparently (though he does not say so) the same unwillingness to make full disclosures was to some extent the reasons for the difference.

Mr. S. A. Smyth at an earlier date in his Pyinmana Report found a similar decrease and noted that "no satisfactory estimate can be made of the extent to which the figures represent the facts".

Mr. Jamieson in his Bassein Report of 1914 (paragraph 20) also states that his statistics present much too favourable a picture of the normal state of indebtedness and adds that there were grounds for suspecting some concealment of debt, more especially if it involved the mortgage of land. He also placed (paragraph 21 *ib.*) little reliance on the figures showing the objects for which cultivators alleged their debts were incurred.

Further difficulties arising from special intensive enquiries were found to be present by several officers on account of the time of year when the enquiries were held.

Mr. Clague in his Sandoway Report of 1916 (paragraph 40) said that he could only draw general conclusions on account of the examination being conducted at the most favourable time of the year, January to May, while Mr. McCallum in his Tharrawaddy Report of 1915 (paragraph 32) stated that if the enquiry had been held in the rains the proportion of debts returned would have been 100 per cent.

From these extracts it would appear that whatever reliance might be placed on a general survey its results would be accepted with more confidence than the very misleading conclusions of special intensive enquiries.

87. I have no criticism to make except to refer to my remarks above regarding the difficulty of conducting any reliable enquiry under such a head as "indebtedness".

88. The village headman could be employed to give the total production of any cottage industry.

The fishery lessee could give details of his total production of fish.

89. No. The Revenue Surveyor would have to obtain his figures through the same channel.

Question 92 onwards. Most of these questions depend on how much money the Central or Local Governments are prepared to devote to such enquiries.

Questions 107, 108. I am sure that Municipalities, District Councils or Villages would object very strongly to finding any of the money concerned.

Written Statement No. 2.

(Furnishing information in reply to a specific question by the Committee regarding the additional establishment necessary, together with the cost involved to collect information as to the value of agricultural and other production.)

For a typical Lower Burma district where there is only one main crop in a year—rice, headmen could be supplied with forms in which the holding numbers, the owner and tenant, the area of each holding were already filled up by the revenue surveyor. All that the headman would have to do would be to fill in the column giving the outturn of each holding.

These figures would have to be checked by a fairly intelligent and responsible officer on Rs. 200 per mensem (say) *plus* travelling allowance. The checking work for the main harvest would have to be done within the 3 months January, February, March with a working time of 70 to 80 days. A typical Lower Burma township contains about 80 village tracts. It is doubtful if on a rough check the officer could manage one village tract a day but assuming that he could it works out that each township would want an officer on special duty for three months. Take 6 townships to a district : 6 such officers would be required. They would want a clerk and a peon each. Pay of all three (officer, clerk, peon) and travelling allowance might be put at Rs. 300 per mensem.

Six officers for 3 months with establishment would cost Rs. $300 \times 3 \times 6 =$ Rs. 5,400 for one district.

For an Upper Burma district with multiplicity of crops harvested at different times of the year the cost might be much greater, say, Rs. 10,000.

Oral evidence, the 20th April, 1925.

Chairman.—*Q.*—Could you kindly tell us what your opportunities have been for studying the economic condition of the people of the country ?

A.—I have been a district officer for some years and so in close touch with Land Records work. I am rather out of date so far as settlement is concerned. I did Settlement work from 1913 to 1915 and I have just come back to the Department.

Q.—During settlement operations do you prepare estimates of the cost of living ?

A.—Yes.

Q.—Could you make a rough estimate of the production of the country with the present rough data ?

A.—We profess to do so. Do you mean of the different crops ?

Q.—I mean production of every kind—agriculture, mining, fisheries, and minor industries. We will leave out the major industries—that may be done by experts.

A.—Yes.

Q.—Excluding the major industries—suppose we want an estimate of agricultural products prepared for Burma. What additional information would it be necessary to collect ?

A.—So far as agriculture is concerned we can give you fairly reliable figures.

Q.—Are there reliable figures ?

A.—Well, we produce forecasts of rice, sesamum, cotton and so on.

Q.—And you can easily prepare rough estimates of the minor crops ?

A.—I can show you our tables.

Mr. Kaul.—Q.—We are concerned with the actual crop returns and not so much with the forecasts. Are not the forecasts based on a guess of what is going to happen ?

A.—Yes, checked by the previous year's figures.

Q.—What we want is the actual figure and you say you have it ?

A.—Yes, we have a pretty good estimate.

Chairman.—Q.—Do you check the forecasts with the actuals ?

A.—Yes, they have fluctuated a good deal in recent years.

Q.—How are the actuals taken ?

A.—They are taken from the export figures.

Q.—A lot is consumed in the country ?

A.—Yes. We make allowances for this consumption. That is one of the things we make allowance for in making the forecasts.

Q.—But the bulk is consumed in the country. What percentage roughly goes out, say, for rice ?

A.—I could not tell you. I have never worked these out myself, but I can easily give you a rough figure. I will make a note of that.

Q.—What do you think the actual production is ; how much is consumed in the country ; how much is exported ; what additional staff would you need in order to have a complete estimate of the production every year ? Or suppose you have a periodical census every four or five years ?

A.—So far as agriculture is concerned we do not require a larger staff. It is the duty of the Land Records Department to estimate the crops. As I said in my answer the other day the point is to get better inspection of our work.

Q.—In addition to that, we want pastoral production, say, dairy products of various kinds, fisheries and mines. For all these we want the value of the production for the year. What additional staff would be needed, supposing we take the same information in each area in villages or in towns ?

A.—So far as fisheries are concerned, it would be easy enough to obtain some sort of figures as to what they produce, by making a condition in the fishery leases, that the lessees should keep accounts of their catches, but there is a vast amount of production besides that from leased fisheries carried on by fishermen who take out the net licences.

Q.—Can rough estimates be prepared by the local village accountants ?

A.—The headman would be the man in this case so far as the bulk of statistics is concerned. He might help to make the fishery lessees keep accounts of their catches. That is the only thing, otherwise it would be

necessary to have officials sitting over every little fishery, but I think one could get fairly reliable figures provided they did not start faking their figures.

Q.—That would not go very far. They would be found out.

A.—That would be only in regard to leased fisheries. Rival fishermen can tell fairly well whether the fishery lessees are making a profit or not and would out-bid them at the next year's fishery auction. That is what happens at the present time.

Q.—To get complete statistics of production, what additional staff or organisation would be needed in each district in order to collect complete statistics of the production from year to year ?

A.—I do not think you can do that unless you get investigators. So far as the fisheries are concerned we have an officer called an *Inkunwun* in the most important fishery districts, who looks after the fisheries. A good deal more use could be made of him than at present. He is now more or less simply looking after the revenue, keeping the fishermen up to date in the payment of their instalments. If he has been in a district any length of time he would have a fair idea as to what a fishery could produce. Then again, some of these delta fisheries have fishery inspectors, whose duty is to look around and see that there is no infringement of the Fisheries' Act. They might also help. But there is quite a large number of districts, fairly important from the fishery point of view, which do not have these officers at all. A little enlargement of the staff is necessary to see that the fisheries are properly looked after.

Q.—Of course, you do not value fisheries. Is there no demand for the value of fisheries ?

A.—Yes, we can give you our annual fishery auction figures. The fisheries are put up to auction every year.

Q.—What are the activities which the Development Commissioner is in charge of ?

A.—I cannot give you a complete list. He is in charge of Fisheries, Mining and Agriculture.

Mr. Kaul.—*Q.*—Also industries and canals ?

A.—Yes.

Chairman.—*Q.*—Is his status that of a Financial Commissioner ?

A.—Yes. I say the difficulty about details of the fishery production is that there is a vast amount of fishing done under the net licenses. It would not appear in the statements which you get, but it would be an appreciable amount. I suggest that you could take a Census of markets to find out what proportion comes from the leased fisheries and what from other places. That is the only way and it would give only a rough figure. By making such enquiries you would be able to find out the production.

Q.—It is a country which abounds in rivers, I know, but I suppose the proportion and extent could be ascertained ?

A.—If I can look it up I will tell you. This is a point I mentioned in writing. We can easily give you a rough idea.

Q.—So far as production is concerned, would you, with some additions to the present staff, be able to give us statistics of the agricultural production ?

A.—Yes.

Q.—And forests ?

A.—They are under the Forest Department which has a very thorough organisation. They can tell you.

Q.—Are there some forests under the Revenue Department ?

A.—They all come under the Forest Department.

Q.—In some parts of India they do not. They are managed by the District Officers.

A.—There is nothing of that sort here. All forests are under the Forest Department.

Mr. Kaul.—Q.—Are they published in the annual outturns ?

A.—I think the report gives that.

Q.—The other provinces do not do that ?

A.—I cannot tell you that.

Q.—Supposing we give you the main heads under which we want statistics of production in the final census, can you in a couple of days think it over and favour us with an estimate of the cost ?

A.—It would depend upon the amount of money you wish to spend.

Chairman.—Q.—Supposing it was decided to take a census and it occupied a year ; the census being limited to production only, apart from intensive enquiry, what additional staff would you require in each district ? The present staff would help and it would be supplemented by engaging a few hands for one year or so. We want rough information about the production. After that the variations only are to be noted but it is not necessary to make this census every year. We may have a periodical census once in five years for which it will be necessary for some staff to be maintained. Assume that there will be a Central Statistical Office with branch offices in each district. We want to know what the additional cost would be. Of course, I know the figure would be very rough. You may even send it on to us.

A.—I will see what I can do.

Q.—Is there any special aspect of economic life in Burma which especially requires investigation ?

A.—I do not know if there is. The chief production is from agriculture. Our settlement officers go into that fairly thoroughly.

Q.—Do you think that statistics of the income per head and of wealth are necessary for this province ?

A.—It is difficult to get figures.

Q.—But such figures are obtained in other countries. Of course, it will be costly, but do you think it would be desirable to have a census of income and wealth along with the census of production ?

A.—I do not think it would be of much value, though on general lines it may be desirable. Settlement officers find it very difficult to get at any true figures of indebtedness. The cultivator finds that if a man comes and says " I have no debts ", he is allowed to go in two minutes ; the others take the tip from him and do the same thing.

Mr. Kaul.—*Q.*—We are not concerned with forecasts, but with the crop reports of each harvest. These reports are prepared by the surveyors. Do they not send in statements of the area under crop for each harvest to the *tahsildar* ?

A.—In Burma they are called Township officers.

Q.—You have been preparing some estimates as to production. Where were these prepared ? In the Township offices ? If not, where ?

A.—These figures would not go to the Township offices. It is purely a Land Records matter. The surveyor prepares his register yearly showing the area matured under each kind of crop.

Q.—To whom does he submit the report ?

A.—To the Inspector above him. Over the Inspector is a Superintendent of Land Records. He is a Provincial Service man.

Q.—He is completely outside the Collector's control ?

A.—No, he is under the Collector.

Q.—Then does the Surveyor submit his report to the Circle Inspector ?

A.—The Surveyor sends it to the Inspector of Land Records, who sends it to the Superintendent of Land Records. So far as the district is concerned the estimates are worked out on that.

Q.—Then these figures are reported to the Director of Land Records for compiling his report ?

A.—Yes.

Q.—In these estimates which you prepare, are the outturn valuations worked out at the original headquarters or the district headquarters ?

A.—First by the Surveyor and then at the District headquarters.

Q.—So that the Deputy Commissioner or his assistants work out the production for every village area, but do they not work it out for the whole district together ?

A.—All these estimates are sent up by the Surveyors.

Q.—For the purpose of assessment is it not necessary to value the crops ?

A.—If the crop fails there is no assessment.

Q.—For the purposes of assessment all one has to know is how much the area is on which the crop matures on each man's holding.

A.—Yes, but it differs in Upper and Lower Burma. In Upper Burma, if no crop matures you pay nothing. In Lower Burma you pay on the whole area cultivated.

Q.—Then the same system of assessment is applied to the whole area and provided there is a mature crop, it will be the total area or the partial area. For this purpose is it not necessary to convert the area in each holding into the total value ?

A.—No.

Q.—You say that you have been preparing some estimates for other purposes but I want to know where these estimates were actually prepared and whether these figures were converted into value ?

A.—In the Land Records office, which is a branch of the Deputy Commissioner's office. Every Deputy Commissioner has under him the Land Records Department officers and they compile these figures and send them in, district by district, with the annual returns.

Q.—Does the Land Records Department prepare the conversion into value for the total figures of the district, or village by village ?

A.—We do not value the crops.

Q.—You say that you have prepared estimates.

A.—I mean the monetary value.

Q.—Do you prepare estimates of outturn ?

A.—Yes, but we do not convert them into money.

Q.—If we wanted to convert into money the yield of the crops in every village, would that throw any additional work on the present staff ?

A.—It would.

Q.—Suppose the Surveyor had to prepare it village by village, would he have enough time ?

A.—He would require some assistance.

Q.—What sort of assistance would he want for this and the other miscellaneous data that the Chairman has pointed out ?

A.—I should think one extra man for each Revenue Surveyor.

Q.—They have only to take the register of figures. Would there be enough work for so many men ?

A.—Yes, just for a short period.

Q.—Supposing they had an extra man in every Inspector's circle, would that do ?

A.—Probably it would do. It is difficult to say.

Q.—Of course, it is a mere guess.

A.—Quite so.

Q.—Are there no kinds of forests in the villages ?

A.—No, there are either reserved forests or public forest lands.

Q.—What is public forest land ?

A.—All waste land that is not reserved and which has not been under cultivation.

Q.—In other provinces we have reserved forests, productive forests and unclassified forests in which people have certain rights. Unclassified forests are generally divided into two parts—(1) under the Forest Department, and (2) under the district authorities ; they are called district forests.

A.—The district officers here have nothing to do with the forests at all, except in so far as they are interested in the general administration of the district.

Q.—Are any large waste areas attached to the villages ?

A.—The only such areas of waste we have are grazing grounds. They are quite large in some places.

Q.—Are there any with a considerable number of trees ?

A.—Some of them are very much covered with some kinds of trees which are used by the villagers for fuel purposes.

Q.—Do they sell any of the timber in them ?

A.—There is not much wood in them. They are merely scrub jungle.

Q.—Of no value ?

A.—No.

Q.—Not worth ascertaining the production of ?

A.—No. It is merely used for local firewood.

Prof. Burnett-Hurst.—Q.—With reference to your answer to question No. 6 ; you deal with the machinery for crop reporting and you say, “ The machinery for crop reporting in this province is sufficient. Steps are being taken to remedy the chief defect in the system by introducing a more efficient class of Inspectors who supervise the work of the revenue surveyors ”.

A.—At present the Inspector is an *ex-Surveyor* who has been promoted in the latter years of his life and he is sometimes physically beyond the work. We want to bring people in in the beginning of their service as Inspectors and so introduce a better class of Inspectors. The inspection work is admittedly poor. Under our system if we could have a better check of the Revenue Surveyor's work our returns would be more accurate and there would be less corruption, especially in Upper Burma. There is a good bit of corruption with loss of revenue. If in Upper Burma no crop matures no revenue is assessed. Our scheme is to find a better class of Inspectors.

Q.—So that the returns are inaccurate, partly owing to the existence of this corruption ?

A.—Yes.

Q.—Is there no settlement in Upper Burma ? You said that if the crop did not mature the cultivator need not pay any revenue.

A.—You only pay on matured crops in Upper Burma. If the crop fails no one pays. He does not get assessed.

Q.—Is there an assessment from year to year ?

A.—Yes, it is an annual assessment.

Q.—By what percentage are the present returns out, in your opinion ? Are they 25 per cent out ?

A.—I should say it is roughly that on the whole.

Q.—Will the introduction of a more efficient staff of Inspectors, raise the cost materially ?

A.—Yes, we have raised the pay of the Revenue Surveyors as well.

Q.—What do you pay them ?

A.—They start at Rs. 35 and go up to Rs. 70.

Q.—Do you think you could obtain reliable statistical returns from an agency which is paid only Rs. 35 ?

A.—That is just it.

Q.—Is it not absolutely essential, if you want to obtain accurate data, that you should have a better paid staff ?

A.—Yes.

Q.—You do not think it worthwhile incurring expenditure for getting information about the minor crops ?

A.—No. You will see from our returns that they cover a great deal.

Q.—There are a good many items which happen to be omitted. You have no returns for *bajra* and *ragi*.

A.—We do not grow them here.

Q.—Is there any hemp or opium grown ?

A.—No. Hemp and opium are prohibited under the Excise and Opium Acts.

Q.—You have the yields only given for rice, wheat, *til*, *jowar*, and a few others like cotton, beans, etc.

A.—It is all done under the same system. We can give you the figures for the areas under these various crops.

Q.—Are not the yields which are based on crop-cutting experiments grossly unreliable ?

A.—Well, they fluctuate, like everything else in agriculture.

Q.—The agricultural returns of Upper and Lower Burma and of the rest of India are not comparable with the returns which are obtained from European countries. In the latter there is an educated class of cultivators who make returns and fill up the schedules supplied, whereas in India one has to employ an agency.

A.—Yes, we take the area matured and multiply it by the estimated yield per acre of the crop.

Q.—The result is an estimate which is not exactly accurate.

A.—Yes. You can see this by the way in which the estimates have been out.

Mr. Kaul.—Q.—Do you mean the difference between the estimates and the actuals ?

A.—Yes.

Prof. Burnett-Hurst.—Q.—Is it an estimate or a guess ?

A.—Whether it is approximately correct or not depends upon how much is the fixed figure of produce per acre.

Q.—A suggestion has been made that in order to ascertain the production of minor crops, fruit, fish, etc., intensive studies of typical villages should be made. Districts should be divided into economic tracts, and within these tracts certain typical villages should be selected at random and information should be gathered by a trained staff. Do you approve of that method ?

A.—That is the only method by which you can get any reliable information.

Q.—Would you have a thoroughly well-trained and well-paid staff to obtain accurate figures rather than rely upon a large number of illiterate and ill-paid men who might secure figures which are not reliable ?

A.—I do not know from where you are going to get a well-trained staff in Burma.

Q.—Do you think that it would be difficult to get a well-trained staff in Burma ?

A.—The ordinary Burman takes a lot of training.

Q.—Would you suggest graduates in economics from your universities ?

A.—You will not get them to rough it in the jungles. They like their home comforts.

Q.—Do you not think that the educated Burman will do it ?

A.—They are not attracted to the forests. The forest people find it very difficult to get them.

Q.—What agencies would you suggest ?

A.—This is the only agency that you can get. They are very casual persons. You want absolutely reliable persons.

Q.—To obtain reliable data must you have a trained agency ?

A.—Yes.

Q.—You cannot rely upon anybody and everybody. Is your present staff not well qualified ?

A.—Yes.

Q.—The Revenue Surveyor has to pass an examination in Revenue Law and Surveying, and does that not indicate a certain amount of intelligence ?

A.—Yes.

Q.—In your reply to question No. 10 dealing with the statistics for meat and skins you made a suggestion that it should be made obligatory on slaughter houses to furnish this information. I presume this applies to rural as well as urban areas.

A.—I believe there is a certain amount of slaughter which would come outside that. Under the Village Act no slaughter may take place within five miles of where a slaughter house is established but there are slaughter houses only at particular centres in certain large villages. The amount of slaughter that goes on outside that area is very inconsiderable, because if there had been a lot of slaughter in or near any spot the district officers would have established a slaughter house there.

Q.—Does meat figure very considerably in the diet of the average Burman ?

A.—No. The average Burman is more of a fish eater.

Q.—Then in regard to question 20 dealing with fisheries, can you tell me what proportion of fish caught is converted into fish paste or *Ngapi* ?

A.—I could not say, it is always the small fish that is used for making fish paste.

Q.—You have suggested that it might be possible to obtain the quantity of fish caught. Could you also obtain the figures of value ?

A.—Yes.

Q.—Do you mean of the big fisheries ?

A.—Yes, under their contract it might be made obligatory for the lessees to give the required information.

Q.—Do you think that these people would rather understate than overstate the facts ?

A.—Undoubtedly they would understate, because they would have their eye on the next year's auctions.

Q.—In answer to question No. 73, you say that a detailed enquiry from every individual in respect of all forms of private wealth is impossible. I understand from your reply to the Chairman that you think it desirable. Is that correct ?

A.—I do not see how you are going to get it. It would be very nice if you could get it, but you cannot.

Q.—If you go to the middle class families are you less likely to get it ?

A.—Yes, I should not place much reliance on it.

Q.—If you went to a *Chetti* ?

A.—Of course, you could get his books.

Q.—Is it not common knowledge that a *Chetti* keeps more than one set of books ?

A.—Yes.

Q.—There are three sets of books : one for income-tax collectors, one for himself, and one for his creditors ?

A.—Yes. The trouble in Burma is that there are some people who have big business concerns but who keep no accounts at all. The money comes in and is paid out without any entry being made anywhere. They give the income-tax officers all sorts of returns, so much received and so much spent—they do not keep any detailed accounts at all. They have no idea of keeping business accounts. As an income-tax officer, I found it impossible to get any reliable information.

Q.—I suppose in Burma as in other provinces there is a considerable evasion of the income-tax ?

A.—Yes, the difficulty, speaking from an income-tax officer's point of view, is to know whether you are making a fair assessment. It is very difficult to know when you are making the assessment what will be fair both to the assessee and to Government. The man keeps no accounts of any sort and it is more a guess than anything else what his income is. If you put up his assessment and he does not appeal you go on putting it up in succeeding years until he realises that it pays to keep accounts.

Q.—That is to say, your income-tax figures are valueless for statistical purposes ?

A.—Yes. I would not place the slightest reliance on the income-tax figures. The income-tax officer tries his best. He has on the one side to get what he ought out of the assessee and on the other hand not to take advantage of his ignorance.

Chairman.—*Q.*—With regard to the income of the cultivating class, do you think that if intensive studies were made in the villages, you would be able to get accurate information ?

A.—I think our Settlement officers' enquiries give pretty accurate returns.

Q.—Do you think that they are more accurate ?

A.—They become more and more accurate as they leave out what they think is not reliable.

Q.—Is it not given for individual families ?

A.—My only criticism is the way in which they work up their averages. There is not enough information given by the way in which these things are done.

Prof. Burnett-Hurst.—*Q.*—Does it not point to the fact that even though you might employ educated persons to collect information, unless those men are trained in statistical methods the returns that they give you may not be of much value ?

A.—I quite agree with you.

Q.—That is to say, you must have a well-trained agency and you would approve of such agencies collecting the facts as accurately as possible by means of intensive studies in typical or selected villages.

A.—Yes.

Q.—And you would leave the analysis of that to a skilled statistical staff ?

A.—Yes.

Q.—I want to emphasise this point. The mere distribution of schedules to persons, however educated they may be, who are not trained in statistical matters, may lead to data being compiled which is of no statistical value.

A.—It may be more misleading. I am in favour of the raw materials being worked up by people who understand how to deal with them.

Q.—Are you against investigations into indebtedness on the ground that the settlement officers have reported that you cannot get accurate information ?

A.—Yes.

Q.—Why is that ? It is claimed that in other Provinces of British India such information is obtainable with a considerable degree of accuracy.

A.—The officers who collect the information are very sympathetic officers who spare no pains to arrive at the truth but the trouble lies with the people they have to examine. One man comes up and admits his debts and gets examined for half an hour. The next man says, " I have no debts " and he gets off at once. The third person gets the tip that if he admits his debts he will have a few hours' cross-examination, so the result is that many of them deny that they have any debts.

Chairman.—*Q.*—Could not that be ascertained with the assistance of the local agencies ? If you interested the headman of the locality, would he not tell you what persons are in debt and what persons are not ?

A.—He might be able to give you a certain amount of information

Q.—If there was co-operation between the official and non-official agencies in the villages, do you think that you would be able to get information about indebtedness fairly accurately ?

A.—It is so difficult to interest them. The people who have been examined previously by the Settlement officer on the question of cost of cultivation are examined on the question of indebtedness. The people who would give fairly intelligent answers are usually chosen.

Q.—Are there no registers of debts kept by members of the Co-operative Society ?

A.—I cannot say anything about Co-operative Societies.

Mr. C. W. DUNN, C.I.E., I.C.S., Officer on Special Duty, Government of Burma.

Written Statement.

The questionnaire was sent to me only a few days ago. I have not been able to obtain the resolutions of the Imperial Statistical Conference referred to in question 4 which might throw some light on the general intention of the questions : and some other important references are not available—*e.g.*, the system applied in preparing the Bombay Cost of Living Index, the method of the income census in Australia in 1914-15.

PRODUCTION.

Questions 7 & 8.—I think that no one with any experience or understanding of the difficulties of making statistics of quantity of agricultural produce approximately correct would propose to attempt to make annual statistics (if that is what is meant) of quantity of crops of minor importance.

Question 9.—I have not any figures of the quinquennial census of cattle, etc. It was not the first attempt to obtain statistics of live-stock—draught oxen, etc., had been reported periodically before. My recollection is that the statistics were obviously inaccurate for Districts in Burma. By means of time and attention from highly paid officials—an unjustifiable expense—the returns might be improved—in the course of time. They could be criticised in the light of returns of cattle imported and exported by railway, river and across land frontiers where trade is registered (Shan States frontier), and of cattle death returns and otherwise and errors could in time be checked and accuracy be improved.

Question 10. (a) & (b).—Imports of dried meat from India could, I suppose, be reported if required by the Customs staff : also export of skins by sea. There is, so far as I know, scarcely any internal consumption of skins : except for making the rings which hold the yoke to the shaft of bullock carts.

Statistics of beef and pork might be obtained from slaughter houses in towns. I think it is impracticable to obtain statistics of beef and pork produced and consumed outside the towns.

(c) Wool.—I believe the Prisons Department uses all or most of the wool produced in Burma—or did so before the recent increase of sheep. Statistics of wool exported by sea could no doubt be obtained by the Customs staff if it were of any importance.

(d) & (e). Statistics of exports by sea could be got. I think that these products in Burma are generally buried or left to rot.

Question 11.—None that I am aware of in Burma.

Question 12.—*(a) to (h)* are of little or no importance in Burma. For the other products “accurate and comprehensive” statistics could not be obtained. I think, in Burma.

Question 13.—None in Burma.

FISHERIES.

Questions 18, 19, 20 and 21.—I do not agree because in Burma it is not practicable to obtain complete statistics of the production of fisheries.

As regards subsidiary industries, salt is not yet, so far as I know, issued free of duty for the *ngapi* industry and that means of ascertaining the production of *ngapi* is not available.

INDUSTRIAL.—LARGE-SCALE INDUSTRIES.

Question 27.—It might be possible to obtain for statistical purposes returns of production of rice from rice mills : and this would, if reasonably accurate, be of some practical use.

Also returns of production might perhaps be got from saw-mills :—if the Forest Department have not that information already.

There are other industries in Appendix F () in respect of which it might be possible to obtain returns of production and to compile statistics if it were expedient. But unless some continuous practical use is made of the statistics obtained, the more numerous the industries dealt with the more untrustworthy the statistics are likely to be.

Question 29.—I would not make it compulsory to supply returns or inflict penalties on manufacturers merely for the sake of satisfying curiosity.

Question 30.—No.

Question 32.—What is the Imperial statistical organisation ? I suppose it will know very little about Burma. If statistics are collected they should be for practical purposes (otherwise they will be untrustworthy) and if possible by the people who make use of them or under their guidance.

COTTAGE INDUSTRIES.

Question 37.—No. 5 (*vii*) classes lacquer work with wood-turning. Lacquer work in Burma is chiefly on woven bamboo and horsehair, and this has no connection with wood-turning. The lacquer (or painting) on wood produced in India (in Bombay Presidency I think) is a different industry.

Ngapi (fish paste) and *ngun-bya-ye* (sauce) making is an important industry omitted from Appendix II. Also there are many other minor industries which I cannot readily place in under the heads named in Appendix H.

Alabaster images of Gautama.

Brass images of Gautama.

Inlaid swords, etc.

Bronze figures.

Wooden shoes.

Rice-hand mills (bamboo and concrete).

Mother of pearl ornaments, etc.

Burmese umbrellas.

Burmese saddlery.

Hats (bamboo sheaths, or woven bamboo varnished).

Tattooing.

Writing on palm leaves.

Washing goldsmiths' dust.

Paper decorations (for funerals and festivals).

Fish rearing.

Question 38.—It is not practicable. The "Cottage" industries named in the list in Appendix II include in many cases an unmanageable variety. This appears to be illustrated by the foot-notes on the silk embroidery industry of Benares and Surat, and the gold and silver and allied industries—and the varieties mentioned in the case of these two items are probably only the varieties found in one or two Provinces of India. To produce statistics upon which any generalisation (such as would be made in a census of production) could be founded, principles and methods of the enquiries must be settled: and that would be work for a great number of directing experts possessing experience, which has yet to be created. At the same time the work of recording information would require patient and intelligent investigations by men capable of interpreting general instructions. These also would require special experience which has yet to be created. If the Committee has any doubt of the impracticability of a census of production extending to all "cottage (*i.e.*, other than 'factory') industries, let them experiment with a single industry—such as the Burmese lacquer industry the circumstances of which are, I think, more favourable than those of many other 'cottage' industries—in respect of local concentration and of the probable amenability of the people concerned to investigations. It will be found that each head of the enquiries will need a code of instructions. There are no officials in Burma who could be employed to record the information without special instruction and training.

Has the Committee considered the tendency of people subjected to investigations with which they are not in sympathy to "sabotage" enquiry? Most Settlement Officers are, I think, aware of the effect on their enquiries about expenses of living, cost of cultivation, etc., of the boredom of questioner and questioned: and in the case of Settlement enquiries the questioned have some conception of what the enquiries are aimed at. If a general census of "cottage" industries were attempted in Burma, I think there is reason to fear on the part of the people subjected to the investigation, which might be much more aggressive than unintelligent or deliberately misleading answers to questions. How is it proposed to prevent or allay suspicions as to the intentions of the census of production?

WAGES.

Question 40.—I have not the quinquennial Wage Census or "Prices and Wages in India" at hand. The statistics of agriculture I have met with were I think unsatisfactory in respect of (b), (c) and (d).

Question 42.—The two classifications given do not provide for the difference between permanent farm lands, contract gang labour, piece-work labour, men, women and children, and co-partnership labour. Generalisations may be vitiated by ignoring or including the partial remuneration of mutual labour of cultivators' families. Classifications made in India are difficult to apply to local conditions in Burma. It would I think take years of work by a specialised Department to evolve a satisfactory classification in Burma alone. The head "others" in the Datta Report classi-

fication is no doubt comprehensive : but it would be overloaded and must include labour of widely varying quality and remuneration—*e.g.*, “overseers” of paddy farms, men employed to clear jungle for such crop as they can raise in the year, labour for lifting groundnuts, boys or men employed to feed and tend plough cattle, water lifters for cultivation of paddy, betel wines and onions.

Unless I have overlooked it there is no provision here (nor under Production) for carters of agricultural produce, boatmen (Indian and Burmese) raftmen. The wages or remuneration of village headmen and revenue surveyors, chairmen and other Government employees, market overseers (*ze-gaungs*), durwans, sweepers, Municipal employees, schoolmasters, monks. Transport and Trade under Head B in Appendix G, and wage earners under C and D are not provided for under Wages, nor fishing labour (under A).

Question 43.—How can an estimate of the economic condition of agricultural (or of any other) labourers be made without taking into account the periods of unemployment and the varying seasonal earnings ? (See recent Article in *New Statesman* on real wages in England).

Question 44.—Remuneration of some of the most important kinds of agricultural labour in Burma is fixed in produce at harvest. The rates at which this remuneration in kind is converted into cash advances will be a most troublesome complication of statistics. The rates tend now to vary from year to year and from one locality to another. I do not think it would be possible to fix standards. It would be necessary to distinguish local labourers who consume their paddy wages in advance from immigrant labourers who (living apart from their families during the working season) receive the remuneration at harvest. There are variations : part payment in cash and part in kind.

Question 46.—The work varies in deep planting and shallow planting in unirrigated paddy cultivation and I believe wages vary likewise.

Question 47.—See Settlement reports. The local variations are I think unmanageable and all the experience of the Settlement Department cannot produce statistics that would be safe to use apart from the Settlement Officers' immediate purpose (cash outgoings of the cultivator).

Question 49.—This seems to be essential for a general estimate of the economic condition of “the various classes of the people”.

Question 50.—In Burma it would not be Kharif and Rabi : but cultivation season and harvest season in the case of paddy.

GENERAL.

Question 51.—Not practicable.

As regards the organisation of labour in important parts of Lower Burma, I submit a pamphlet called *Industrial Agriculture* which explains the division of labour. It is probably different from anything in Indian agriculture.

Generally it seems to me that conditions in Burma are less favourable for making general statistics of wages than in England : because the general education of the officials and of the people is less advanced, because in England, I think, statistics have practical objects in view, and because statistics come under the practical criticism of organised employers

and wage-earners and of competent newspapers and journals and are scrutinised by numerous experts representing many points of view. It would be better, I think, to use what resources we have for such work in improving if possible statistics of limited scope, which will have immediate practical effect, such as in improving revenue assessments or in dealing with wages disputes, (where statistics are expected to be of use for that purpose), than to attempt a complete census of wages.

INDEBTEDNESS.

Question 83.—See H. Clayton's Report on Indebtedness in the Irrawaddy Delta. It is now out of date. This enquiry was a very costly undertaking. The expense was justified by the immediate practical object of agrarian legislation in a tract where conditions were more or less homogeneous. It required the whole-time work of one of the ablest officials in the Province for two years. It helped to prevent the legislation contemplated. But it has been of very little other use. The information about debts obtained by co-operative societies is directed only to the purposes of the societies. In Burma "*haisiyats*" credit societies do not rely upon *haisiyats* in the same way as in India: and they are probably not safe to use as complete records of indebtedness of members.

Questions 84, 85 and 86.—I think it is not practicable to obtain satisfactory returns of the indebtedness of individuals, families or households, nor under the heads mentioned in question 85. The amount of borrowed capital used and the prevailing rates of interest on certain kinds of security may have a practical application in a Settlement Officers' enquiries: and for that purpose it would be an advantage if professional money-lenders were required to supply returns of the annual amount of their loans on several kinds of security—and their rates of interest. These would no doubt receive scrutiny (which all statistics require) from the Settlement Officers and other officers concerned with agricultural conditions.

Oral evidence, the 21st April 1925.

Chairman.—Q.—Will you kindly tell us what opportunities you have had of considering the economic condition of the people of Burma?

A.—I have been through various employments as an Indian Civilian. I have been on Revenue Settlement duty and I have been employed on colonisation work. I have also been employed since 1911 in the Co-operative Societies Department and then for the last year I have been employed in examining the finances of the District Councils.

Mr. Kaul.—Q.—By District Councils, you mean what we in India know as District Boards?

A.—Yes.

Chairman.—Q.—Supposing an economic enquiry is started in Burma do you think that the District Councils or individual towns would finance such a measure? You will agree that a knowledge of the economic condition of the people is valuable to towns, cities, and villages?

A.—I do not think that at present you could expect them to find the means for undertaking the work.

Q.—In some countries they measure the production in the villages and keep statistics of the production of rice, wheat and other crops from year to year ? That gives them the knowledge as to whether they are progressing or going back ?

A.—If those statistics represent the real facts.

Q.—Why should they not represent the real facts ?

A.—Because in most Governments they would not.

Q.—But if the people were enthusiastic ?

A.—I do not think there is any demand at present that I know of at all for that kind of knowledge. There is a certain demand for elementary education ; and that demand is the motive we have got at present to induce the local authorities to be willing to impose and their constituents to pay extra taxes. They have a demand but it is for elementary education, and not for Economic statistics. That is my information.

Mr. Kaul.—Q.—Sometime ago there was no demand for general education either ?

A.—Burma is more advanced than India in that respect. They have made their village monks in past times teach their children. So that their demand is of long standing, and the village school for general education is a pretty old institution.

Q.—Is it not a fact that Burma is very backward in modern education and that you find very few graduates here ?

A.—Yes, we have started late.

Q.—There was no demand some time ago but the demand is growing now ?

A.—The demand for the Western kind of University education is only of late but there has been in the past the teaching of the people by the great monasteries which were a sort of embryo university where monks were trained and went out all over the country teaching in schools.

Q.—We are talking of Western education which is the standard at present, material education. The demand for that is of recent growth and it is growing now ?

A.—Yes.

Q.—There was a time when there was no demand for it ?

A.—Yes.

Q.—Do you not think that some demand for economic information might grow ?

A.—I hope it will not grow for a long time, if it is going to be a demand for expenditure by the State for the collection of materials for economic science.

Chairman.—Q.—That is a matter of opinion ?

A.—Yes, I hold that very strongly. I think that economic science is an abstract science and it is quite distinct from the business of the taxation of the people.

Q.—It is economic science which leads to practical results ?

A.—No. Economic science, if I may give my own private opinion, is rather comparable with metaphysics. It is invaluable for killing superstition. Economic science is very good for killing wrong beliefs.

'Q.—That was the idea but they are making it a practical science.

A.—I am only an amateur in economics but it seems to me that the best economists do not pretend that economic science is a guide to practical problems.

Prof. Burnett-Hurst.—Q.—When you speak of the best economists, to whom do you refer ?

A.—To the late Professor Marshall for instance. I have a monograph of his, brought out at the time of Mr. Chamberlain's campaign for Imperial Preference. Marshall's pamphlet was published by Mr. Asquith, and although at the time he dealt with the problem, it was written by Marshall some time before Chamberlain's campaign began. He dealt with the question whether a protective tariff would benefit Great Britain or not. His answer to that question is given in that Monograph. I suppose Marshall is accepted as one of the chief economists. His conclusion is that economists may possibly be able to trace out a single tax and the shifting of its burden and find out who pays it in the long run, but to do the same for a whole tariff was beyond the united powers of all the economists ; and so he answers the question on ethical and not on economic grounds. The inference seems to be that you cannot base taxation in any country on economic science, but you must base it on moral grounds, that is to say, generally speaking, it is a question of the will of the people.

Q.—We are not concerned with taxation alone. Our terms of reference require us to examine the data available for framing an estimate of the economic condition of the different classes of people in India. Have you read Marshall's Principles of Economics ?

A.—I have not read it from cover to cover but I have the book.

Q.—You will probably remember that one of his opening statements is that economics deals with man in his everyday life ?

A.—That is where Marshall corrected some of the other economists. Everyone knows that the criticism of earlier English economists was that they created a fictitious "economic man". Marshall and other modern economists import politics, and deal with political economy.

Q.—Is it not essential, if economics deals with man in his everyday life, that an effort should be made to ascertain what that economic life is ?

A.—Let men of science alone study it as hard as they can.

Q.—Why men of science alone. All economists of the present day based their theories on practical observations. The economists' laboratory is the world.

A.—All men of science ought to do so. Let them do it by all means.

Q.—Is it not essential that you should get this information ?

A.—It is not essential that economic science should be promoted at the expense of the State.

Q.—It is essential to get accurate information as to the welfare of the people. Are you opposed to getting information regarding the welfare of the people ?

A.—No. It is beneficial like the study of metaphysics.

Q.—May I put this question to you. A doctor when he is diagnosing a patient will examine him before he prescribes the medicine or tonic or whatever it may be. How can you diagnose the conditions, the maladies of a state or province, without first of all making an investigation to ascertain the exact condition of the people ?

A.—As regards the needs of the state at present, the Doctor who is concerned to diagnose is the politician in charge, and what he has to diagnose, it seems to me, is the will of the taxpayers, and statistics as to wealth will give little guidance. If you are enquiring into the present rate of wages, that is another matter, but when you are dealing with taxation.....

Q.—We are not dealing with taxation. We are concerned with the question of ascertaining accurate facts relating to the economic life of the people. Are you opposed to that information being obtained ?

A.—In the sense in which this questionnaire is framed it seems to me to imply a comprehensive, discursive and very expensive compilation of statistics for academic purposes.

Q.—I must strongly repudiate that. There is no suggestion at all that an enquiry of that nature—expensive, comprehensive and academic—should be carried out. The questionnaire is merely framed with the idea of ascertaining the views of witnesses as to the possibility and advisability of an economic survey. We are in the position of a judicial committee and having heard the witnesses, it will then be for us to arrive at a decision as to whether such an enquiry is feasible or not, whether it will be too costly, whether it will be of any value. I do not think anyone can on an inspection of the questionnaire draw the conclusion that the Committee have a set scheme in mind. They have naturally to put certain leading questions with a view to ascertaining what witnesses think ?

A.—From the comprehensiveness of the questionnaire I inferred that what was contemplated was something complete and comprehensive. You ask if any small industry is left out and so on. It is comprehensive and it is discursive, and as far as I can tell it seems to be academic. You do not indicate who is going to make practical use of the statistics. That is the main point—its practical use.

Q.—What is your idea ? Is it that no information relating to the economic welfare of the people should be obtained ?

A.—By no means.

Q.—What information do you suggest should be obtained ?

A.—I said in my written replies in general terms that I think we should confine ourselves to improving the statistics that are at present used regularly.

Q.—What statistics ?

A.—Those which were required for the ordinary functions of the Government or any important part of the community.

Q.—What statistics ?

A.—For instance, statistics of wages in limited areas and occupations might be of practical use.

Q.—What existing statistics ?

A.—The statistics of wages which are compiled in Bombay I understand, but I would only collect statistics of wages for the direct object of enabling Government authorities to deal with organised labour and organised employers and to deal with wages disputes. I would not have anything outside that.

Q.—You were referring to existing statistics. I want you to state what these are, confining your answer to Burma, and say what existing statistics there are ?

A.—For instance when we had trouble over the Burma Railways, the Government used such wages statements as they could get from the Burma Railway Company.

Q.—They were not public reports ?

A.—No.

Q.—That information was not accessible to the public ?

A.—The Government could get it.

Q.—It was not accessible to the public and was not published. Do you think that the public should have had that information ?

A.—I am not a specialist on that subject. You had Mr. Marshall up yesterday and he has been studying it. He would advise Government as to labour that is pretty well organised, and if you produced statistics of wages and so on, they may be able to be made use of. Then, through use and criticism your statistics will have some chance of being correct.

Q.—So far as the railway wage statistics are concerned, you recommend their publication ?

A.—Yes, their collection.

Q.—And their publication ?

A.—I am not prepared to say what statistics should be published. I have not specialised on it or studied it. When the Government employs Mr. Marshall as a specialist labour officer, he will be sufficiently well informed on the subject of control and collection of these statistics and statistics of this kind, subjected to the criticism of employers and employees as well as of statisticians, will become real statistics.

Q.—Would you regard him as a specialist ?

A.—More of a specialist than I am.

Q.—Would you not recommend, if you were going to get accurate facts, that you should have a well trained statistician to collect them ?

A.—I do not think that a trained statistician would be an expert for collecting all kinds of statistics. I do not think that view would be held in England.

Q.—Not all kinds of statistics, but each man will make himself a specialist in a particular branch ?

A.—If you are going to have anything so comprehensive you will have to get an army of highly trained experts. I think we ought to do what

the Government of Burma is going to do and put on a man of ability like Mr. Marshall.

Q.—He is a civilian without any experience of statistical matters.

A.—Well, he has been studying the Labour Office in Bombay.

Q.—Does that make him a statistician ?

A.—I do not know what his record is in Government service, whether he has been on Revenue Settlement duty or not. A Settlement Officer is, so far as we can use the term, an expert in statistics—the best kind of expert we have got here.

Q.—How would you define a statistician ?

A.—I think we probably look at it in different aspects. For instance in accountancy, you will find that a practical man trained in a bank or business will make himself a better set of books than one who has been through a course of accountancy classes. In the same way a practical statistician must have expert knowledge of the business and that is essential for compiling statistics. I think an academic statistician is not necessarily a satisfactory expert, for instance, with regard to wages and labour.

Q.—Would you regard Professor Bowley, who is a recognised authority on statistics in England, of doubtful value as compared with the above mentioned persons in India ?

A.—I think Professor Bowley was put to making statistics for the Board of Trade. If they took him off work like the Board of Trade work and put him on to something that he had not been dealing with, he would have to acquire special knowledge of his new subject. I think he is an expert statistician. He will criticise statistical methods just as an accountancy expert will criticise the methods of the practical man of business.

Q.—Are there not any other statisticians of that kind ?

A.—England is rich in them.

Q.—And India ?

A.—I do not think India has an educated public or organised interests to keep statistics in a healthy condition so to speak.

Q.—I disagree.

A.—Well, I think you know a great deal more than I do.

Chairman.—*Q.*—There has been a digression. We will resume the thread of our discussion. Our object is to prepare a programme or scheme of economic survey for Burma and to collect such statistics as may be of value to give an indication of the economic conditions of the people. What statistics would, in your opinion, give a correct idea of the economic conditions here. For instance, there is the question of production. I do not know whether you regard the collection of statistics of income and wealth possible ?

A.—I think it is hardly possible.

Q.—Why not ?

A.—Not in any comprehensive way.

Q.—You would object to it on the score of cost ?

A.—Yes, and also on the score of lack of criticism and handling. It is only handling that makes statistics sound. I think Professor Burnett-Hurst will know more about it than I do. Even Professor Bowley gets very severely handled and listens to critics. Even Professor Bowley did not rise armed *cap-à-pied*. He has been made by informed public opinion in England.

Q.—Many economists and statisticians here will do that sort of work one day ?

A.—We shall get that later when education advances. I do not know India well.

Q.—Would you have the Government itself collect the statistics and make sure that the statistics are correct ?

A.—I am sure they could not.

Q.—Are not economic statistics considered to be a guide to the development of a country and do not the Dominions consider that they give an idea of the trend of development ? Why otherwise should they spend millions of dollars in the United States on such work ?

A.—That is a thing on which I am not well informed.

Q.—Statistics are collected in Europe, America and the Dominions and all countries attach great weight to them. These are used as a guide to future development.

A.—To what extent are economic statistics really used by Government authorities in improving the condition of the people ?

Q.—The Statistical Department is treated as the adviser ?

A.—To what extent ?

Q.—It deals with large bodies, large masses of figures. That is the only way to get an indication of the policy to be followed by modern governments ?

A.—It seems to me that politicians always base their action on considerations that are moral or rather psychological. The statistical conditions of the country are not really so important as the will of the people.

Q.—Growth and progress must be controlled in the light of facts collected. It is the government which has to develop education and carry on propaganda ?

A.—The government can help, but I hope that the politicians will do it too.

Q.—It is very unfortunate that politicians do not do it ?

A.—In Burma, there is something of the kind. The Burman nationalists have done something to create interest in education.

Q.—I am afraid we are again digressing. Coming to statistics of production, to what extent are they necessary, to what extent are they required so far as the production is concerned under agriculture, minerals, forests, fisheries, and so on, and also for large industries and cottage industries. So far as production is concerned, in all these what statistics are satisfactory and what are deficient ?

Prof. Burnett-Hurst.—*Q.*—May I interrupt ? The witness rather takes the view that statistics are useless ?

A.—No, I do not. I never said that statistics compiled by the Settlement officers are useless. Their Reports are based on very carefully compiled statistics which are subject to well informed criticism and are compared with the reports of the later settlement officers. They have a critical public and they have a direct use. I think statistics like that are essential ; every civilised country must have them.

Chairman.—*Q.*—You have heard that the production per head of population, income per head, wealth per head, are commonly used ?

A.—They are in England, but doctors differ.

Q.—Generally your government also accepts the figures, and is guided by them in most practical matters ?

A.—I should say that the government is not guided by such figures. I think it is guided by the will of the people. Mr. Lloyd George had the figures but he went upon the will of the people. The politician is bound to do that in a democratic country.

Q.—You do not induce the public to correct their views ?

A.—I think a man who leads the people will not keep a hold on them for long if he misleads them.

Q.—Well, anyhow, are you in favour of collecting statistics of production in this country ?

A.—Yes, for work.

Q.—For what kind of work ?

A.—For instance for the Settlement and Land Revenue rates.

Q.—Do you not think that if you have statistics of production for any district, and they show that the production is, say, Rs. 50 per head of the population at one time and that 5 years later it has increased to Rs. 65, that will be an index of the growth of production ? Does not that standpoint appeal to you ?

A.—I have no objection to the increase of all knowledge, but I do not see how you are going to arrive at that knowledge. I think the possibility of getting anything like accurate figures of production of all kinds of produce in the districts is very doubtful.

Q.—Such statistics as are possible are obtained in all countries, in Canada, in Australia and other countries, and you will find that they are actually acting on those figures ?

A.—I do not know what is done there.

Q.—You may take it from me that the preparation of statistics is necessary ?

A.—I would be inclined to use my own judgment in each case.

Q.—You do not think that production statistics are necessary ?

A.—Only where they can be directly applied. The production statistics, for instance of miscellaneous things is impossible. We make statistics of the chief cereal productions and it is difficult enough to do.

Q.—If you are in error to what extent would it vitiate the statistics ? By how much would they be wrong ?

A.—If you can assure me that the statistics of production would be within 20 per cent. of the correct figure, of course, that would be an addition to my knowledge.

Q.—Absolute accuracy in statistics is not to be expected. After all they are a lot of guesses, but even with all that in such cases, the information as regards statistics is of value. Do you think that statistics of production are necessary ?

A.—As I said before, where they affect the Land Revenue assessments, they are necessary and we ought to improve them if we can, but it is a very difficult matter to improve them.

Q.—You have no faith in the efficacy of statistics in determining the economic conditions of the people ?

A.—I do not approve of comprehensive statistics.

Q.—It must be fairly reliable. You must know what the money value is of the products in the district, or village or town. You must either do it in that way or not do it at all ! That being the case, are you in favour of proceeding with such work ?

A.—I am not in favour of proceeding with the general survey.

Q.—That ends the matter. I do not think there is any necessity to discuss these questions further. You are also certain that the towns will not meet the cost of such work ?

A.—I am quite certain that they would not.

Mr. Kaul.—Q.—I would like to ask you certain question with regard to some points in the statements made by you in your answers. You say in the 2nd paragraph, " I think that no one with any experience or understanding of the difficulties of making statistics of quantity of agricultural produce approximately correctly would propose to attempt to make annual statistics (if that is what is meant) of quantity of crops of minor importance ". Your present system is that a man makes the crop inspection ?

A.—The officer who makes it is the Revenue Surveyor.

Q.—Your Revenue Surveyor makes an actual record of whatever is sown on the ground ?

A.—Yes, he notes that on a map. He says, " this is paddy, this is sesamum, this is so and so ".

Q.—With regard to each area, large or small, whatever the area may be, he actually takes a note of it ?

A.—Yes.

Q.—But in sending the report to the authorities, he lumps together all the minor crops ?

A.—Yes.

Q.—He sends a report of the principal crops, but the minor crops he lumps together ?

A.—We have a good many heads of cereals. Of the main cereals he gives the figures.

Q.—And the rest he lumps together, that is what he does ?

A.—Yes.

Q.—Supposing he was asked to give the figures regarding the other crops—they are very small, so that there would be very little additional work, taking it all in all.

A.—The registers and forms would have to have additional columns printed and that would demand some additional work.

Q.—A little more clerical work and a little more paper perhaps ? You might have to use two books instead of one.

A.—Yes.

Q.—But he has got the material available and it is only a question of transcribing it ?

A.—Yes. Of course, there are certain fields sown with mixed crops. You might have two crops sown on the same ground—maize or beans, or other things.

Q.—It is always possible to get over that difficulty ?

A.—Yes.

Q.—As regards the cattle census you say this “ My recollection is that the statistics were obviously inaccurate ”. Do you know why they were inaccurate ?

A.—It is simply a general inaccuracy which dominates the whole country. This is one of my main points of objection to a general Census, that you cannot get correct statistics. I have examined the statistics and found sometimes that they are simply nonsense. If you examine any Government office, you will find that the figures there are apt to be nonsense. That means that you must have superior supervision and more staff.

Chairman.—Q.—If you collect information which is nonsense in one year, can you not hope to improve by practice in subsequent years.

A.—If the statistics are not being used, those errors will go on from year to year. For instance, with regard to statistics of mortality in a District, where I happened to be Deputy Commissioner. Myaungmya, I got hold of the Government Gazette and looked at the statistics of the district with regard to the deaths in the towns. It gave the deaths at about 95 per mille in Wakemo that had been going on from week to week. I do not know for how many years it had been given as 95. These statistics were produced by a specialised department—the Medical Department.

Mr. Kaul.—Q.—What was the recording agency.

A.—The headman of the village or the headman of the ward, who keeps the death registers.

Prof. Burnett-Hurst.—Q.—What is he paid ?

A.—He is paid on his revenue collections ?

Q.—How much is he paid ?

A.—Generally speaking he gets enough to keep him alive. The returns are collected and sent to the Civil Surgeon's office. He has a clerk

who compiles them for the district and he puts them in the district statement and submits them to the Inspector General. Now we have a specialised department ; the Department of Public Health. They publish the figures in the Burma Gazette. When I went into it I found that they had forgotten that the area of the municipality had been enlarged.

Q.—Is it not due to the fact that you are employing an ill-paid, inefficient agency and you are not getting qualified statisticians ?

A.—Yes, I would like to see criticism on it. These death statistics ought to be accurate and they should be carefully watched. Figures like that ought to make the head of the Health Department jump off his chair, but that went on year after year. What is the good of statistics of that kind ?

Q.—We agree.

A.—You do not want a statistician there ; you want a medical man.

Mr. Kaul.—Q.—As a practical man, it was his duty to have a proper amount of checking ?

A.—He will not do it. He would do it pretty sharp if somebody was interested in it. If you do try to get information you will have to watch it with an eagle eye.

Prof. Burnett-Hurst.—Q.—If you had a statistician in charge he would not publish it knowing it to be worthless ?

A.—You could not have an highly educated statistician in the Municipality or even in the Health Department.

Mr. Kaul.—Q.—Is not the efficiency of the subordinate revenue agency improving ?

A.—Government officers try to improve it and I suppose in the long run Government efficiency does improve, but it is a very doubtful question. It depends upon the general educational conditions of the country, the public and the officials.

Q.—Do you mean that the efficiency of the staff has not improved in the last 30 years ?

A.—I think it is because education has gone ahead.

Q.—For various reasons it has improved ?

A.—Yes, it has. There is reason to believe that it has.

Q.—The working of the actual census would also improve ?

A.—In the course of time.

Chairman.—Q.—If we begin now it will go on improving ?

A.—I think the best thing is to do the practical things first. If we get efficient in that, we shall be able to take on more work afterwards.

Mr. Kaul.—Q.—Do you mean to say that the Government of India knows nothing about Burma ?

A.—You ask any Burma person that question ?

Q.—Every provincial officer thinks that the Government of India knows very little about them and yet the Government of India knows a lot ?

A.—I admit that the Government of Burma does benefit a great deal from the general knowledge that the Government of India has.

Q.—The Imperial Statistical Bureau might have a representative from Burma on it. If you send a representative he would know the country.?

A.—I do not think it will be found to answer expectations.

Q.—One of your Commissioners has become Secretary to the Government of India and he is supposed to know everything.

A.—He does not. I don't think you will find that the Government of India is completely in touch by having a liaison officer.

Q.—By transferring an officer from this province to the Government of India, they must become cognisant of the conditions of your province ?

A.—It does not answer in practice, because many of the men who get transferred to the Government of India are transferred at an early stage of their career and stay there a long time and lose touch.

Q.—Supposing he is transferred late, it is all a question of keeping in touch ?

A.—I do not think any one can do it.

Q.—Not even a body of men ?

A.—Yes. In the matter of the general statistics we would want to know the object with which you are collecting them.

Q.—Does a settlement officer keep in touch ?

A.—Yes, I think he does, I think he is as good an expert as the Local Government is able to make him. I have been an assistant settlement officer myself. It is very far from perfection because a settlement officer is a man who is very often given other employment. It may be an advantage in some ways, because he gets a wider experience. The Settlement Commissioner has lived in Burma, he knows the country and when he is on tour he is in touch with the districts. If you are asking for a central control of statistics, I do not wish to oppose that. For purposes of economic science, you want world control. I have not seen what the Resolution on the Imperial Conference was on this subject.

Prof. Burnett-Hurst.—Q.—(Referring to *Burma studies No. 3 "Industrial Agriculture"*, presented by the witness.) With what object was that pamphlet written ?

A.—It was written on an economic study.

Q.—Do you believe in economic studies ?

A.—I do, just as I believe in metaphysics as the best way of preventing superstition and correcting wrong beliefs.

Q.—Would you approve of the statistics compiled by Mr. Calvert in his "Wealth and Welfare of the Punjab", and by Mr. Keatinge ?

A.—They are all valuable works.

Q.—Would you approve of similar studies being made intensively by trained men who have knowledge of the conditions of the province in which they are residing ?

A.—I think if they are as practical as Mr. Calvert and I saw that the practical object was consolidation of holdings, for instance, it probably ought to be done.

Q.—Then we are directly in touch with the people who have that object in view.

A.—That would not be discursive : there would be criticism.

Q.—But Mr. Calvert's studies were directed by nobody except himself ?

A.—His book is not a book of studies. It contains a good deal of matter with a view to help his co-operative work.

Q.—I have visited Mr. Calvert and I admire his work very much.

A.—Which of the statistics and economic data compiled at present by the provincial government are in your opinion, useless and ought to be "scrapped" ?

A.—I should like to have notice of that question.

Q.—At any rate you consider the vital statistics worthless ?

A.—No. We want vital statistics, but we want them sound.

Q.—The present vital statistics are of very little value ?

A.—That was an illustration of the importance of our keeping our eyes open. The vital statistics may have improved of late. I do not think we should at present go in for more things because we have bitten off more than we can chew already.

Q.—And there is no need of going further ?

A.—I would not quite say that. It might be that the settlement officers might want to take in other matters. I think that will be done.

Q.—Do you approve of the establishment of the Rangoon Labour Office with a view to ascertaining correct economic data with regard to the conditions of the people both in the towns and villages of Burma ?

A.—In Burma I think they are not at present to go into the villages.

Q.—In the near future they intend to do so ?

A.—I do not think that I gathered that from Mr. Marshall.

Q.—He told us yesterday that later he intends to collect wage statistics in the village ?

A.—I think the expediency of that is very questionable.

Q.—If you could obtain a sufficiently well trained staff to carry out an intensive study, covering, say, a year, and make this study in selected parts of the province, would you approve of that where the person who makes it keeps in touch with the officials ?

A.—An intensive study on the lines of the questionnaire ?

Q.—Not necessarily, but intensive studies similar to those carried out by Dr. Mann and on the lines of the studies made in the Punjab ?

A.—I should not like to give a general assent to that. What I should be inclined to do is that if I had spare money and spare experts, I would put them to examine the land revenue statistics. As I have said, these are practical. It might be of practical benefit if we gave them our vital statistics and had them more closely examined.

Q.—We were informed yesterday that statistics relating to Income and Indebtedness were worthless ?

A.—I do not say that they are absolutely worthless. Some settlement officers are very able men and they collect statistics with their own work in view. If you use them apart from that settlement officer's district and his particular direction of enquiry they must be quite worthless. Just as a set of books kept for one business would be of no use in another.

Q.—Statistics of that nature are out of date in 5 years, are they not ?

A.—Yes, I would not trust them very much.

Q.—Do you think that if statistics on lines of those collected in settlement reports were kept up to date for selected areas they would be useful ?

A.—Who is going to criticise them. You get clever making Settlement Reports, but nobody will read them at present, that is the trouble. Who reads that little pamphlet I have given you ? Now, I understand you have no non-official witness in Burma. Why is that ? It is because nobody takes any interest. I do not say that your statistics would not be useful if they were in a more advanced country. They would be. But they are going to lie on the shelves unless a particular professor in a college uses them in regard to his subject ; and then it has not been subjected to criticism or examination.

Q.—Your opinion is that only data that are used should be compiled ?

A.—Yes. I think the labour office will be more useful for the employer and for organisations of labour.

Q.—That is a case in point. Labour Offices should have been established years ago ?

A.—That is only where there are strikes and organised labour. In India I think it is questionable whether organised labour can use statistics.

Q.—You think the mere establishment of a labour office will prevent strikes ?

A.—It is used in strikes between employer and employee. It has never settled strikes. It has never done so in England. The statistics about labour are required because if you have no statistics people would be telling lies which could not be refuted.

Q.—For that reason is it not necessary to get proper information about rural conditions ?

A.—No, not where it is going to be material for a fight in some way.

Q.—Are there not exaggerated and incorrect statements spread abroad about the conditions of the people ?

A.—Yes. There are.

Q.—Is it not therefore reasonable and essential to collect accurate information ?

A.—If you can get it, but I do not think you will get it. It is not going to come into constant use. That is not the case with wage statistics

in England. As soon as they appear and are published they are pounced upon by everyone. If you publish statistics of rural villages, who will notice that they are published at all.

*Mr. Kaul.—Q.—*You think for that reason, they are not used by the people ?

*A.—*They cannot be good because they are not used. That is just the trouble. We are not advanced enough and the equipment contemplated is too advanced for this province at the present time.

*Chairman.—Q.—*You are not referring to the whole of India now ?

*A.—*I should not. But I do not know enough about India.

Mr. J. J. BENNISON, B.A., I.C.S., Superintendent, Cottage Industries, Burma.

Written Statement.

Question 37.—The list includes most of the important cottage industries of Burma. The articles made here, in many cases, differ from those made in India, *e.g.*, cotton and silk umbrellas are typically Burmese products, and the same applies to the brass Buddhas, gongs and bells used in monasteries and pagodas, and to the iron umbrellas for pagodas.

Questions 38 and 39.—I think it is very unlikely that reliable data could be obtained relating to the production of all the cottage industries of the province. The greater part of the population is, for the greater part of the year, engaged in agriculture and cottage industries in many cases are subsidiary occupations. A Burman does not as a rule stick to one occupation throughout the year. This is particularly the case in Upper Burma where the rainfall is not certain. In order to eke out a living the cultivator is compelled to turn his hand to some other occupation, *e.g.*, carpentry, charcoal burning, mat making, etc., according to the demand for these services at the time. The Burman is generally more versatile than the Indian presumably through force of circumstance. It follows that the number of people engaged in any particular industry varies a great deal from year to year according to the nature of the harvest and also from season to season during the year. In some towns, *e.g.*, Mandalay and Rangoon the people are not cultivators and as a rule stick to one industry throughout the year.

Question 52.—No alteration seems called for.

Question 53.—It would, I think, be possible to secure returns showing the number of craftsmen in any particular craft earning varying rates of wages but for the reason that the numbers would vary from year to year and from month to month, I do not think the figures would be of much value.

Question 54.—I think the present statistics are fairly reliable.

Question 55.—As a rule payments are made in cash.

Question 56.—I do not think this is possible. Craftsmen have no regular working hours.

Questions 87 to 93.—I am not in favour of an economic enquiry into all the industries as I do not think the figures obtained would be reliable. As regards the cottage industries I should suggest that the enquiry be confined either to (a) the industries localised in certain places, *e.g.*, pottery and lacquer making which are found in isolated places or (b) to the industries found in selected areas. An officer with previous experience of this kind of economic investigation and with the necessary local knowledge should be put on special duty to conduct the investigation. By choosing as many localised industries as possible and selecting areas from each district in the province I think it would be possible to obtain a very fair estimate of the standard of living of the various classes of people. A great deal of tact would be necessary in conducting the investigation as the Burman is averse to giving any information about himself—he suspects an ulterior motive. Intensive study by personal observation and independent verification of information elicited seems the best method of obtaining reliable data.

Oral evidence, the 21st April, 1925.

Chairman.—*Q.*—How long have you been engaged on cottage industries ?

A.—For about 5 months.

Q.—May we ask what your previous experience has been ?

A.—Just the ordinary regular line of the Indian Civil Service.

Q.—Is there a special office to look after cottage industries ?

A.—Yes, it was started about three years ago.

Q.—Is there an Industries Department ?

A.—Yes, there is a Department of Industries.

Q.—And you are a section of that Department ?

A.—Yes, I come under that Department, but the post of Director of Industries was abolished two or three years ago and in place of that a Superintendent of Cottage Industries was appointed just to deal with cottage industries.

Q.—What sort of cottage industries do you look after ? What is the nature of the work you do for the cottage industries ?

A.—Government have picked out three industries, namely the making of lacquer ware, the making of pottery and weaving. Besides looking after these three in particular I have to look after cottage industries in general.

Q.—If we want comprehensive statistics of the production from cottage industries how can we collect them in this province or in the district ? We want to know the value of the production in the year of all kinds of industries ?

A.—I do not think it would be possible to collect all that. To get all the statistics would be a very big problem. I do not quite understand the object of it.

Q.—The object is to get detailed values of production in the country—production from agriculture, fisheries, forests, mining, etc. We want the value of all these classes of products from year to year. How are we to get it ?

A.—It seems to me that it will need a very big staff and specialised study.

Q.—You have agricultural production. You have the quantities and the areas already. You have to obtain the value of the products. You can now make rough estimates of the production from agriculture ?

A.—Yes, but I do not see how you can obtain any reliable estimates of the production of cottage industries.

Q.—Would not the same staff that collects the Revenue statistics in the villages be able to collect this ? What would be the value of agricultural production and all industrial production ? We want to know each of these very roughly ?

A.—In the villages the majority of the people are engaged in agriculture.

Q.—But they have also subsidiary occupations ?

A.—These are largely the cottage industries.

Q.—Roughly how much of that income comes from cottage industries considered in relation to agriculture? Can you make a rough guess?

A.—I should say about two-thirds of the people are engaged in agriculture for the greater part of the year; the proportion would be fairly small.

Q.—It is estimated in India that it is 25 per cent?

A.—Yes, it is something like that. I was going to say that it was about a quarter.

Q.—Would it be the same here?

A.—Yes, about the same.

Q.—You say in the statement you have given us “ I think it is unlikely that reliable data could be obtained relating to the production of all the cottage industries of the Province”. If there is an organisation, could it not obtain that information. Could it not be done by the same staff that looks after the Revenue statistics. If you give assistance or employment for three or four months in the year to village accountants, would they not be able to collect such information? It would not be as correct as if an expert was employed? It would be left to the Revenue Inspectors to compile the figures and pass them on to you?

A.—The Revenue Inspector is not a well educated man. Of course, you could get an estimate, but to get anything like a reliable one you would need men with experience of this kind of investigation.

Q.—In the first year it would be rather rough, but the degree of accuracy will improve year after year?

A.—Yes, if we have proper superintendents.

Q.—They will issue instructions to improve the collection of information?

A.—Yes.

Q.—It would improve the collection of your statistics?

A.—Yes, I think it would.

Q.—You say “ I am not in favour of an economic enquiry into all the industries as I do not think the figures obtained would be reliable”. Why do you say that?

A.—If you engaged a very big staff, I suppose it could be done, but I do not think it would be worth the expense.

Q.—You say “ A great deal of tact would be necessary in conducting the investigation as the Burman is averse to giving any information about himself—he suspects an ulterior motive”. You have heard of estimates of wealth and income prepared in other countries. They say that the wealth of Great Britain is somewhere between 12,000 and 20,000 million pounds, and that of America 300,000 million dollars. You have heard all that?

A.—Yes.

Q.—Do you think it is desirable to start from now to make the information more and more accurate?

A.—Personally I do not think so. Take an ordinary Burmese village : if you tried to get information as to how much a man was worth he would not tell you.

Q.—Even in more advanced countries nobody wants to have all his resources placed before the public, but you get it by some means or other. If we have an approximate figure to start from, we can devise means to make it more and more accurate from year to year ?

A.—I cannot see what the object of it is. It will take a lot of time and money.

Q.—The object is the same as they have in other countries. You will know from year to year whether the country is progressing in material prosperity or not and how we stand in reference to other countries. If we are not so well off as our neighbours we might try and improve. It will give an idea of the economic trend of the country. Would not this information be of some value ? Although it may not be correct at first, in course of time it will become correct. But should not a beginning be made at once ?

A.—I see your point. I think it would be desirable but the information would be very unreliable.

Q.—We want the statistics of all the industrial production. That is what we are directly concerned with. We want the industrial production of Burma measured in figures giving the value for the year. How would you do it as Superintendent of Cottage Industries ? Tell us what staff you would want and what money you would need ? How would you collect the information about the value, about the amount of raw-materials used, and the value added to it by manufacture ?

A.—I would reply that I do not think it could be done. The people engaged in cottage industries vary a great deal from year to year.

Q.—How much money do they make out of it ? Supposing we worked it out for each district and found out the total value of the production. If the Government asked for it how would you proceed, what staff would you need for collecting the information ? That is the problem before us and we want your help. We want to know how you would collect information about cottage industries ?

A.—I really have not thought about it. I dismissed it from my mind because I did not think it practicable. In order to get anything approaching a reliable estimate you would want a very expert staff.

Q.—You may say that it is not worth while spending too much money upon it, but we want rough estimates. There would be instructions given by experts from the top. Would it be so difficult to collect the information ?

A.—It would be very difficult. Now in an ordinary village, for instance, take a cottage industry like weaving. For most of the year a man will be engaged in agriculture but on odd days he might be engaged in weaving. If you tried to find out from the household how much he earns by this product and how much he gets for it, it is very doubtful that you would get that information.

Q.—By intensive study an official can make an average of that ?

A.—You can go round different villages in the districts and then make an average. That would be possible but to go round and take every district in each province and find out the total production, seems to me a very difficult problem.

Q.—It is, but if it has got to be done, it can be done ?

A.—Yes, but it would be very difficult.

Mr. Kaul.—Q.—You have said that you are concerned particularly with three cottage industries. May I ask what sort of work you do in connection with these cottage industries ? I suppose you try to develop the industries ?

A.—Yes, we have a lacquer school at Pagan and try to improve the lacquer work and make articles that will be more suitable. At present the European demand is increasing and our object is to try and create and open out fresh markets for lacquer work. The same applies to potteries we try to help the workmen to improve their work.

Q.—Have you any statistics of export ?

A.—No, the work is only in a very experimental stage ; the department was formed only a few years ago.

Q.—You keep in touch with the workmen. You not only teach the children, women and men how to produce these more expensive articles, but you also supervise the actual working of these industries ?

A.—Yes, I inspect the schools.

Q.—Do you only inspect the schools or do you also inspect the workshops where they work ?

A.—Yes.

Q.—Do you keep a list of these workshops ?

A.—No list has yet been made but as regards lacquer workers, all the people engaged in this industry are localised in three places—Pagan in Myingyan District, Kyaukka and Maungiaung in Monywa District, and Ava in Sagaing District.

Q.—In these three places you know pretty well how many workmen there are ?

A.—Yes we could easily get all the figures about these industries.

Q.—You can get the productions of these three industries ?

A.—Yes.

Q.—Then what would remain would be the miscellaneous cottage industries which I suppose are very small ?

A.—No, they are not small. Lacquer is localised in these three places ; it is not made anywhere else ; it is a whole-time job, but the majority of cottage industries, I would say, are not whole-time occupations, they are taken up only occasionally and the people engaged on them are scattered about all over the country.

Q.—With regard to these would it not be possible with a local agency to collect roughly details of the amount of production or ascertain from these people how much they produce in a year ? Say for instance a blacksmith or the people who are making Buddha images ?

A.—It could be done but it would not be reliable information.

Q.—Would not the local agency be able to verify it to some extent ? Would not the village headman be able to say whether a man is telling the truth when he says that he is selling only 50 Buddhas ?

A.—The point is that if your data has got to be approximately correct, it would not be done by the village headmen or surveyors, who are not educated men. I do not think they would understand the nature of what you want.

Q.—We want simple outturn, we do not want to make an intensive study. Just that simple thing.

A.—If you want to find out the total amount of the raw-material and the finished products, that again the village headman could not do.

Q.—“ How much material do you buy, how many Buddhas do you sell ? ”, rough information like that could be collected, but if the surveyors or headmen of the village was to enquire into a hundred kinds of things, that would be too much for them !

A.—I do not know whether the information you would get from them would be reliable, but you could, of course, get something.

Q.—It would be as reliable as other information supplied by them, and acted upon by you. The headman is responsible for 100 kinds of things and so is the village surveyor. You said it was impossible to find out the regular working hours of the craftsmen. I suppose a craftsman has certain stated hours. He gets up, has his morning meal and sets down to work ; then he has a little nap in the day and then he works in the evening and then he stops, is it not that ?

A.—Generally the Burman works when the mood takes him. He might work from 7 to 10, have his meals, and then work from 1 to 3. But, as a rule, there is no fixed hour. The Burmans are very irregular.

Q.—Are you taking steps to teach them to have fixed hours, in their own interests ?

A.—No. I think the Burman might with advantage become more methodical but he does not like that sort of thing.

Professor Burnett-Hurst.—Q.—Have you made any survey of the cottage industries ?

A.—Personally, no.

Q.—Not even similar to the surveys made by the United Provinces Government and Sir Atul Chandra Chatterjee's survey of cottage industries ? In certain provinces they have made surveys of their cottage industries.

A.—At the end of this year there will be the first report of this Department from the time it was started up to the 30th June this year.

Q.—Would not that be a report on the working of the department as distinct from a survey of the cottage industries ?

A.—Yes.

Q.—Will you be making a survey of the industries ?

A.—I have not yet thought about it.

Q.—Do you not contemplate it ?

A.—At present I confine myself mainly to lacquer, pottery and weaving. Later on I shall probably write a report on all the cottage industries in the province.

Q.—Have you published any pamphlet or brochure dealing with the cottage industries of Burma ?

A.—People have at various times published monographs, *e.g.*, on wood carving, then there is Mr. Morris' report on his work during 1918-19 in connection with cottage industries, also Mr. Grahame's report on the occupations of the Mandalay district.

Q.—Can you furnish us with a list of such reports ?

A.—Yes I could. After the office of Director of Industries was closed down some of the reports came to this office, some went to the Development Commissioner's office and some, I think, have been lost. The records are, therefore, incomplete. I can furnish you with a list of all the books, monographs and reports connected with cottage industries.

Chairman.—*Q.*—If we could have copies as well we would be very grateful ?

A.—I do not know whether I can get them for you before you leave.

Q.—It could be sent on.

A.—Shall I do that ?

Q.—Very well.

Professor Burnett-Hurst.—*Q.*—You mentioned in reply to question 37 that the list includes the most important cottage industries of Burma, etc. Can your Department supply us with a complete list ?

A.—Oh, yes.

Q.—Under these heads ?

A.—Or any heads you like.

Q.—Would you regard " illicit distillation " as a cottage industry ?

A.—Yes, as they do that kind of thing in their own houses.

Q.—Is it at all considerable in Burma ?

A.—I cannot speak with any authority upon that point ; the Excise Department will give you particulars about that.

Q.—Do you give any financial assistance to persons engaged in cottage industries, for example, lacquer and so on ?

A.—Yes.

Q.—Can you not make it a condition of the grant of financial assistance that you should be supplied with certain information, that is to say about the raw-materials that they use and the value of the finished products ?

A.—I do not quite understand. At present the loans to these cottage industries are to the Co-operative Societies of artisans and not to individuals.

Q.—I understood that it was made to individuals ?

A.—No, only in so far as they are the members of co-operative societies of artisans.

Q.—Would it be possible to work through the agency of the Societies and collect that information ?

A.—We could get information relating to those societies from them.

Q.—Are there any such societies ?

A.—Yes. A number of them are at Mandalay.

Q.—What proportion of persons engaged in the lacquer industry are members of co-operative societies ?

A.—I could not say off hand.

Q.—Would you say half or one-quarter or 10 per cent. ?

A.—If I did say anything, it would be very unreliable. I can get it for you. There are 5 lacquer societies in Pagan. Pagan is the main centre of the lacquer industry.

Q.—So if you get information through these societies, it would be far simpler on the whole ?

A.—Yes.

Q.—That is to say you can get information as to the number of persons engaged in the lacquer trade and the amount of material they use ?

A.—As I said before, for these particular industries that are localised, I can give you all the information. It is only when it comes to the subsidiary occupations which are not whole-time occupations that it is very difficult because they work at odd times.

Q.—Can you give us a list of occupations and classify them according as they are ' full time ' and ' part time ' ?

A.—Yes, though some are both.

Q.—You mentioned that if a Burman stated his wealth the information may be wrong. But there are a considerable number of persons, other than Burmans. Would they give information more readily ?

A.—I do not know much about Indians, but I should say that nobody likes to give information about his income and wealth.

Q.—Is the Burman in particular more sensitive about giving information, than, say, the Madrassi ?

A.—I should say " Yes ".

Q.—He would resent it more ?

A.—I should think so.

Q.—Why ?

A.—I do not know. I suppose it is a matter of temperament. Probably he suspects that it would be for taxation.

Q.—Do you not think that the Madrassi would also suspect that ?

A.—Yes. Only I have had more experience of Burmans and I know that it is very difficult to get any information as regards their wealth and income and one would have to use a considerable amount of tact and talk to them in an indirect way to get what was wanted.

Q.—There are some outlying districts in Upper Burma where you might meet with a hostile reception ?

A.—That is quite possible.

Q.—You think it is inadvisable to carry out an enquiry into income or wealth ?

A.—Yes. It would be very difficult. You would meet with hostility in certain parts of Burma.

Q.—If you wanted to make studies of typical areas, would you be unable to do so in certain parts of Burma on account of the type of people inhabiting those districts ?

A.—Yes.

Q.—Have you, in the course of your enquiries into cottage industries, obtained any information about the indebtedness of the people ?

A.—No. I have not paid any special attention to that.

Q.—Do you think it would be possible to get information about indebtedness ?

A.—Various people have made a study of indebtedness in particular districts. In 1909, Mr. Clayton made a study of indebtedness in the Irrawaddy Division.

Q.—You are more likely to get information about indebtedness than about income ?

A.—Yes, I think so.

Q.—In your reply to questions 87 to 93 you state “ An officer with previous experience of this kind of economic investigation and with the necessary local knowledge should be put on special duty to conduct the investigations ”. That is to say that you are of opinion that if enquiries are to be made, we should have highly trained, highly qualified, and well paid investigators ?

A.—Yes.

Q.—It would be better to get accurate information in limited areas than to send a number of ill-paid investigators all over the country to collect a lot of inaccurate data ?

A.—Yes.

Q.—What makes you think that the present statistics of wages are fairly reliable ?

A.—Is it not difficult to estimate the rate of wages prevailing in a particular district. The results of the quinquennial census were published in 1916. After that the Government thought it was not worth while to continue it.

Q.—Are these statistics used ?

A.—I do not know what use is made of them. I have not had much experience of this work.

Q.—What is the village headman paid ?

A.—He gets a commission on the revenue collected.

Q.—Which roughly amounts to ?

A.—It varies a great deal.

Q.—Rs. 10 or Rs. 15 ?

A.—Rs. 50 to Rs. 1,000 a year. It varies a great deal in different districts.

Q.—That is to say it is from Rs. 4 to Rs. 100 per month ?

A.—I do not know what the highest figure is.

Q.—The majority of the headmen in Upper Burma are ill-paid ?

A.—Yes, I should say they are.

Q.—Could you rely on them for collecting accurate statistical data ?

A.—No, I do not think so. At present most of the village headmen with the *Wanthanu* movement on, are having a very hard time.

LIIIEEC

Mr. S. A. SMYTH, C.S.I., I.C.S., Financial Commissioner, Burma.

Written Statement.

The Financial Commissioner, Burma, is concerned with the following statistical returns :—

- (1) The Annual Report on the Land Revenue Administration of Burma which is prepared in the Office of the Financial Commissioner.
- (2) The Annual Note on the Working of the Registration Department in Burma which is also prepared in the Office of the Financial Commissioner.
- (3) The Annual Report on Excise Administration which is prepared by the Excise Commissioner, Burma, and submitted to Government through the Financial Commissioner who records a note thereon.
- (4) The Annual Report on the Administration of the Stamp Revenue in Burma which is prepared in the Office of the Financial Commissioner.
- (5) The Annual Report on the Administration of Salt Revenue in Burma which is prepared by the Excise Commissioner, Burma, and submitted through the Financial Commissioner who records a short note.
- (6) The Annual Report on the Land Records Administration of Burma which is prepared by the Commissioner of Settlements and Land Records, Burma, and submitted through the Financial Commissioner who records a short note.
- (7) The Annual Season and Crop Report of Burma which is prepared and published by the Commissioner of Settlements and Land Records.

Of these publications, practically the only one which contains statistics useful for the purpose of an Economic Enquiry is the Season and Crop Report. The question as to the extent to which the statistics recorded in this report are useful and accurate has been dealt with in the evidence of the Commissioner of Settlements and Land Records, and I do not propose to go over that ground in detail. The Financial Commissioner is concerned with Land Revenue Administration in general, and I think that I can best assist the Committee by dealing with the subject of Economic Enquiry with special reference to the agricultural community.

2. So far as the agricultural community is concerned, the first step in an economic enquiry appears to me to be the division of the Province into tracts over which agricultural conditions will be more or less uniform (Q. 3). For the purpose of the 1921 Census the Province was divided into the following tracts :—

- Burma Proper—
1. Coast,
 2. Delta,
 3. Centre, and
 4. North

- Special areas—
1. Chin.
 2. Shan, and
 3. Salween.

These tracts are suitable for division on an agricultural basis, but for the purpose of an economic enquiry the Chin, Shan and Salween Tracts may be omitted, as in these remote and uncivilized areas nothing approaching accurate statistics could be collected or maintained.

3. The next step is (Q. 2) to divide the agricultural population in each tract into classes. This is a matter of some difficulty, because the division cannot be with reference to occupation alone. In Burma persons who receive rent and have no other occupation are extremely few. Rent receivers include the ordinary cultivator who, with advancing years, finds he can no longer work his land lets it to tenants ; the trader who invests part of his profits in land and continues to trade ; the money-lender who acts in a similar way ; and the successful cultivator who, in addition to working land himself, has other land which he lets to tenants. Rent payers and peasant proprietors who are purely cultivators are much in the minority. The ordinary cultivator, whether owner or tenant, supplements his agricultural income by engaging in non-agricultural occupations, and the extent to which he does so varies greatly from place to place. In some places the non-agricultural part of the income may be equal to, if not greater than, the agricultural part. The farm servant, known in Burma as the *Syin-hnga*, supplements his agricultural earnings by earnings during the non-agricultural season from occupations other than agricultural labour ; and part of his labour even during the agricultural season is not strictly agricultural. The whole-time field labourer may be said not to exist. The ordinary field labourer works in the fields only at special times, such as time of transplanting, time of weeding and time of reaping when the cultivator finds it necessary to engage outside labourers ; at other times he engages in any labour other than agricultural. In the case of all occupations, the husband may be engaged in agricultural work and the wife in non-agricultural work, such as bazaar selling, weaving, etc. From the above it is obvious that statistics relating to agriculture alone would be quite insufficient as a basis for estimating the economic position of persons who engage in agriculture either as rent receivers, cultivators or labourers.

On the basis of principal occupation, however, I think the community concerned with agriculture might be divided into the classes mentioned in Appendix A : but in collecting statistics in regard to these classes it will be necessary to collect statistics regarding their non-agricultural occupations as well as regarding their agricultural occupations.

4. Having determined the tracts and classes, the next step is to determine what statistics in regard to each class are theoretically necessary for estimating the economic condition of that class, and further to determine how far these theoretically necessary statistics can be obtained. To take the case of the cultivator, his economic position depends on his wealth, indebtedness, income and cost of living (Q. 1) ; but it is necessary to divide these items into several factors to each of which current statistics of prices, wages, etc., may be applied so as to gauge changes in economic position from time to time. The usual wealth of a cultivator consists of his land, his house, his cattle, his implements, his savings, if any, and the clothing

and personal adornment of himself and his family. The computation of wealth is dealt with in Questions 68 to 75 of the Questionnaire. As regards Q. 68, items (a), (b) and (c) have no application in Burma; as regards items (d) and (e) I regret that I do not know what the "inventory" and "census" methods are, and, therefore, cannot say whether they would be applicable. As regards Q. 70, agricultural land cannot in Burma be valued on the basis of average sale price noted in the Land Revenue Returns, because these prices take no account of the classification, of the land, and could not, therefore, be applied in calculating an average value. Settlement Reports contain information of sale values according to classification for 3 years at the time of settlement, but as the whole Province is not settled at one time these statistics are not concurrent, and are, therefore, of little value for the purpose of a Census of Wealth. Registration statistics also furnish no basis for valuation; they relate to immoveable property, not land alone; the area of the land to which they relate is not abstracted nor is the classification. The only way in which a Census of Land Values can be obtained is by local enquiry. This might be carried out by the verification of figures recorded by Revenue Surveyors and the abstraction of these figures according to classification, but the necessary enquiry would be lengthy and the statistics obtained not very reliable for any particular year, as in most areas sales in a particular year are few. As regards Q. 71, the only way to value buildings in villages is by local enquiry, and such enquiry would lead to very uncertain results. As regards Qs. 73, 74 and 75, I think that, so far as agricultural population is concerned, any attempt to estimate private wealth, except possibly in regard to land, should be abandoned as impracticable. Even if such statistics were now collected by detailed enquiry, the information obtained would be of no practical value for comparison with information to be obtained at a future detailed enquiry, owing to the fact that the possible margin of error at such an enquiry is very large.

5. The nett wealth of the cultivator is his gross ostensible wealth less his permanent indebtedness. Indebtedness is dealt with in Qs. 83 to 86 of the Questionnaire. As regards Q. 83, the only detailed information regarding indebtedness now obtainable is contained in Settlement Reports. These reports are compiled at different times and in them the division of indebtedness into permanent and temporary is exceptional. The subject of indebtedness in the Irrawaddy Division was enquired into by Mr. Clayton in 1910 and a printed report on the subject with numerous statistics is available. As regards Q. 84, the unit of measurement of indebtedness should undoubtedly be the household, which is the ordinary economic unit in Burma. As regards Q. 85, permanent indebtedness must, I think, be distinguished from temporary indebtedness. The cultivator in addition to having a permanent debt—often due to capital requirements, such as the purchase of land and cattle—contracts during the cultivating season for cost of cultivation and cost of living temporary loans repayable at harvest time sometimes in cash and sometimes in kind. For the purpose of comparison of the pitch of indebtedness from time to time, such temporary debts should be excluded, but for the purpose of calculating income the interest payable on them should be taken into account as well as the interest payable on the permanent debt. The only way of collecting information, whether initially or periodically, regarding indebtedness is by special intensive enquiries, and even with such enquiries the information obtained will not be very reliable or complete. In regard to indebtedness,

the only periodic figure which can be obtained without intensive enquiry is the rate of interest ; which could be estimated fairly easily by an examination of documents in Registration Offices and from other similar sources. For the purpose of an economic enquiry, therefore, I consider that initially the debt should be gauged by intensive enquiries and periodically the burden of debt should be gauged by applying to its initial amount the varying rate of interest. I do not see how any statistics to show the variation in the total amount of debt from time to time of any class of the population can be periodically obtained.

5. The ascertainment of income in the case of the agricultural classes either initially or periodically is a matter of much difficulty. The methods hitherto adopted (Qs. 62 and 63) seems to me to be of little utility. I am not acquainted with the lines adopted in Australia in 1914-15. As regards Q. 64, the unit of enumeration for purposes of income statistics should be the household. As regards Q. 65, the period of time should be the year, and with reference to Q. 66 I think it would be necessary for all agricultural classes to adopt the same unit of time, namely, one year. In answer to Q. 67 I think it is impossible to assign any value to the free gifts of nature in estimating income, and it is also unnecessary to do so if such gifts are not included in cost of living.

7. The income of the agriculturist depends, so far as the land is concerned, on the quantity and value of the crops he obtains (production) less the cost of cultivation (wages and materials). Settlement Reports contain statistics on this subject as it is necessary to estimate nett produce, namely, gross produce less cost of cultivation, for the purpose of assessment of land revenue, but these reports are not simultaneous and do not exhibit variations from year to year. It is, therefore, necessary to devise some system by which variations in the amount and value of production and the cost of cultivation from year to year may be exhibited. The amount of production depends on the area worked, the crops grown, the outturn of the crops and the value of the outturn. Statistics of crops grown and the amount of the principal crops are obtainable by districts in the Annual Season and Crop Report. The estimates of area are I consider sufficiently reliable for all practical purposes. The estimates of yield cannot be more than an approximate indication (Q. 5). The existing machinery for crop reporting (Q. 6) in Burma is, I think, as good as could be devised ; and I do not consider (Q. 7) that statistics of the yield of minor crops could usefully be compiled in Burma. As regards Q. 9, the Census of Cattle, Ploughs and Carts, though it might be useful in connection with an Estimate of Wealth, appears to me useless for the purpose of estimating production ; and I also do not think that any useful result would be obtained in Burma by attempting to record statistics regarding the dairy and farm products referred to in Qs. 10 to 13.

There are no periodic statistics of the area worked by each cultivator. The ascertainment of the area is a matter of some difficulty, as the majority of the cultivators work more than one holding. It could only be done by intensive enquiry on the basis of the Land Records Registers and Maps, but having obtained the average area in any tract I do not see any difficulty in treating it as a basic figure and applying to it periodic statistics of crops, outturn and prices, so as to obtain a periodic valuation of the total agricultural production from the area. The cost of cultivation consists of many items, one of these is wages. An initial intensive enquiry

would be necessary to obtain a basic figure for the number of units of labour employed, to which could be applied a periodic index figure of wages. Wages may be either in cash or in kind and a basic ratio of the number of units of labour paid in cash and the number of units of labour paid in kind would have to be obtained by intensive enquiry. The compilation of a Wage Census in Burma has been abandoned (Q. 40), and, in any case, would not be of much use for determining the expenditure of the agriculturist on wages. The ascertainment of periodic variations in the rates of wages for agricultural labour will be a matter of much difficulty, as the agricultural operations for which wages are paid are numerous and there are different rates of wages in regard to each operation. The possibility of compiling periodic figures is a matter for detailed investigation. Materials also enter into the cost of cultivation, for example, seed, manure and implements. The basic figure of the amount of seed required is already fairly well-known from Settlement Reports, and can be verified by intensive enquiry; and it can be applied to periodic figures of prices. A basic figure for manure and implements might be ascertained from Settlement Reports or intensive enquiry but in regard to these items no periodic figure can be obtained. As regards cattle, the obtaining of any figure either basic or periodic is a matter of much difficulty, and the subject is complicated by the rearing of cattle by the agriculturist, the use of cattle in non-agricultural occupations, and cattle disease. The whole subject of cost of cultivation is one of extreme difficulty as will be seen from a perusal of Settlement Reports.

8. Assuming, however, that it would be possible to obtain basic and periodic figures to estimate the amount and cost of agricultural production so as to get at the pitch and variation of the income of the agriculturist from agricultural sources it still remains to take account of his income from non-agricultural sources, and this is a matter of even greater difficulty than before. I do not think it will be possible to do more than ascertain by intensive enquiry the normal non-agricultural income and apply to it a periodic index figure based on a general survey of the periodic variations of the incomes of persons engaged purely on non-agricultural occupations. This method is, however, very defective because the extent to which the same cultivator engages in non-agricultural occupations changes from year to year according to his success in agricultural occupations. I can see no method of bringing this variation into account. The whole subject is one for intensive enquiry with a view to devising some system of dealing with the matter.

9. As regards cost of living there must I think be an intensive enquiry directed to ascertain the relative quantities of the various articles purchased or used. This enquiry would give basic figures to which would be applied periodic figures of prices. The intensive enquiry should be held in regard to each class of the population engaged in agricultural work and the basic figures of relative quantity would of course vary from class to class. As regards Q. 78 the method of collecting information at this intensive enquiry should be by complete house-to-house enquiries, and for the purpose of obtaining a pitch which will reflect normal conditions (Q. 79) it would be necessary to ascertain quantities consumed over a period of at least one year. As regards Q. 80, the proportion of the population included in the class from which family budgets should be collected so as to afford fairly reliable data need not be very large, provided care is

taken to ensure that the locality selected for enquiry is typical. As regards Q. 81, I think expenditure under the heads mentioned so far as it is normal should be included. As regards Q. 82, once the basic items governing the cost of living have been ascertained by intensive enquiry, it will be necessary to take such steps as are feasible in order to obtain periodic returns of prices under these items. Before the items have been ascertained it is impossible to say what additional statistics of prices are required.

10. From the above it will be seen that I am of opinion that in order to obtain basic figures or even to determine the lines on which an economic enquiry should proceed it is necessary to undertake an intensive enquiry regarding each class of the agricultural population. I do not suggest that such an intensive enquiry should be universal over the class ; I think it should be confined to a typical group in each class in each tract, and that the results obtained by intensive enquiry in regard to the group should be assumed to apply in the case of that class throughout the tract. The intensive enquiry would, in addition to producing basic figures, indicate what periodic figures were required and how they could be obtained without undue trouble and expense (Q. 87). Such an intensive enquiry would necessitate a special agency containing officers experienced in collecting statistics, and it is not possible to say how long each enquiry would take or to furnish an approximate idea of the cost. I do not think that once initial intensive enquiry has been made it would be necessary to repeat it (Q. 94) until after the lapse of a fairly long period of years, say 10 to 20. For an estimate of the economic position in the interval I would rely on the periodic statistics which the initial enquiry showed to be necessary. The results of the initial enquiries and the periodic figures should of course be published (Q. 100), and I think there should be a co-ordination of the statistics over India (Q. 101). The unit of population should, I think, be the class over the tract (Q. 103). As regards cost I think (Qs. 105 to 108) that local bodies should not be called on to defray any part. The question of allocation between the Central and Provincial Governments is a matter of arrangement on which I have no definite opinion.

11. In connection with an economic enquiry I think some account should be taken of the element of effort, which might be gauged in respect of each class by statistics showing constancy of employment and hours of labour. The economic condition of an individual is fundamentally the return that he gets as compared with the effort which he puts forth ; and the lack of effort is one of the main causes of bad economic conditions. No economic survey of China would be complete without taking into account the enormous effort of the Chinese worker. Lack of effort may be due to lack of opportunity and it will, therefore, also seem necessary to have information on the subject of opportunity, *i.e.*, unemployment statistics.

12. Generally, in making an economic enquiry in regard to a country such as Burma, I think it is important to realize that anything in the nature of continuous detailed information in regard to the whole population is utterly out of the question. The only practicable plan is to select a few typical classes of which the economic condition governs the economic condition of the whole population ; and to record, in regard to each of these classes, only those key statistics which govern the economic condition of that class.

Oral evidence, the 21st April 1925.

Chairman.—*Q.*—We have to thank you for your very closely reasoned statement. You have summed up the whole thing at the end of your note. You say “Generally, in making an economic enquiry in regard to a country such as Burma, I think it is important to realise that anything in the nature of continuous detailed information in regard to the whole population is utterly out of the question. The only practicable plan is to select a few typical classes of which the economic condition governs the economic condition of the whole population ; and to record, in regard to each of these classes, only those key statistics which govern the economic condition of that class”. What would you regard as the key statistics ? We have mentioned a number of tests of the economic condition such as production, income, wealth, cost of living and so on.

A.—The question as to what are the exact statistics which should be regarded as the key statistics can, I think, be determined by an intensive enquiry with regard to each class.

Q.—That may be. For a whole district, what would you regard as the key statistics ?

A.—It is impossible to say.

Q.—Do you or do you not consider that production statistics are key statistics ?

A.—Production statistics certainly. If they relate to production they must be key statistics. Statistics relating to wages must be key statistics. Statistics relating to the cost of living must be key statistics. But exactly what those statistics must be is a matter of intensive enquiry.

Q.—Suppose Government wanted to know the total value of the production of a district, would you undertake that or would you consider it unnecessary work ?

A.—The total production of a district in all fields.

Q.—The fields may be classified as agricultural. You will also have to take into account industries, including cottage industries, mines, fisheries, pastoral and dairy produce, etc. ?

A.—I consider it impossible to arrive, by any easily compiled statistics, at the total production for all occupations for any district.

Q.—But you have practically got the total production as regards the principal crops. Those are the chief things that count ?

A.—The total production of the principal crops in any district can be ascertained easily and with reasonable accuracy.

Q.—Can you ascertain the agricultural production with reasonable accuracy ?

A.—So far as the principal crops are concerned.

Q.—And can you not make a rough estimate of the minor crops ?

A.—The production of the minor crops can be roughly estimated from the area under such crops and their comparative value to the principal crops.

Q.—So, you will be able to get the total value of agricultural production approximately ?

A.—Of the agricultural production which depends on the area. There are other sorts of agricultural production which do not depend on area.

Q.—Such as the production of cattle, milk, etc. ?

A.—Yes ; cattle and milk and things of that sort which are not taken from the land.

Q.—Would it be possible to make a rough guess of them or to study them ?

A.—No.

Q.—Supposing in a village you have so much agricultural production, could you not from enquiry in the village ascertain that all the other productions come to one-fifth or one-quarter ?

A.—No. I do not regard that as either practicable or as serving any useful purpose.

Q.—They do it in other countries. They collect it also by sending statements to farmers and somehow or other they work out the figures.

A.—I have no information as to what is being done in other countries.

Q.—Our problem is how to prepare a scheme of economic enquiry for all districts in Burma. Suppose we want complete production statistics, that is, for the heads I mentioned. Then we want also information as to income, wealth, cost of living, wages and so on. These latter are more theoretical. You might be able to get that from intensive enquiry from typical villages and by making enquiries under these heads and come to a certain conclusion, and from that it may be possible to prepare averages for the whole district ?

A.—At a particular time.

Q.—As regards production statistics, it is presumed that so far as agricultural statistics are concerned, you will be able to get them for a whole district ?

A.—Yes.

Q.—The other information about dairy and pastoral products and other minor industries, may be had for each city and town and added to the agricultural products ?

A.—The extent to which the population engages in non-agricultural occupations varies very considerably from district to district, and from time to time in the same district.

Q.—And according to the season also ?

A.—According to the season also, so that it seems to me impossible to estimate non-agricultural production with reference to agricultural production.

Q.—It seems difficult.

A.—Impossible and theoretically unsound.

Q.—Then, why is it that the Dominions and other countries prepare it ?

A.—I am not aware of the state of mind of the people who prepare it in the Dominions.

Q.—Is your state of mind against it ?

A.—Yes, as thoroughly misleading.

Q.—Supposing the statistics of the agricultural production are prepared in the way we talked about and the other economic tests such as wealth, income per head, etc., are derived from typical villages, would it be possible to prepare for a whole district in Burma figures showing the production per head of the population, income per head, wealth per head, (wealth means assets per head), property per head, cost of living and wages for particular classes of the people ? From those intensive studies, do you not think it is possible to prepare a rough estimate ? Would there be any difficulty in preparing that estimate ?

A.—From intensive study, if sufficiently intensive and relating to all the occupations of the district and all classes of the people, it is, of course, possible to prepare estimates of the income, production, etc., at the time of the enquiry.

Q.—It will not be of much value ?

A.—I do not think that it would be of any value.

Q.—That is not what is accepted in the Dominions and other countries ?

A.—Quite so.

Q.—You say “ As regards cost, I think that local bodies should not be called on to defray any part ”. Suppose, in a village the local people obtain statistics of production of cattle, their belongings and also their income and prepare a census and collect statistics amongst themselves. Say, half-dozen intelligent men collect together and enquire into the conditions of all their neighbours and prepare a statement, will you agree that it is possible ? Of course, you will agree that the people here are very ignorant but in other places it is possible to prepare such a statement. If such information is obtained from year to year would they know how they are progressing and their material advance from year to year ?

A.—They might.

Q.—Then, if similar information is obtained for other subjects, might they do not be able to compare themselves with others and get a comparative idea of their value ?

A.—They might.

Q.—Assuming they are able to collect this information and maintain it, are we not justified in maintaining that the money should come from the people themselves and not from outside ?

A.—The people themselves, without any statistical enquiry, have from their local knowledge sufficient information as to their economic status and as to the comparative economic state of the people of the neighbourhood. Further information they do not, as far as I am aware, desire.

Q.—Then, as regards the cost, do you think it is desirable that they should be made to pay ?

A.—The local bodies I may say do not desire that such statistics should be forthcoming and have means of arriving, from their own local knowledge, at the same conclusions as the statistics would justify. There is no

ground on which the local bodies could be called upon to pay a part of the cost.

Q.—Should not the municipalities be asked to undertake such enquiries in their own areas ?

A.—For the same reason I have given, I do not consider that municipalities should be called on to undertake such enquiries, free of cost to the Government.

Q.—You mean it should be a charge on the Government and not on the local people ; and do you attach any importance to the economic statistics as showing the economic trend of the local areas ? Would not such statistics as might be collected give an idea of the economic trend of the population ?

A.—It is to be hoped that they might.

Q.—You say here “ The existing machinery for crop reporting in Burma is, I think, as good as could be devised ; and I do not consider that statistics of the yield of minor crops could usefully be compiled in Burma ”. “ Usefully ” means having regard to the cost to the municipality ?

A.—I mean that, in comparison to the importance of these crops, the cost and trouble of compiling statistics of the yield would be too great.

Q.—In many countries they prepare the income per head, wealth per head and they arrive at those conclusions. Also, they arrive at the total wealth of the country—the national wealth. Do you consider that such information should be collected for Burma or not ?

A.—I do not consider that it is possible without intensive—without universal intensive enquiry.

Q.—Does “ Universal ” mean everywhere ?

A.—Everywhere, to arrive at any reliable statistics regarding the total wealth of the country and I do not consider that the cost of such intensive enquiry would be justified by the results.

Q.—Assuming that Government orders an economic enquiry for Burma, how would you proceed to carry it out in a district ?

A.—That would entirely depend on the orders of the Government as to the exact subjects in regard to which enquiry should be made.

Q.—In the present economic condition of Burma, what test would you take up yourself ?

A.—I have considered the case of agriculture and indicated the means by which I should proceed.

Q.—Would you not go beyond that ?

A.—Beyond that I have no special knowledge and I think enquiries should be made from people who have got special knowledge in regard to the remaining percentage of the population.

Q.—Supposing, you were asked to prepare a scheme for complete production statistics—well, approximate statistics. Supposing you are asked to prepare a scheme for giving the value of production for a district, kindly tell us how you would proceed. What information would you collect for each village and town and how much reliance would you place on the information obtained, that is, the complete value for one particular year for a district ?

A.—Do you mean that there is to be one enquiry once for all ?

Q.—Very well. There will be periodical enquiries, but take the first stock-taking census ; and you were asked to ascertain and give the value of the total agricultural production and the produce from industries, fisheries, forests and mines—the total production of a district for one whole year ?

A.—In regard to production of which there is no record of the existing statistics, the only means of making an estimate would be by intensive enquiry.

Q.—Would you do it by taking typical villages or by taking random samples ?

A.—You want to get an accurate figure ?

Q.—No. We want approximate figures of production for the whole of a district.

A.—I should divide the population into classes.

Q.—It is not a question of population, but production.

A.—Yes, and select a typical group for each class, estimate the production of that group by an intensive enquiry and apply the same estimate over the class. The results of each class and that of all classes will give the total production of the district.

Q.—Do you mean for all industries ?

A.—For what may be called uniform cottage industries, such as, weaving, etc., it would hold ; but, in the case of any large industry, intensive enquiry will have to be made separately.

Q.—But if you want to ascertain production instead of obtaining it from the classes would it not be better to get it from the geographical area, to study villages and towns and to make rough estimates of production for each village and town ?

A.—The distribution of occupation varies very considerably from village to village and therefore an estimate based on intensive enquiry in selected villages would not be likely to be accurate.

Q.—Do you consider the present agricultural statistics quite reliable ?

A.—The statistics of agriculture I consider approximately accurate. The statistics of the yield depend on the local estimates of the Revenue Surveyor, Inspector and Superintendent of Land Records from year to year, and may be considerably out.

Q.—Suppose you introduce the element of value for production instead of quantity and find out the value of productions, is it possible from the information at present available and from recorded prices to do it easily ?

A.—Yes, that can be done.

Q.—You must do it for a number of years—for 5 years past.

A.—The past year, yes.

Mr. Kaul.—**Q.**—You will probably be able to tell us whether you have any unclassified forests in this province which are in charge of the district officers.

A.—Forest administration is in the charge of the Forest Department.

Q.—Is no part of the forest in charge of the Revenue authorities as in other provinces ?

A.—Not so far as I know.

Q.—Talking about minor crops, I suppose the surveyor now makes a report of all crops grown in the village ?

A.—Yes.

Q.—But he does not make a return of any unusual crop to the authorities ? He lumps together the unimportant crops with the other crops.

A.—I believe a surveyor returns a crop in detail but of that, I am not quite certain.

Q.—But in the Provincial Season and Crop Reports, the details do not appear ?

A.—The crops are grouped in very great detail, as will be seen from this " Season and Crop Report of Burma ".

Professor Burnett Hurst.—Q.—That is the area ?

A.—Yes.

Q.—When you come to the yield it is a different matter ?

A.—Yes, only under the more important crops.

Mr. Kaul.—Q.—There are these, for instance, " other grains and pulses ".

A.—Yes, look at the total.

Q.—So, under these heads, they group the crops which they consider minor. I want to ascertain whether this is done in the provinces by the surveyor ?

A.—I am not aware.

Q.—You think the surveyor sends in a complete return ?

A.—I think he sends in a more detailed account than the final report.

Q.—Then, if we want to get every detail of the minor crops, all that would be necessary is that these returns which are prepared by the surveyor should be published in detail without grouping the less important crops under the head " other " ?

A.—That is, supposing I am correct in my idea that the surveyor submits his detailed report.

Q.—Even then it would include the minor crops.

A.—All crops are shown in the supplementary survey map.

Q.—Has he the material from which to prepare it ? And, about dairy and other unimportant products, to you say that no useful result would be obtained in Burma ? Is it because the production is insignificant ?

A.—Usually dairy products such as butter, milk and cheese are practically not produced in Burma by the ordinary cultivator.

Q.—Are there special classes like our Gujjars ?

A.—Indians produce milk in the neighbourhood of towns and large villages to a considerable extent, but usually do not own land.

Q.—Is the production of milk considerable ?

A.—Oh, yes. All our large towns have to rely on them for their milk supply.

Q.—Suppose we had arranged for getting statistics of the production of milk, would it be necessary to rely on the town authorities or would it be included in the rural area ?

A.—Milk is generally produced in rural areas adjacent to towns.

Q.—Would it have to be done by some rural agent ?

A.—Probably.

Q.—Would it be possible for the Revenue Surveyor or any other local agent to obtain the figures of the annual production of milk ?

A.—No.

Chairman.—Q.—Not even approximately, only roughly ?

A.—No.

Mr. Kaul.—Q.—As regards agricultural labourers you have said here. "The ascertainment of periodic variations in the rates of wages for agricultural labour will be a matter of much difficulty.....". Could not the figure be obtained periodically by an intensive enquiry ?

A.—Yes.

Q.—You have in the past obtained figures of wages in the rural areas ?

A.—Yes, but I understand the intention is not to obtain figures by an intensive enquiry.

Q.—Not to do it ?

A.—It is much too expensive.

Q.—Is it intended to substitute anything else for it ?

A.—I understand the idea is that periodical figures should be obtained from the statistics regularly recorded by the existing staff.

Chairman.—Q.—Not existing, but additional staff.

A.—In that case an intensive survey would not be necessary.

Q.—You think the figures could be collected by additional staff ?

A.—It is possible to get any data with the help of sufficient additional staff.

Professor Burnett Hurst.—Q.—Will they be of any value ?

A.—It depends on the nature of the figures and on the staff employed.

Mr. Kaul.—Q.—Some of the larger fisheries are leased from year to year. Would it be possible to make it a condition that the lessees should send in a return of the total catch ?

A.—Yes, it would be possible to make a condition in the lease, but I do not think that figures thereby obtained would be to any extent reliable. It is to the interest of the lessees to minimise their catch.

Q.—Yes, but it would not be possible to apply other checks to it ?

A.—No.

Q.—As regards the open fisheries which are not leased ?

A.—They are always in the area of one village or another.

Q.—Would it not be possible to get rough figures from the local headmen ?

A.—No ; no figures of any value whatever

Q.—Would they not tell you ?

A.—The statistics might be out by 300 per cent.

Professor Burnett-Hurst.—Q.—Do you think it is possible in urban centres like Rangoon to carry out a detailed enquiry into the economic condition of the people ?

A.—Yes, if a sufficient staff is employed.

Q.—Is it only a question of staff and must it be a trained staff ?

A.—Yes.

Q.—You will require a well-paid and well-trained staff and a considerable number of men ?

A.—Yes.

Q.—Is it a fact that comparatively few Burmans have taken to higher studies in economics ?

A.—I think that is probably a fact.

Q.—Then, what agency would you employ ? If there is a very heterogeneous population, as you have in Rangoon, what agency would you employ for your investigations ? Have you any suggestions to make ?

A.—No.

Q.—Are there any parts of the city, which are populated by a particular class, say, Chinese in a particular quarter and Madrassis in another quarter ?

A.—In certain areas certain classes predominate, but in every area, so far as I know, the population is very mixed.

Q.—So that your investigator if he is to be successful would have to be acquainted, not only with the language of the people with whom he would come into contact, but also with the customs of these different classes ?

A.—Yes.

Q.—Would it be a very difficult problem to carry out the investigation in Rangoon ?

A.—Yes, also in other parts of Burma. The problems are heterogeneous and the population is heterogeneous.

Q.—Are you acquainted with other provinces of India ?

A.—No ; but I understand in India the occupations are much more specialized.

Q.—In Burma they seem to change their occupations more frequently. The question of the comparative intelligence of the Burman and the immigrant population is a very difficult one ?

A.—The Burman is more intelligent on the average than the immigrant population.

Q.—He is more intelligent ! Then I take it that you ought to be able to obtain more accurate information from the Burman than you would from persons of other provinces, even Madrassis ?

A.—The immigrant population in Burma is, for the most part, of the coolie class.

Q.—For the purpose of statistical comparison, it has been suggested that the data obtained in different parts of India might be used for purposes of comparison with other countries. Do you think that it is at all possible to compare the economic condition of the people of Burma with that of the inhabitants of Western countries ?

A.—It depends on what is meant by " economic condition ".

Chairman.—Q.—Income ?

A.—Oh, yes. It is possible to compare any figure with any other figure but it is impossible to compare what that figure represents with what is represented by the other figures.

Professor Burnett Hurst.—Q.—Would you say that international statistical comparisons are largely vitiated by the different conditions of the countries compared ?

A.—Yes.

Q.—That is to say, a mere figure of the income per head means nothing, and such a figure is rather dangerous and misleading.

A.—Quite.

Q.—I take it from your replies to the questionnaire that you would approve of intensive studies of the economic condition of the people, (interpret that as you like) being made in selected areas and provided you have a well equipped and well paid staff.

A.—Yes, with a view to estimating the average income from the economic condition of a class and furnishing basic figures to which periodical statistics could be afterwards applied.

Q.—That is to say, the question of investigating the condition of the various classes is fundamental. You could not group together persons of all classes and try to arrive at a result.

A.—No.

Q.—You have dealt with agricultural classes. Would you give us some idea as to what classes you had in mind when you referred to urban areas ? Would you say the unskilled labourer, the skilled labourer and the clerk ?

A.—It is not worth while separately recording it.

Q.—The clerk is in a class by himself ?

A.—He is not of sufficient importance to be taken into consideration as a class in estimating the entire urban area.

Q.—It is necessary to ascertain the economic condition of the clerk, because, just as in Western countries, there are clerks who are badly off as compared with other classes of skilled workers ?

A.—Yes.

Q.—And, a man who has to wear a black coat has a harder struggle than the navy ?

A.—Yes.

Q.—Looking at it from that point, if the money was available and if you secured the staff, it might be useful to make such an enquiry ?

A.—Yes for the purposes of employers like Government.

Q.—Now, you mentioned that it may be advisable to select a typical group in each village.

A.—Yes.

Q.—How would you determine a typical group ? Is there not the danger of having selected what you would regard as typical while the man in the street might not regard it as typical ?

A.—Yes. Quite so.

Q.—How would you overcome that difficulty ?

A.—That cannot be overcome. The object of my selecting a typical group was to obtain basic figures to which periodical statistics would afterwards be applied. The basic figures obtained would be, relatively, sufficiently accurate for the purpose of estimating, and for the purpose of application subsequently to the classes.

Q.—Could you give me a rough idea as to what you would regard as the basic figures for the unskilled labourer in Rangoon ?

A.—The unskilled labourer I should take is the coolie. I should take as the basic figures food, clothes, and housing.

Q.—Housing is very essential ?

A.—Yes.

Q.—Under housing, I suppose you include not only rents but accommodation and the size of the rooms ?

A.—It is impossible to get periodical figures.

Q.—I do not suggest periodical figures in this case but in a special investigation.

A.—Yes. But, for the purpose of obtaining basic quantities, I should take food, rents and so on.

Q.—Government contemplates establishing a Labour Office in Rangoon in the near future. Do you think that intensive study into the condition of definite classes of labour carried out by the Labour Office would be valuable ?

A.—Yes ; for the purpose of this economic enquiry it would be of great value.

Q.—And gradually with the development of that office, the nature of their work and the sphere of action can be extended ?

A.—Yes.

Q.—So that in course of time, assuming normal growth and development, such a Labour Office could be developed into a valuable institution

for the collection of economic and statistical data relating to labour. Are you of opinion that family budgets as collected by the Bombay Labour Office and as the Labour Office here, I understand, contemplate collecting would be of much use ?

A.—Yes, I think the information may serve the purpose of an intensive enquiry in order to obtain basic figures of quantity and so on.

Q.—Would you not have to collect a very large number of them ?

A.—Yes.

Q.—What proportion of the households in a ward would you have to study in order to secure a rough idea or to get approximately the truth ?

A.—I should divide it into classes.

Q.—Suppose for a particular class there are 1000 households ?

A.—I should say 5 per cent.

Q.—Now, rather than go to the individual family or what is called the typical family, would it not be a better method to take what is known as a random sample ; that is to say, number the households 1 to 1000 and visit every 20th ? Then you are likely to get the good, bad and indifferent.

A.—Provided your class is uniform.

Q.—Assuming that you have all the persons belonging to a particular class in a particular area—which is a considerable assumption, I admit—out, assuming that to be the case, and, if, in fact, you took a random sample, would it not be more valuable than taking typical families, figures for whom may be disputed by the man in the street ?

A.—Yes, but random samples would have to be considerably more numerous than 5 per cent.

Q.—What proportion do you think is necessary ?

A.—20 per cent. probably, at a guess, in order to give a chance to the law of averages.

Q.—In the enquiries conducted by Dr. Bowley and myself in industrial centres in England we found that the proportion of 1 in 20 sufficed.

Chairman.—Q.—By what agency is milk brought into the town ?

A.—By people known as *dudh wallas*.

Q.—Not by rail ? What I am trying to drive at is, if it is possible to get the total production from the railway traffic returns.

A.—I do not think so. It is carried in by carts, coolies, boats and in every possible way.

Professor Burnett-Hurst.—Q.—Is fruit consumed in considerable quantity by the people in Burma ?

A.—Yes, to a considerable extent.

Q.—A number of persons have attempted to estimate the wealth of the country on the basis of statistics of production and they have merely utilised the official statistics that have been published. As there are no statistics of minor crops, fruit, fish, etc., they made rough guesses. In order to enable some rough estimate to be made of the wealth of this country, it has been suggested that, rather than try to ascertain the

wealth directly by house-to-house visits, statistics of the minor crops, vegetables, fish, fruit, etc., should be collected, and if fairly accurate figures were published, they would enable one to obtain a rough, approximate estimate of the wealth of the country. From that point of view, it would certainly be an advantage to try to collect the information provided you can secure it fairly cheaply and readily. In your opinion, is it possible ?

A.—On the question of fruit, I have been a Revenue officer and I have tried to estimate the production of the gardens and found it quite impossible.

Q.—Is it not a fact that, in collecting statistics in the Dominions and European countries, you are dealing with a person who is highly educated, who is accustomed to a certain amount of State discipline, who is accustomed to filling in returns for the State, making crop reports and supplying statistics of production generally ? On the other hand, it would be very very difficult to collect similar statistics in this country and would cost much more ?

A.—Yes, the ordinary cultivator keeps no returns of the out-turn of his crops—either the major crops or the minor crops. All the information which you can get from him depends on his memory which is often treacherous.

Q.—Would it be possible for a man to remember his income or production for the previous year, when he cannot very well remember his own age ?

A.—You could get an approximate idea by closely questioning him.

Q.—It would take a long time ?

A.—Yes.

Q.—If a well-trained staff of investigators went to a village and remained a long time there, getting into touch with the officials and others and carried out an investigation, do you think that it would be possible to obtain accurate information by that means ?

A.—As to the conditions for that year and for that village.

Q.—That is to say, studies on the lines carried out by Dr. Mann in "Life and Labour in a Deccan Village" ?

A.—Yes.

Q.—If that is so, what would you pay a skilled investigator ? Do you think Rs. 200 a month would suffice ?

A.—Not less than Rs. 1,500.

Q.—You would have a highly trained man ?

A.—Yes. It is quite impossible to rely on anyone but a man capable of dealing with such a question. What is wanted is a skilled economic investigator who has knowledge of economic statistics.

Q.—And a knowledge of the country ?

A.—Yes. Not every man in the Indian Civil Service would be suitable for this highly technical work I think if you want to arrive at any system of work at all, you want to work in accordance with my last five years' report. You must not aim at anything incomprehensible because that is impossible.

The Honourable Mr. J. MACKENNA, C.I.E., I.C.S., Finance Member,
Government of Burma.

Oral evidence, the 21st April 1925.

(As desired by the witness, the evidence is *not* published).

Mr. J. E. HOULDEY, I.C.S., Chairman, Rangoon Development Trust.

Written Statement.

Question No. 70 (a).—I certainly think that the average sale price noted in revenue returns and revenue surveyors' records or the Registration Office is much the most reliable method of valuation of agricultural land, when such information is available. Where such information is available, I would accept it except in cases where there was obviously something abnormal about the recorded transaction.

(*b*) I would not accept a multiple of land revenue as at all a satisfactory means of valuation, unless no other means such as referred to in (*a*) above were available. My reason for doing so is that, although land revenue may be taken to be a proportion of the profits of land, and although the value of land may be deduced from its profits inasmuch as the proportion of the profits which is taken as land revenue varies from district to district, we have no universal data to proceed upon, and without an examination of the Settlement Report of a particular district it would be impossible to say what multiple of the land revenue the value of the land should be.

(*c*) Local enquiry. I should consider absolutely valueless. No reliance could be placed upon the information received.

Question No. 71.—The only thing to be done with such buildings is to make an estimate of the cost of the materials, to consider the age of the building and deduce the value from these data. It would probably be helpful to select two or three of the village elders and get them to give their opinion as to the value of the building. The one valuation might act as a check upon the other.

Question No. 72.—The value of buildings can, no doubt, be estimated on a basis of the rent, but the difficulty is that part of the rent must be considered as being paid for the site. If accurate information as to the value of the site is available, there will be no difficulty in deducing the amount of rent which must be allocated to the site, and the balance may be allocated to the building. The difficulty is that land and buildings are always sold together, and so it is not possible to say with any degree of accuracy how much of the sale price should be apportioned to the land, and how much to the buildings. Possibly, therefore, the fairest way for general purposes is to make an estimate based on a rate per cubic foot, measuring from plinth to roof. A variation of this method is to make an estimate at so much per square foot per storey.

Question No. 73.—No. Such an enquiry would be universally resented by every one.

Question No. 74.—I certainly do not think that such replies would be reliable.

Question No. 75.—I do not think that rough estimates would be of much value. In Question No. 62 attention is drawn to the diversity of figures as to the annual income of India given in Appendix I. The rough estimates suggested in Question No. 75 would, to my mind, lead to a similar diversity in any statistics which it was sought to compile from them.

Question No. 81.—Having regard to the customs of the people, I think that a certain amount on account of religious and social ceremonies might reasonably be included in the items of expenditure in a family budget. The other items mentioned should not be included.

Question No. 107.—Yes.

Question No. 108.—I should think it highly improbable.

Oral evidence the 22nd April 1925.

Chairman.—Q.—May I ask you what your special experience has been in connection with the study of the economic conditions of the people of Burma ?

A.—I think that possibly my name was sent up before it was quite realised what was the particular information this Committee desired. Strictly speaking, I do not know that I have had any special opportunity of studying economic conditions. Of course, I have done a certain amount of district work, but I have been in Rangoon for the last ten years as District Magistrate and in other capacities. For some time I was President of the Municipality.

Q.—What is your attitude towards this economic enquiry ? Are you in favour of such an enquiry ?

A.—I do not know that I am entitled to express an opinion on the subject. My own feeling is rather that it seems to me that it is going to cost a lot of money. It will be an expensive proceeding.

Q.—What makes you think so ?

A.—Looking through the Questionnaire and seeing the information required, it seems to me that the machinery for collecting it will be expensive.

Q.—Do you know what the last Census cost per thousand of the population ?

A.—No.

Q.—I may tell you it was about Rs. 15 per thousand of the population. Supposing the census of production costs Rs. 50 per thousand of the population, would you regard that as expensive. Would not that be a very good investment to study the economic conditions and watch the trend of affairs with an eye to improving the condition of the people of the country ?

A.—Certainly, if reliable information could be obtained, it would undoubtedly be useful and valuable.

Q.—You have seen that we have mentioned certain tests for ascertaining the economic conditions of the people. Under what heads would you consider an investigation necessary, and under what heads do you think such investigation should be optional ?

A.—I do not know that it would make very much difference if you are going through them all, except that the last three ought to be taken up as early as possible—the cost of living, wealth and indebtedness, but this is only my own opinion.

Q.—Of course, wages are very important. You are starting a Labour Office, I understand ?

A.—Yes.

Q.—What is your view as to the income per head and wealth per head usually given for other countries ? For instance, the national wealth has been estimated for the United Kingdom, America and Canada among other countries. Do you think that such an estimate is necessary for Burma ?

A.—It is necessary if you can get reliable information. But I gathered from question 62 that the information is not reliable.

Q.—Assuming that we get information as fairly reliable as you get in other countries, you would have no objection ?

A.—Not at all. But unless you are going to get fairly reliable results, I do not think that an elaborate expenditure would be justifiable.

Q.—Have you heard such a statement in regard to any other country ?

A.—No.

Q.—What is the state of information about the production of the province ? Supposing you were asked to give us the value of the total production in Burma, could you do it with the existing statistics—agriculture first, industries next, then fisheries, forests and minerals, etc. ? To what extent would the present statistics enable you to give information ?

A.—I am afraid I am not in a position to answer the question. I have not handled the statistics except for a short time.

Q.—You have no improvements to suggest in regard to the agricultural statistics of the country ?

A.—There again I have not had to do with that for some time.

Q.—Assuming that Government order an economic survey and you were asked to carry it out, what agency would you employ for collecting information in regard to production ?

A.—Generally speaking, I think, like everything else, it would have to be done by the district officers and the unfortunate Deputy Commissioner. As to the details, I should not like to express any opinion.

Q.—Would you use the village headman and accountant ?

A.—In Burma you would have to use your village headman.

Q.—And the village accountant ?

A.—Well, I do not think so. We have not got a village accountant here. The headman is the person to whom the district officer sends for all his information.

Q.—He prepares the accounts also ?

A.—He does not prepare any accounts.

Q.—Who does the figures ?

A.—He might collect the figures and so on, but anything in the way of accounts is done in the District Office.

Q.—The village headman has to report the primary figures ? He collects the primary information ? In British India you have a village accountant to help him.

A.—There is nothing corresponding to that in Burma.

Q.—Assuming that an economic survey was ordered for this province and Rangoon also had to furnish information, would the Municipality be willing to pay the cost ? Would it be reasonable to ask the Municipality to pay the cost ?

A.—If such an enquiry were only an occasional enquiry, say, decennial, you might be justified in asking the Municipality to bear the cost.

Q.—If it is a quinquennial one ?

A.—Even if a quinquennial enquiry was considered necessary, it may be justified.

Q.—If you wanted a small staff from year to year to note the variations in the figures, would you put that also as a charge on the Municipality ?

A.—I think if you are going to do that, it would be imposing rather a big burden upon the Municipality and I think it would be a little hard to call upon them to undertake the costs every year.

Mr. Kaul.—Q.—You said that the three things you would take up first in ascertaining the economic condition of the people would be “ cost of living,” “ wealth ” and “ indebtedness ” ?

A.—Well these are subjects upon which it would certainly be essential to have information. The others are equally essential, but possibly if I conducted the enquiry myself I would start upon these, because I think them more interesting.

Q.—In order to judge whether the cost of living is too high or too low, you want to know what the income is ? The cost of living figures would give no indication except with reference to the income.

A.—And also the prevailing standard of living in every place.

Q.—If a man was earning Rs. 10 and spending Rs. 12, he would be very badly off ?

A.—That would not affect the cost of living, would it ?

Q.—But you want to ascertain the economic condition of the man, you want to know what his cost of living is with reference to his income.

A.—Yes, his personal costs of living. I beg your pardon, I was thinking of the cost of living generally.

Q.—Then you want to ascertain the income ?

A.—Certainly, yes.

Q.—Is not production a more important factor in ascertaining the economic conditions of the people ?

A.—They are all important. When I suggested that I would start with these three, it was purely a personal expression of opinion, to which I do not attach any importance.

Q.—You do not want to ignore the others ?

A.—No, not at all.

Professor Burnett-Hurst.—Q.—As Chairman of the Development Trust, have you collected any information relating to rents and housing conditions in Rangoon ?

A.—We have a certain amount of information but it has been acquired more or less casually. We have not expressly set out to collect it, but in the course of my ordinary work, I do get a certain amount of information on the subject, but I do not look for it.

Q.—Does that relate to any particular class of person ?

A.—Oh, no.

Q.—The information is collected generally and quite casually ?

A.—Yes.

Q.—In the course of your administrative duties ?

A.—Yes, a certain amount of information comes to me.

Q.—Do you think that it would be possible and advisable to collect such information regularly for administrative purposes ?

A.—You mean information as to rents and housing ?

Q.—Yes.

A.—It would not help the Development Trust in the discharge of its administrative duties, but it would no doubt be useful to the administration generally. It would not be of any particular help to my Department.

Q.—Would it be of help to the Municipality ?

A.—I should think so. After all, their activities cover the whole range of civil administration and it must be of help to the Public Health Department for instance.

Q.—You were Chairman of the Municipality for some years ?

A.—For one year.

Q.—Did the Municipality collect information relating to rents for assessment ?

A.—Yes, for the purposes of assessment.

Q.—So that one could get fairly complete data regarding the rents of houses from the Municipalities ?

A.—They should, and in fact they do have assessment registers which record the rental value, sometimes based on rents actually paid and on other occasions on the rent of similar houses in the vicinity.

Q.—They must have complete records of them for a series of years ?

A.—As far as I remember they revise one-fifth of the town every year. The whole city is revised once every five years.

Q.—Can you give me a rough idea as to how far back these records have been compiled ?

A.—No I could not. I think the Municipality came into existence in 1872, so far as I remember. Probably the records go back very nearly to that date.

Q.—Would the information obtained be sufficiently reliable to ascertain the increase in land values ?

A.—Well, your difficulty would be that although, of course, you could deduce the value of the property from the rents paid, you have often got to divide it up into the rent of the land and the rent of the house. As soon as you look at the buildings you can find out your present valuation, but you could not get the past values. You would not have anything with which to compare it.

Q.—If it was decided to make an intensive study into the condition of the town or city, would it be possible to identify particular wards with particular classes of the people ?

A.—To a large extent it would. Certainly you will find in an area called Lanmadaw practically nothing but Chinese with a sprinkling of Indians. Then when you come to Kemendine you get nothing but Burmans. In other parts of the town, in Botataung town, you get nothing but Indians of different communities, that is, roughly speaking. In the Burmese quarter, you get some Indians and Chinese, and so on. But you could classify the town roughly according to the majority of the people living in a particular area.

Q.—In a city like Rangoon it would be extremely difficult to investigate conditions because of the heterogeneous character of the population ?

A.—It is extremely heterogeneous because a good proportion of it is practically floating.

Q.—Floating in a practical sense ?

A.—I do not mean that. It is floating in the light of the fact that a lot of it is migratory. They come for the working season and then they go out again. Of course, although Rangoon is the capital of Burma, only something like 30 per cent. of the inhabitants are Burmese. There are, so far as I remember, more Hindus in Rangoon than there are Buddhists.

Q.—Because of this migratory population, the difficulty of carrying out an economic investigation would be considerably increased ?

A.—I should say certainly. With this large migratory population you would find very great difficulty in getting reliable information at all. During the last Census I was President of the Municipality and was responsible for census operations. They wanted us to try and classify this migratory population into people who had just come over for the season and people who intended to stay for a few years and go back. I tried to do that once or twice when inspecting the work of the Supervisors, etc. The person selected was an owner of rickshaws. He was asked whether he had come for the season or whether he was going to stay for a few years. Of course, he would not tell us anything. He said, 'How can I say ?'. This is the sort of information you would get from large numbers of the population of Rangoon.

Q.—As you were the Chairman of the Census Committee you can tell us whether you found it was difficult to get investigators of the right type for the purpose of investigation ?

A.—They were all voluntary workers. Although I never personally put it on record, I think these Government clerks in Government offices

should not be called upon to do that, or they should be paid for it. If they were paid, you would get very much better work done.

Q.—Work suffers by its being done by unpaid workers ?

A.—I should say that it would be very badly worked. Apart from the Assessor of the Municipality who was placed on special duty, the rest of the establishment was unpaid and we found it extremely badly worked, the work being done by unpaid and discontented people.

Q.—Should enquiries into wealth and income be undertaken, do you think you would get the services of unpaid persons ?

A.—I would certainly not suggest that.

Q.—Would you have to employ a highly trained staff of skilled investigators ?

A.—If you want to get results of any value you would have to do that with a paid staff. If you had an unpaid staff they would go and ask the questions and probably receive absolutely worthless replies and they would make no efforts to extract further information.

Q.—Can you tell me the financial condition of the Municipalities, District Boards, Council Boards, and Circle Boards of Burma generally ? Are they well off financially ?

A.—I do not know anything about District Councils or Circle Boards ; at least, I have not sufficient information or information of any value. I had to investigate the financial condition of Municipalities about four years ago and I found that they were not well off. In fact they are badly off.

Q.—Excluding Rangoon ?

A.—Excluding Rangoon. Excluding Rangoon, they are unable to really furnish the amenities which I imagine most of them would like to provide and which they certainly ought to provide.

Q.—If they had to finance an enquiry of this nature, would they resent it ?

A.—I think they would.

Q.—I notice in your answer to question No. 73 relating to an enquiry into private wealth, you say that such enquiry would be universally resented by every one ?

A.—I think so. It would also be regarded with grave suspicion. I should say that the average Burman, at any rate, would at once imagine that this enquiry preceded some fresh form of taxation, and the source of information would at once dry up, or else the person questioned would represent himself to be on the extreme verge of destitution.

Q.—So that your results would not be reliable ?

A.—Yes, that is my own opinion.

Q.—You do not think it desirable to undertake an enquiry into wealth ?

A.—I should say ' No '. I have always found that any enquiries on that line are received with great suspicion and the answers that one gets are absolutely incorrect. Something is kept back.

Q.—Would you experience the same difficulty in investigating incomes?

A.—I should not like to say, but I should say you probably would.

Q.—Do you happen to know whether income-tax collectors of this city experience difficulties in getting information?

A.—I could not say. Years ago, as Sub-divisional officer, I had to do local income-tax assessments. I found that every small industry in the town had been run at a loss for years. That was the information placed at my disposal.

Q.—You mentioned the cost of living as a possible subject for investigation? How would you proceed to ascertain the cost of living of the people of Rangoon city?

A.—That is rather a large order.

Q.—Would you do it by family budgets?

A.—I am afraid I probably confused general costs of living and personal costs of living. Well, one would have to take family budgets.

Q.—Owing to the heterogeneous population here, and owing to the differences in food consumption, you would have to take a very large number of budgets, relating to a large number of classes?

A.—Yes, and owing to different standards of living.

Q.—Would you like to suggest any figures as to the proportion of budgets that could be taken to get fairly accurate results?

A.—Percentage of actual population? I would not like to offer any information upon that subject without further consideration.

Q.—Do you think that family budgets may be misleading?

A.—I think any information you get will be far from reliable.

Q.—There may be a considerable amount of error?

A.—Certainly.

Mr. A. McKERRAL, M.A., B.Sc., Director of Agriculture, Burma.

Written statement.

Question 1 of the questionnaire.—We have to consider whether such enquiries are (1) useful (2) administratively feasible. With regard to (1) I am not in a position to say whether all these heads are of equal importance. With regard to (2) I do not consider that a complete census of wealth and indebtedness is administratively possible. It could be conducted only with great expense, would be certain to arouse opposition among the people and the results would be of doubtful accuracy. I do not think that even in advanced countries, unless in America, a direct census of wealth is ever attempted. Estimates by economists and others are made by indirect means such as the capitalization of income. In the case of indebtedness we already possess, in so far as agricultural indebtedness is concerned, a very considerable amount of information in the published settlement reports but no attempt at a complete census has ever been made.

In the case of wages, income and cost of living it is doubtless important that present methods of reporting statistics concerning these should be improved but I regret that I have no experience of these matters and I am unable to make any suggestion. I shall, therefore, confine myself to making a few remarks on production.

Question 3.—In the case of Burma, the Shan States and Northern Hill areas form a great tract of territory which has physical conditions different from the rest of Burma. I would constitute this a separate tract making three in all, *viz.*, Lower Burma, Upper Burma and the Shan States.

Questions 5, 6 and 7.—In this Province the Director of Agriculture has nothing to do with crop reporting, this work being done by the Commissioner of Settlements and Land Records. I understand that in the case of rice in Burma, there are very considerable discrepancies between Government estimates and estimates by commercial firms. During the years 1916-19 the Agricultural Department attempted to do a certain number of crop cuttings but it was found that the number which the staff could accomplish gave quite inadequate data on which to base anything like accurate results. These crop cuttings by the Agricultural Department's staff have now been discontinued with the exception of a few per annum of the sugarcane crop which are being done at the request of the Government of India. Of the three factors involved, *viz.* (1) acreage (2) normal outturn (3) "condition figure", (1) can be depended on as a very large Land Records staff is maintained to check the survey and record the acreages. In the case of (2) dependence is placed mainly on the results arrived at by crop cuttings by the settlement officers and on their local enquiries during the course of the Settlement. An attempt might be made to estimate actuals by a scrutiny of the returns of railways, mills, etc. as recommended by the late Mr. Stuart in his note to the Board of Agriculture in 1919. In the case of *rice* this of course would not be an easy matter because we have to assume a figure for internal consumption and this figure is liable to a considerable error. The only actuals which can be determined with any degree of accuracy are the figures for export. In the case of

cotton it would probably be more easy to attempt to determine actuals as most of the cotton crop in Burma passes through the large and small ginneries. This, however, would entail compulsory reporting on the part of the ginneries and implies also the keeping of accurate figures. All the larger ginneries of course keep figures but many of the smaller ones do not. Returns of ginneries were formerly submitted to the Director of Statistics but these have now been discontinued by order of the Government of India. In the case of oil seeds—groundnut and sesamum—it would be very difficult, if not impossible, to obtain actuals in this manner because considerable quantities of these are converted into cake and oil in numberless small village mills.

In the case of the minor crops mentioned in question 7, I do not see any reason why figures for yield could not be obtained provided the necessary staff is employed, but the addition to the present staff would be large and it is doubtful if this would be worth while doing. In addition to crop cuttings which can usually be done on a limited scale only it would be useful if an attempt were made to compute actuals in definite tracts. During settlement operations each district is divided into fertility tracts and if one typical village area were chosen in each of these tracts and an attempt made to ascertain the total actual production in the village area than this area being accurately known this would give a fairly accurate idea of the total production of the fertility tract and so of the district. These typical villages might also be used for holding other enquiries suggested in this questionnaire, *viz.* wages, income, cost of living, etc.

In the case of the estimation of "condition figure" in connection with the preparation of forecasts I consider that the Agricultural Department might help in this matter by making a detailed study of forecasts on a definite area of each of its principal experimental or seed farms. Fluctuations in yields from season to season in various crops are due mainly to rainfall, cattle disease, epidemics among the human population and insect and fungus attacks. Of these the first is by far the most important. The others operate in more or less limited areas and can be allowed for. I consider, therefore, that as "condition figure" is almost entirely due to rainfall studies of the correlation between the actual yields from definite areas and the total rainfall for the season or rainfall for any particular month or months would tend to throw a great deal of light on the matter. When such studies have been taken up it will be possible for the staff of the Agricultural Department to advise in this matter and their assistants could be made use of in a much more profitable way than by employing them in conducting a very small number of crop cuttings.

Questions 10, 11 and 12.—Of the products mentioned, *meat* is largely sold at the bazaars and it is possible that some estimate of the total quantity might be made by getting bazaar "gaungs" to keep records and produce statistics. In the case of *wool* I think that this is mainly exported from Burma and figures should be available from the Customs. The same remarks apply to *bones* but the export of *bones* represents only a small proportion of the total that might be available. In parts of the country remote from the railways I think that little or no collection takes place. *Milk* is produced mainly near the larger cities and towns. Burmans in the jungle do not, as a rule, drink milk. Even in the case of large towns the estimate would be very troublesome to make. Similar remarks apply to *cream*, *butter* and *ghee*. I know of only one Burmese *ghee* industry. This is in

Sagaing district located in a few villages only and an enquiry on the spot would probably enable a rough figure of production to be obtained. To estimate the production of *eggs* and *poultry* I regard as hopeless.

Organisation.

Question 102.—There is certainly a great need in this Province for an officer possessed of the necessary statistical and economic knowledge who could analyse and arrange the large amount of material at present contained in settlement and other reports of Government. Unless, however, Government decides to proceed with an elaborate economic enquiry the necessity for a new organisation would not appear to exist. The existing staff of Government are accustomed to the collection of statistics of various kinds and all that it would appear to be necessary is a fully trained and qualified expert at headquarters to work up the material collected locally. Such an officer, however, should not work “in vacuo” but should be attached to some existing office as the difficulties connected with the collection of statistics in this country are only known to officers possessing administrative experience.

Oral evidence, the 22nd April, 1925.

Chairman.—*Q.*—For how long have you been Director of Agriculture ?

A.—For three years.

Q.—What have been your opportunities of studying the economic condition of the country ?

A.—I am afraid I have had very little to do with the economic side of agriculture. I have mainly considered the experimental side.

Q.—Crop experiments ?

A.—Crop improvements.

Q.—Do you employ any special method of rice cultivation, any system of sowing by measurement ?

A.—Yes, we have that. We have an experimental farm at Hmawbi, which is 25 miles from Rangoon. We have another farm at Mandalay. These two farms are engaged in rice experiments.

Q.—As a result of your experiments have you been able to increase the production of rice per acre ?

A.—Our attempts so far have been largely with regard to its improvements in quality. Burma rice is rather inferior in quality and that has been the first problem to be solved.

Q.—Are you sowing seeds imported from Japan and other countries ?

A.—We are concerned with improving our own varieties.

Q.—It is your ideal for the present to improve the quality of the output.

A.—That was the first problem but we are tackling other problems, such as cultivation and manuring.

Q.—Are you concerned with improving any other crops in Burma ?

A.—Yes.

Q.—What other crops ?

A.—Cotton, ground nuts, sesamum and Burma beans.

Q.—With regard to question No. 1 you say “ I do not consider that a complete Census of wealth and indebtedness is administratively feasible.” You mean that a census by individual canvass is not possible ?

A.—Yes, a complete Census.

Q.—You have no objection to make it by the inventory method ?

A.—You mean by sample villages ?

Q.—That is a separate question. By taking agricultural statistics of the district, for example, the number of houses and all that—the inventory method as they call it ?

A.—I do not know whether it is feasible or not. I am not an economist.

Q.—You say “ It could be conducted only at great expense—would be certain to arouse opposition among the people and the result would be of doubtful accuracy ”. Why do you say the mere collection of information would be of doubtful value ? Would not such information relating to the economic condition of the people help in shaping the policy of the Government and would it not lead the people to improve themselves ?

A.—That means that they will have to be educated up to it.

Q.—Education must come first ?

A.—Yes.

Q.—Because there is not sufficient education in the country, you do not consider that information of economic value would be of much use to the people ?

A.—Not at present.

Q.—What do you think would be the cost of a complete census per thousand of the population ?

A.—I have no idea.

Q.—If it is very expensive, you consider it is not desirable to undertake it ?

A.—Yes.

Q.—Why do you think it would arouse opposition among the people ? Of course, an enquiry about their wealth might.

A.—I think the people resent being asked questions about their private incomes. In every country it is so. In European countries the direct method is not employed.

Mr. Kaul.—Q.—You are not opposed to an enquiry by direct methods ?

A.—I am not opposed to it. The only question is—is it feasible ?

Q.—If it was possible you would not mind it ?

A.—I think that the idea is to measure the productivity of the country by taking the wealth at one period and then comparing it with the wealth of a subsequent period. This would be most useful information but the question is whether it is feasible at present. I do not think it is. :

Chairman.—*Q.*— You have heard that in Australia, they have taken a house-to-house Census and collected information.

A.—I do not know.

Q.—Supposing we wanted to know the total amount of agricultural production in the province, would you as the officer in charge of agriculture be able to give us any reliable figures now ?

A.—We have estimates for some of the principal crops.

Q.—But could you make a rough estimate of the whole of the production of the province ?

A.—I do not think so.

Q.—Have you ever made an attempt ?

A.—No.

Q.—For what crops are values of production available—*i.e.*, the total value per annum ?

A.—We have the figures for rice, cotton, ground-nuts, and sesamum.

Mr. Kaul.—*Q.*—You actually work out the values of these ?

A.—It is done by the Settlement Commissioner whom you examined yesterday.

Q.—If you know the yield per acre you can work it out ?

A.—The estimates are published of all this.

Q.—The value ?

A.—No, quantity.

Q.—The forecasts you mean ?

A.—Yes

Q.—You are in favour of intensive enquiries, under all the heads we have mentioned, in the outlying villages or towns, for ascertaining the wealth, cost of living, indebtedness and other tests of economic conditions ?

A.—I am afraid I do not know how much it would entail and whether it would be feasible or not. I said in the beginning of my note that it was desirable if officers can be found to do it.

Q.—What is your attitude towards this economic enquiry. Do you think it is necessary or not ? What is your general attitude as an administrative officer ?

A.—I think the best thing at present would be to improve the statistics which are now being collected.

Q.—In what direction are they capable of improvement ?

A.—That I cannot say. That is for the experts to decide. I made a suggestion in connection with the production. I think the production might be improved by an attempt to get the actuals especially of village tracts. With regard to the wages and income, I have no experience and I should not like to make any statement.

Q.—Who takes note of the economic conditions of the province specifically ? Which officer is in charge of the class of work in the province as a whole ? Who looks after all matters of economic significance ?

A.—As far as agriculture is concerned, it is the Settlement Officer who publishes the annual Season and Crop Report, which, I think, is the most reliable publication we have here.

Mr. Kaul.—Q.—In respect of agriculture only ?

A.—Only.

Q.—No other kind ?

A.—That I do not know.

Chairman.—Q.—You say that the necessity for a new organisation would not appear to exist. Would the present organisation cope with the work, supposing we wanted complete production statistics ?

A.—We have a large and well trained Land Records Staff and I think if we had one trained statistician it would be an advantage. We have at present nobody who is trained in the latest scientific methods of statistics.

Q.—You have a large well trained staff in the Land Records Department ?

A.—Yes. I think we have many mathematicians in Government Service, but so far we have not got any statisticians.

Prof. Burnett-Hurst.—Q.—Are there any statisticians in India ?

A.—I do not know. A few have studied the subject in an amateur sort of way.

Q.—Are not amateur statisticians dangerous ?

A.—They probably are.

Chairman.—Q.—Is that the view held in Burma ?

A.—I do not know. What is required is a statistician trained in the latest methods of Professor Pearson. I, myself, felt the want of help in that way in my experimental farms. In connection with the experimental farms, it is essentially necessary to compute the probable error, in field experiments. We have to make the attempt ourselves in an amateur sort of way. The services of a trained statistician, would be extremely valuable.

Q.—Have the methods adopted on your farm been followed by the cultivators ?

A.—We have a considerable amount of success.

Q.—Have improved methods been adopted by the people ?

A.—Largely in the matter of seed. We have been able to supply the seed of varieties immune to disease. We have had a certain amount of success also in introducing improved methods of sowing crops.

Q.—Do you also make an estimate of the increased yield of rice due to the department's efforts in the year ? Do you record the yield from year to year ?

A.—I do not think we can do that. We make estimates of the area but that, too, is very difficult. It gets beyond the staff of the Agricultural Department proper. We asked the Land Records Department and they were able to make an estimate of the amount of success we have achieved. We have got very accurate figures of the total expenditure—the total receipts and the total expenditure.

Q.—Are any of the farms self-supporting ?

A.—One or two are self-supporting.

Q.—How many such farms are there in the whole province ?

A.—We have five main farms just now and we are about to open three more. The province has been divided into eight circles, with a Deputy Director in charge of each. We have five now open and three more to be opened.

Q.—You have never made any estimate of the value of the agricultural production in the whole province ?

A.—No.

Q.—How many acres are there per head of the population in the province ?

A.—I am afraid I cannot give you the figures off-hand. Speaking with reserve I think there are 4 acres of paddy *per capita*.

Q.—I do not think it is so much, and I think it is one and one third acre.

A.—I think that is it.

Q.—Is there much sugarcane grown ?

A.—It is small. We have about 20,000 acres.

Q.—Are there any large imports of agricultural products from outside for the consumption of the people ?

A.—There is a certain amount of sesamum seeds, I think obtained from the Bombay side. Generally speaking, we are self-contained. There is a certain import of tobacco from Bengal. We export one kind and import another kind.

Q.—What kind of agricultural education have you in Burma ?

A.—We have just opened an agricultural college at Mandalay and we hope to get it affiliated to the University of Rangoon, up to the B. Sc. Degree in Agriculture.

Q.—Do you have any agricultural schools in the districts ?

A.—We have no agricultural schools but we have a certain amount of practical training on the farms. I should say there is one agricultural school which is not run by the Agricultural Department. It is run by the American Baptist Mission in Pyinmana half way between Rangoon and Mandalay. It has been subsidised by the Government. It was started two years ago.

Q.—Would you welcome complete estimates of the value of production ?

A.—I think it would be very important if we had them.

Mr. Kaul.—Q.—You state here that crop-cutting experiments are made by the Settlement Officer ?

A.—Yes.

Q.—Do you consider them reliable ?

A.—Well, I should think they are not highly reliable, but they are the only positive actuals that we have got.

Q.—They are fairly reliable ?

A.—Well, if a Settlement Officer is in a district and he spends three years in the task and does crop cutting for three successive years, he is in a better position than any one else to get at the amounts, he has a large mass of figures and on the whole they are as reliable as in other countries.

Prof. Burnett-Hurst.—Q.—Which other countries ?

A.—I mean our agricultural statistics in general.

Q.—As to yields ?

A.—Yes.

Q.—You suggest they are as reliable as the returns you get from Great Britain ?

A.—I do not know.

Q.—In Great Britain they obtain the actual outturns from the statements made by farmers, by market reporters and agricultural associations.

A.—These farmers get schedules and they send in their statements.

Q.—I am not referring to estimates but to actual yields, where the farmer knows better than most people other than the market reporter.

A.—I only know that about five years ago Mr. Stuart, who was Agricultural Adviser to the Government of India, and who was very much interested in the subject, made a comparison between India and America and he came to the conclusion that our figures of production were as good as those of America. He said that our figures were the finest in the world in regard to production. In a recent conference dealing with the Agricultural Department the late Mr. Stuart's suggestion was discussed. With regard to the yields, the trouble is that you cannot get the actual figures ?

Mr. Kaul.—Q.—I suppose you mean that in the experiments that are made the outturn of the yields is ascertained as correctly by the Settlement Officer as it is done in any other country, including England ?

A.—Certainly. The only element of difference is that while in England they send out a schedule to each farmer and he puts down what his outturn is, here the crop estimator goes and ascertains by actual crop-cuttings the yield per acre of a large number of plots scattered throughout the district. Here we can obtain the total production by multiplying the actual yield by the area. We attempt to get an average here.

Q.—We attempt to get the average yield ?

A.—Yes

Q.—But so far as the experiments are concerned you think that they are about as good as the information received in respect of any particular fields in any other country ?

A.—I say that I see no reason why they should not be.

Q.—You have suggested certain methods by which the yield may be ascertained or checked. For instance, the yield of cotton may be obtained from the number of gins. If we ascertain the production of factories. You would, of course, get information regarding the total amount of work done by the gins, that would be a check upon the total production of cotton but that would not be an absolute method of ascertaining the production.

and we should still have to adopt some method of obtaining the amount of production per acre. It would be a useful check. But would you rather use it as a check or as a primary method of obtaining the production ?

A.—I would use both methods and check one with the other. I think in Burma most of our cotton passes through the ginneries. Of course, our cotton areas are not so large as in Bombay or the Central Provinces. The accuracy of that method would depend upon the ginnery being compelled to submit returns. They were asked to do so some years ago but the order was rescinded.

Q.—You think that the method of crop experiments can be developed ? At present the Settlement Officer carries out a large number of experiments while the district is under settlement. Are the crop experiments continued when it is not under settlement to a similar or smaller extent ?

A.—I do not know at present. But some years ago the Agricultural Department were asked to do a certain number of crop cuttings in districts between the Settlements. The matter was taken up and discussed at a conference of officers of the Agricultural Department held in 1920. This conference unanimously came to the conclusion that the work was useless. The number of experiments which the Agricultural Department could do was so small that they could add no useful information to that which the settlement officer had already obtained.

Q.—The experiments which you make in your own farms, are, I presume, at least a check on the crop experiments in the district ?

A.—I do not think they are at present. Our Reports are published, but I do not know whether the Settlement Commissioner makes any use of those reports or not. The results of the experimental farms are apt to be misleading because they are experiments under particular conditions. I have suggested that definite areas on experimental farms should be marked off and given uniform treatment for a considerable number of years, the actual yields recorded last year and correlated with the rainfall statistics.

Q.—That is a very useful suggestion ?

A.—What I am suggesting is that studies in crop forecasts might be taken in hand by the officer in charge of each experimental station. There have been various methods adopted in Egypt of trying to forecast crop yields, but I do not know what success has been achieved by those methods.

Q.—In regard to actual crop experiments now carried out you make the suggestion that a certain tract should be divided into circles and that a certain circle should be experimented upon, but the whole outturn of that tract should be calculated.

A.—Yes. It would be a check.

Q.—But would that be practicable ? You would probably want a host of enumerators.

A.—Yes, I would suggest that it should be done if it is feasible.

Q.—You select as large an area as possible consisting of two or three or four large fields and hold up the whole village until the outturn has been got in ?

A.—It would be a case of cutting the whole area. It would be checking the yield on the area by careful enquiries.

Q.—You mean an enquiry after the crop has been cut ?

A.—Yes.

Q.—There again would be that element of uncertainty ?

A.—Of course, the biggest element of error is the internal consumption which is difficult to estimate.

Q.—Then you say “ The export of bones represents only a small proportion of the total that might be available. In parts of the country remote from the railways, I think that little or no collection takes place.” Do you mean to say that there is very little value attached to the bones produced ?

A.—Well, but when you consider our cattle population—I do not know what the figures of the cattle mortality are—but when you consider that the total export of bones is about 3,000 tons only and the bones are not used as manure in Burma in any shape or form, there is only one conclusion that you can arrive at and that is that they are wasted.

Q.—No value is attached to them ?

A.—No.

Q.—We should have to value only that portion of a particular produce to which any value attaches ?

A.—Quite so.

Q.—Are any statistics of income returned at present ?

A.—So far as the agricultural industry is concerned, the Settlement Officer makes some enquiries and the figures are published in his settlement returns.

Q.—That is only in respect of the average income of landlords or tenants ?

A.—Yes. Nothing in the way of census or anything of that sort.

Q.—In the case of minor crops you say “ You do not see any reason why figures for yield could not be obtained provided the necessary staff is employed, but the addition to the present staff would be large, it is doubtful if this would be worth while doing ”. Do you really think that the additional staff would have to be very large in order to obtain the statistics of minor crops ? I presume that you are familiar with the system of crop reporting. The Surveyor puts down the crop that is grown on a field or a part of a field, however insignificant it may be, but he does or does not report the figures of the minor crops to his superiors. We have not been able to ascertain whether they are lumped together into ‘ other crops ’. But at any rate, the material is with the surveyor and if he only reports it in so many more columns and if it is published in so many more columns, you would get the information with regard to the area under the minor crops. That would not be very much additional work ?

A.—I cannot say. I have always understood that this was objected to because the surveyors could not cope with the work.

Q.—Surveyors actually take these figures. We have been told by the Financial Commissioner and the Settlement Commissioner that they do it.

A.—But they are not published.

Q.—But the publication of those figures would only mean so much more paper and some more pen and ink and perhaps additional clerical work by the village accountants. If these are the conditions you do not think it would be very difficult to do it ?

A.—I cannot say, I do not know what the Settlement Commissioner said ?

Q.—This is what he said and that is what is done in every province. The man who is reporting the crops takes stock of every crop on every inch of land and he puts it down, whether he puts it in the reports or not. If that is the case the additional work would not be very large ?

A.—Presumably not.

Chairman—*Q.*—Do you consider legislation necessary for the purpose of collecting complete statistics of production, if it is decided to prepare complete statistics ?

A.—I do not know.

Chairman—*Q.*—Are the figures of the cost of production which are published in the settlements reports reliable ?

A.—I should think they are very reliable.

Q.—Do you happen to know the name of the last settlement report that was published ?

A.—One of the latest is Kyankse. It may not be the last but it is one of the latest.

Q.—We have been discussing the question of the accuracy of the figures of yields. In taking your crop-cutting experiments, what proportion of the crops of the district is actually included in the experiments ?

A.—You are regarding me as an expert in this matter. I have no experience myself.

Q.—The Director of Land Records and Settlements stated that a field is selected. How many fields are selected in a district, do you happen to know ?

A.—The Settlement Report gives you the figures.

Q.—That is only for areas under settlement. It does not apply to the province as a whole.

A.—Most of the province is settled.

Q.—Information is obtained for that portion which is in course of settlement, where settlement operations are actually being carried out, but does it apply to areas which are still to come under settlement or which have been settled for a period of years ?

A.—I do not know what crop cutting is done between the settlements.

Q.—You get certain figures from your settlement reports of that area. I want to know whether those figures are up to date or not ?

A.—Yes, there is a new average yield per acre struck every five years, if necessary.

Q.—I take it that independent enquiries are made between settlements and if the Settlement Commissioner thinks it necessary to alter the average, he does so. I suggest that will give you figures of yield which will vary considerably and probably there may be considerable errors.

A.—Possibly.

Mr. Kaul.—*Q.*—You say that you do not deal with that subject ?

A.—I do not deal with it. I should not like to be taken as an expert.

Prof. Burnett-Hurst.—*Q.*—Do you think it is possible to place a cess on agricultural products of commercial value for the purpose of financing the collection of improved statistics ?

A.—The only cesses I know of are the tea and cotton cesses. They have been levied for the improvement of these two crops.

Q.—Do you think that the principle of placing a cess on commercial products should be extended to other products with a view to financing the collection of improved statistics ?

A.—Well, there is one for tea and one for cotton. I think a very small cess does not meet with objection from exporters.

Q.—The ideal thing would be to have a special staff of men appointed for the sole purpose of crop reporting, as in the case of America and Western countries where the statistics of yield are more accurate as compared with the figures produced in this country.

A.—We have such a staff already in the Land Records staff.

Q.—Would you regard them as skilled reporters ?

A.—Not in the sense of being scientifically trained statisticians.

Q.—But they are trained agriculturists ?

A.—They are not trained agriculturists. They are trained Land Records men. They are trained to do that particular class of work.

Q.—Do you think that the Land Records men can give accurate reports of the yield of crops—as accurate as the market reporters and crop reporters in other countries ?

A.—It is very difficult to say.

Q.—You would not express a definite opinion on that ?

A.—I would rather not.

Q.—Do you admit that the figures of the yields in Burma are unreliable with probably the exception of rice ?

A.—I would not go so far as to say they are accurate.

Q.—They are not accurate ?

A.—In obtaining information from the people of this province whether it be in regard to agricultural products, or wealth, or income, or whatever it may be, are you not dealing with an entirely different population than

you have got in Australia or the other Dominions, that is to say, in the Dominions there is a highly educated population, a population that can make proper returns ?

A.—Yes.

Q.—Do you think that the system of carrying out an intensive study of typical villages would give you more reliable figures than any system that you have at present in vogue ?

A.—I would not say so. It can be tried with a view to finding out which is the better method.

Q.—During the course of your duties you have become acquainted with the agricultural population ? Knowing their characteristics, do you think that the people would resent an investigation into their personal wealth ?

A.—At present they undergo a good deal of questioning by the Settlement Officer.

Q.—In regard to wealth ?

A.—As regards production at least.

Q.—And with regard to income and indebtedness ? Are these figures unreliable ?

A.—Possibly, I think they are.

Q.—Do you think it is possible to ask these persons questions about their private wealth ? Well, leave aside the agriculturist because we are concerned not only with him but also with all classes of persons. If any one asked you what your private wealth was, would you tell him ?

A.—No I would not. Unless the law demanded it as in the case of income-tax.

Q.—Do you think that the average middle class person in our towns would give that information readily ?

A.—I do not think so. I think it would be very difficult.

Q.—The higher up the scale you go, the more difficult it would be to get that information ?

A.—I should think so.

Q.—It has been suggested that Rural Economy Boards might be established with a view to gain the interests of the people of the village in the improvement of agriculture and other subjects. Do you think that is a feasible plan ?

A.—I have myself suggested Agricultural Improvement Boards or Committees for each district.

Q.—Do you think that the formation of these boards would lead to improved returns of agricultural statistics ?

A.—I did not think of them in connection with statistics. My idea was that would strengthen the Agricultural Department if we had a committee consisting of the Deputy Commissioner and officials from the Co-operative Department and officials from the Irrigation Department and probably the same number of non-officials. They would act as local advisers to the Agricultural Department and probably have a certain

amount of control over money for loans which is now administered by the Deputy Commissioner.

Q.—Do you think these committees could be utilised at all for giving statistics of agriculture ?

A.—I am afraid not. It would be asking too much of them.

Q.—In what way ?

A.—They are giving voluntary service.

Q.—You think that a voluntary reporting agency would not be a success ?

A.—I think not, not in this country.

Q.—Are not bones in this province used for industrial purposes at all ?

A.—No.

Q.—Not to your knowledge ?

A.—There is a certain mill in Rangoon which exports ground bones.

Q.—For what purpose ?

A.—I cannot say for what purpose they export them.

Q.—Is there any bone carving as there is ivory carving ?

A.—No.

Q.—Is the quantity of milk produced considerable in this province ?

A.—It is considerable for large towns. Most of it is produced by Indians.

Q.—And in rural areas.

A.—There is not much. There is some. There is however a very large import of condensed milk.

Q.—Have you any suggestions to make with regard to collecting figures of fruit cultivation ?

A.—No.

Q.—If you take typical villages and make intensive studies could you not get statistics of fruit production ?

A.—We might attempt these enquiries ?

Prof. H. STANLEY JEVONS, M.A., B.Sc., Lecturer in Economics,
University College, Rangoon.

Written Statement.

General.

Question 1 of the Questionnaire.—The present task of the Committee I understand to be to examine the question of undertaking a general economic survey of India with a view to ascertaining the available economic resources and the economic condition of the people. Such a general survey, if carried out everywhere in detail would be an immense task; would take from seven to ten years to complete; and would be very costly. It is doubtful whether the information obtained would be of any practical value as a guide towards the improvement of the condition of the people. It would provide an immense mass of material for the economic historian of the future; and might provide the basis for many specialised enquiries.

From the point of view of practical statesmanship, however, and even from that of the economic student, the most important questions are: (1) to be able to measure the progress (or retrogression) of the economic condition of the people from time to time; and (2) to ascertain the most effective means of promoting the economic progress of the people. Included in the latter division would come a criticism of the work of the Departments of Agriculture, Co-operation and Industries, and other departments, as regards their effectiveness in promoting economic welfare; and such criticism must be based on the measurement of the results achieved. Suggestive proposals for rendering more effective in economic results the work of the beneficent departments might be expected to follow.

To measure changes of economic condition the enquiry must be repeated periodically on the same lines. Whether the period be one, five or ten years is of less importance than making the right kind of enquiry and repeating it without changes of method. I would go so far as to say that an economic enquiry which is not to be repeated periodically will be of very little use. Attempts to make comparisons with other countries where climate, habits and customs are very different, will be misleading. As single enquiry can only prove that the economic condition of the people is bad—much worse than everybody wishes it to be. The enquiry could give us no certain knowledge as to what the progress has been during the past 50 years; though here and there data might be found to indicate what progress (if any) has occurred during the past ten or twenty years. Such information as would provide a measure of past progress in recent times would have to be searched for separately, and would not be the result of a general enquiry as to present economic conditions.

I conclude, therefore, that such enquiry into existing economic conditions as is undertaken must be limited to such a scale as will enable the same information to be gathered periodically. There is no reason to decide now on the periodicity of the enquiry. It might be found possible to obtain some of the information annually, most of it quinquennially, and the rest at decennial intervals. All the information obtained should have a close and special bearing on economic progress: (1) to measure the progress taking place, and (2) to discover particular causes which are

retarding progress, and aspects of economic welfare in which progress is not being made, and which therefore require attention.

Scope of the Enquiry.—The six headings proposed in Q. 1 do not cover the whole field of enquiry necessary to obtain even an approximate measure of economic welfare. Statistics in terms of money values are liable to be misleading, owing to the great difficulty of allowing adequately for changes of price level. Real wages, real wealth and real indebtedness are the figures to be brought prominently before the public. The calculation of these through the medium of price statistics needs to be very carefully checked by certain lines of direct enquiry as to quantities and qualities of goods and services themselves. It is specially important that the housing conditions should be recorded: not merely rents, but the kind and quality of houses or tenements lived in, cubic capacity, and conditions as to overcrowding.

I wish to emphasise the great importance of the systematic study of rural economy. In this case an agricultural survey, dealing with the crops and the methods of cultivation, implements, etc., and the marketing facilities should be made at the same time as an enquiry into the welfare of the people.

Organization.

The following suggestions are based on the above mentioned principle, that all information sought for is to be such that it will be financially possible to provide for the repetition of the same enquiry annually for certain figures, quinquennially for other figures, and decennially for other figures and information. For the annual statistics: (1) agricultural, I recommend a Bureau of Agricultural Statistics for India, with its headquarters at Pusa, so as to be in touch with agricultural specialists who can aid in interpreting the figures. The responsibility for gathering them will be with the proposed Departments of Rural Economy, which I wish to see attached to the provincial agricultural departments; (2) mineral, the Chief Inspector of Mines, who should be required to supervise all quarries for coal and minerals and to obtain from them statistics of production; (3) industrial, the Director of Statistics, who should obtain production statistics of selected great industries annually.

The quinquennial and decennial enquiries should be undertaken by two new agencies: a permanent Census Bureau, and the Rural Economy Branch of the Agricultural Department of each province.

Q. 102.—I am entirely in favour of establishing Central and Provincial Bureaux of Census and Statistics. These would undertake all statistical work in each province, except only the crop statistics, which would be better done by the Rural Economy Branch of the Agricultural Department. The production of other agricultural and pastoral products of all kinds would be estimated by that branch eventually.

No complete census of production could be taken until the establishment of the above mentioned permanent offices had been followed by ten years study of industries. Even then the figures for production of fisheries and for cottage industries must be largely guess-work.

I wish to lay stress on the importance of establishing the proposed Departments of Rural Economy on quite other grounds than those of statistics. A continuous and detailed study is needed of such rural problems as the alleged decline of fertility of certain districts of India.

of rural indebtedness, and of the effects of tenancy laws and other laws on rural prosperity. Much economic information is obtained by settlement officers in the course of their enquiries ; and now a days little of it is published. The Rural Economy Branch could collate the information obtained by the settlement officer, supplementing it, if necessary, and file it permanently for record. A selection of the material might be published.

It is possible to combine certain economic enquiries with the population census ; and in this connection, I wish to call attention to the " Special Statistical Report " on the Indore State, for 1910 to 1920, compiled by Mr. Rahalkar, the State Census Officer, which contains statistics of income, wages and live-stock of great interest, though insufficiently explained.

Q. 98.—Yes, the enquiries as to rural conditions being made by the proposed Rural Economy Branch of the Agricultural Department.

Q. 99.—I do not see how statistics for every village could be published. There should be tables and descriptive matter for each district, or economic subdivision ; and a few villages, selected at random, might be described in detail.

Q. 101.—I should like to see an economic year book for India published on the lines of those issued by the Dominions. It might be a companion volume to the Statistical Abstract, which needs to be better printed. The Year Book might incorporate the Review of Trade.

Q. 101.—Yes, I agree with all this. The Department of Statistics needs to be entirely re-organized on modern lines in charge of a professional statistician—that is, a man who has had a thorough training in modern statistical method and experience in research.

Q. 102.—Answered above.

Q. 103.—As regards areas of compilation, economic divisions are more important than administrative divisions ; and the two only partially coincide. As regards towns, the following divisions should be the basis of certain statistics : (1) there is the town itself, often separable into business industrial and residential districts ; (2) around the town is the suburban zone ; (3) outside this comes the rururban zone, characterized by market gardens, dairies, and cottage industries, with brickfields, fuel getting (cowdung or wood) ; although country, the agriculture and other occupations are determined or modified by the proximity of the town. Beyond the rururban zone lies the pure country.

Q. 104.—Legislation should be passed to give Provincial Statistical Bureaux the right to collect statistics of wages rates and wages paid from employers, who should be required to make annual returns. Employers should also be required to make returns of hours worked, and of stop pages from all causes. I would also require factory and mill owners to furnish an annual return of housing accommodation provided for their workpeople, to indicate dimensions, materials, as well as the number of rooms ; and statistics as to occupation of rooms by factory workers and by others. It would probably facilitate the passing of such a law if the Statistical Bureaux were given power to pay to every employer who sent in a return not proved to be unreliable, a refund of the probable cost of the clerical work involved in preparing the return, assuming the employer's wages books to be well kept.

I do not think it would be advisable in the near future to require employers to furnish returns of production in manufactures ; but it is important that the mineral statistics should be more complete ; and legislation will be required to compel owners or lessees of quarries (except for road metal) to make returns to inspectors of mines. (This answers Q. 22 also) I may add that I think the law needs amending to make it obligatory to report accidents in quarries, as well as in mines, to the inspector of mines.

Q. 105.—My suggestion is that the Imperial Bureau of Census and Statistics should be financed by Central Revenues and that the cost of the Provincial Bureaux be met half from Central Revenues and half from Provincial Revenues. The reason is that a uniform level of efficiency is essential in all the provincial bureaux, and the Imperial Bureau must have a say in the appointment of the staffs of the provincial bureaux. A constant control and interference will be necessary ; and this will be regarded as unwarranted and insupportable unless Central Revenues are bearing at least half the cost.

Q. 106.—If the initial economic survey is undertaken on a large scale, and on the initiative of the Government of India, the cost must be met almost entirely from Central Revenues. The Provinces might be induced to recognize the importance of having more detailed and systematic information as to economic conditions available, especially as to rural economy, and they should be requested to bear half of the expense of the Census and Statistical Bureau, and the whole, or at least three-fourths, of the cost of the Rural Economy Branch of the Agricultural Department.

Qs. 107 and 108.—I do not think that municipalities, district boards or villages, would be willing to defray any part of the cost of any statistical or other enquiry ; nor do I think it would be wise to ask them to do so. In my opinion it was a mistake to put so much responsibility for the population census on the municipalities, who frequently required unwilling members of their staffs to do the census work in addition to their ordinary duties. Such a devolution of responsibility as must accompany the paying of any part of the cost by a local authority will necessarily entail an extreme disparity in the quality of the work done in different places ; and probably very little of it would be up to the desired standard. The cost of adequate supervision by provincial officers would be almost equal to the cost of having those officers do the work directly themselves with a few local assistants, who need not be paid much.

Q. 90. The house to house visit is the only way, and such visits to each house may have to be repeated two or three times. As regards rural tracts, much would depend on getting the confidence and interest of the villagers, by frequent talks with them under the village tree in the evenings. The investigator might find it possible in some cases to utilize the patwari (or revenue surveyor) to record information under his close supervision, the patwari being suitably rewarded for faithful work.

Brief answers.

Q. 48.—The mode and frequently distribution.

Q. 49.—Yes.

Q. 50.—Yes.

Q. 51.—No.

Q. 54.—From inspection of the figures published, and what I have heard about the methods of collection, I should not regard them as reliable. When averaged they may be relied on to give the *direction* of change truly, but not the amount.

Q. 55.—Yes.

Q. 56.—No.

Q. 59.—The wages should be recorded according to the unit of time for which they are paid ; but for comparison, must be reduced to a common unit, preferably the month.

Q. 60.—If the enquiry is into rates, No. If the enquiry is as to income, *i.e.*, average earnings, Yes.

Q. 61.—I would suggest that the only plan is to assume that whilst in his village the man earns as much as an agricultural labourer, or a little more.

Q. 64.—The family.

Q. 65.—The year, and for agriculture the average of three or four years.

Q. 66.—Income in this sense can only mean average earnings per annum. The information must extend over a year.

Q. 67.—If the supply is free the value to be assigned is the estimated cost equivalent to the labour of obtaining (*i.e.*, cutting wood fuel) and bringing it to the village.

Oral evidence, the 22nd April 1925.

Chairman.—Q.—If you have to carry out an economic survey, it will be necessary first to do some stock-taking—a preliminary stock-taking survey and then carry on census work from year to year and at periodic intervals after the stock-taking census ?

A.—Yes. The statistics will be much more valuable if they are of the kind which can be repeated.

Q.—You say here “ Such a general survey, if carried out everywhere in detail would be an immense task and would take seven to ten years to complete ; and would be very costly ” I suppose you mean it will be seven to ten years before it can be very reliable ?

A.—To get a detailed review of the economic conditions in all parts of India will require a large staff spending two years in preliminary work and finding out what they have to do and it will take them, I think, more than five years to cover the ground.

Q.—What is your idea of an economic survey ? How would you proceed, supposing you had the necessary funds ?

A.—It all depends upon the objects you have in view.

Q.—The objects are the same as in other civilized countries ?

A.—I cannot think of any country which has taken any such detailed survey as that which seems to be indicated in the questionnaire.

Q.—For instance, prices, cost of living, and so on. It is done in every country over small areas.

Mr. Kaul.—Q.—Suppose the objects are as laid down by you. You say "The most important questions are (1) to be able to measure the progress (or retrogression) of the economic condition of the people from time to time; and (2) to ascertain the most effective means of promoting the economic progress of the people." Take that as the object. How would you proceed in making an economic survey from your own point of view? Suppose you were asked to prepare a scheme of an economic survey for India?

A.—I would proceed with the establishment of the two organisations which I have mentioned later on, namely the Bureau of Census and Statistics and the Rural Economics Department, because I think it is quite essential to have a permanent nucleus of officers constantly engaged in statistical work and economic work. Then comes the information that is required for the quinquennial period or the decennial period. These permanent officers would naturally engage an extra staff of investigators for that particular investigation for that period.

Q.—Then, which of the main heads given there would you consider essential for the enquiry, and which others would do for particular localities? Which do you consider are absolutely necessary and which ought to be taken up in local areas as tests of the economic condition?

A.—They are all useful in the larger industrial towns. All of these except 1, 5 and 6 could be obtained. That is to say, in large towns you could generally ascertain wages, probably income and cost of living. In large scale industries you could ascertain production. A very fair estimate could be made of income in large industrial towns and the greater part of the production. I don't say that you could do production completely in the towns. As regards indebtedness, it is more difficult to get information in towns than in villages.

Chairman.—Q.—Yes. I see. You say, ours was a very extensive enquiry, how would you limit it? If you were given the option, what tests would you omit?

A.—That is very difficult to say. You have not laid down definitely the purpose of the enquiry.

Q.—The same as in other countries, and to improve the economic conditions. Take the stock-taking census for the wealth and income per head of population, do you think it is necessary? They collect it in Australia and Canada?

A.—I think it is desirable, but not essential.

Q.—Wealth and income are desirable but not essential?

A.—Yes.

Q.—What are the other items?

A.—I should put wages and the cost of living as the things to be studied and I want to add, as I mentioned in my evidence, housing conditions, which deserve considerable study, and I should like to see the conditions of public health studied closely in relation to the economic conditions.

Q.—What resources do you think require study in this province ?

Mr. Kaul.—*Q.*—Or in India generally ?

A.—In regard to Burma I think, as far as I have seen the province, that the further study of agricultural possibilities and the soils and the methods of cultivation employed in different parts is very desirable. We have, further, very little data as regards the climate as compared with other countries and other provinces. Observations are taken in too few stations.

Q.—What other information concerning the resources are necessary for this province ?

A.—I think the study of fisheries might be pursued in the same way as in Madras with advantage. As regards minerals, the Geological Survey is at work. The main consideration there is that some means should be found of co-ordinating the work of the very numerous private prospectors. They ascertain many valuable facts regarding the minerals in Burma and submit them to their firms and all the rest of the information is lost. The man goes back to England and there is no record of it available.

Mr. Kaul.—*Q.*—How would you get it ?

A.—It is very difficult.

Q.—Do you suggest that it might be brought up ?

A.—Yes. Government might possibly make an offer to firms who have good geologists as prospectors that such information as the firm itself does not require if afforded to Government with all the necessary proof and particulars would be paid for.

Chairman.—*Q.*—From your studies of other countries, in what order of urgency and importance would you take up those items ? We should be glad of a definite answer from you.

A.—I should say that I attach much more urgency to my second problem namely to study the most effective means of ascertaining economic progress, and the statistics that would have to be made for that purpose, are somewhat different from those six headings that are named here. Out of the six headings, I certainly think that the study of wages and cost of living and production as far as it is feasible are the most important.

Q.—Of course, statistics of prices are maintained ? They must be maintained ?

A.—I have assumed that those statistics of prices are maintained.

Q.—What about an investigation as to the income per head and wealth per head ?

A.—Well, economists would like to have the information, if it could be obtained ; but what I feel is that no reliable information could be obtained except at very considerable expense—nothing which Government could publish with its imprimatur.

Q.—You say " Attempts to make comparisons with other countries where climate, habits and customs are very different, will be very misleading " ?

A.—How can you compare ?

Q.—It is only by comparison that we can learn.

A.—As I say, I am rather afraid of comparisons expressed in figures because they do not convey any true idea—no real comparison. I would rather have it as a comparison by description of the way in which the average artisan lives in other countries and the average agricultural labourer; what kind of house he lives in, what kind of food he consumes, and compare that with a similar class of men in India.

Q.—The only way of comparing large bodies is by statistics ?

A.—Yes.

Q.—You can give a description of things but that would not give a concrete idea ?

A.—I beg to differ. If it is not definite, it is much more concrete than a statement of figures and certainly much more useful.

Mr. Kaul.—Q.—Not equally concise perhaps ?

A.—No, not equally concise, but not as misleading as a figure in comparison is.

Chairman.—Q.—Was any economic survey carried out in Indore ?

A.—It was not exactly an economic survey, but a special study in connection with the census.

Q.—Did you do that with Mr. Kibe or independently ?

A.—I think it was done independently, because Mr. Kibe gave up charge while it was in progress. I think it was first arranged in Mr. Kibe's time when I was present so far as I remember.

Q.—Do you consider that a census of production for each village and township would be of value to the inhabitants of the village or township itself in order to improve their economic condition by studying, from year to year, their growth of production and compare themselves with other villages and townships ?

A.—I don't think it would, in this country.

Q.—Is it not desirable to make a beginning and teach them how to make a comparison between themselves and other countries ?

A.—It might be worthwhile experimenting with that in the Punjab canal colony or in the delta of Burma, if any one will go to the time and trouble of teaching them. I should not recommend Government doing it.

Mr. Kaul.—Q.—In answer to question 1, you say "It is doubtful whether the information obtained would be of any practical value as a guide towards the improvement of the condition of the people, even if 7 or 10 years were spent in obtaining the information ? But do you not think it worth while to obtain such information from this as well as other countries in order to improve the economic condition of the people ?

A.—I do not think so. It might be taken as an index of the taxable capacity of the people.

Q.—Do you mean to say that the statistics collected by other countries are not intended to enable the country to develop its economic condition ?

A.—No, they are made generally as a matter of general public interest with a view partly to inform people as to what progress the country has

made ; but not with a view expressly to the development of the country. I have never heard of that reason being assigned. The economic condition of the country is considered separately.

Chairman.—Q.—Is not the economic condition of the people considered usually ? These general statistics give an idea of the economic strength of the country ?

A.—Oh yes, but I don't think they are used in application to any concrete problem of development.

Mr. Kaul.—Q.—But are they not taken as a basis for the formation of a concrete economic policy ?

A.—Well, a general national commercial policy perhaps. But I do not think statistics enter into the formation of that. I think that it is a much wider political question rather than a statistical matter.

Chairman.—Q.—For instance, in the report of the annual finance in Japan, you have the statistics of production given ?

A.—I cannot recollect any case where production statistics have actually been used by any political party in advanced countries in discussing national policy. It may be so but I cannot recollect any case. They used to discuss figures of trade, and protective tariffs, etc.

Mr. Kaul.—Q.—Do they not give indications of conditions which can be improved or bettered ?

A.—In the sense that they establish a possible measure of progress, they are very useful.

Q.—For instance, we find from the cost of living that a certain class is unable to make two ends meet. Then we try to undertake measures either for emigration to the colonies or for finding some other occupation for them ?

A.—To get such information you must have a detailed enquiry which will relate to a particular locality and a particular class of people.

Prof. Burnett-Hurst.—Q.—And particular subjects ?

A.—Yes.

Mr. Kaul.—We are supposed to lay down the method of ascertaining the economic condition of various classes. Those are our terms of reference. Then you say that a single enquiry would show that the conditions are much worse than anybody expected ?

A.—Excuse me, I do not quite say that. I say that a single economic enquiry would show that the economic condition of the people is bad or worse just as people look at it.

Q.—Quite right. But then you say “ The enquiry could give us no knowledge as to what the progress has been during the past 50 years, though here and there data might be found to indicate what progress (if any) has occurred during the past ten or twenty years.” If we take stock to-day, in twenty years time we will be able to know whether there has been progress or not ?

A.—That is why I limited the enquiry to periodical enquiries.

Q.—You say “ There is no reason to decide now on the periodicity of the enquiry ”. We want to get an idea as to what information to

ascertain periodically and what to collect every year. Should we not try to determine that ?

A.—Approximately, we should determine it beforehand but obviously the statistics of trade, of prices and of production of certain industries can easily be obtained. There is always a margin of doubt as to whether certain other statistics can be had annually or whether they are worth while collecting quinquennially ?

Q.—Of course, they can be improved from time to time ?

A.—Yes.

Q.—You say “ Real wages, real wealth, and real indebtedness are the figures to be brought prominently before the public.” How would you ascertain real wealth ?

A.—I mean an estimate in money is to be utilised only by comparison with price levels. If the purchasing power of money has declined, there will be a general rise of prices which gives an apparent increase of wealth. You must ascertain the real figures by reducing them to a common factor.

Q.—That can be ascertained when you get the figure of wealth for a certain number of years ?

A.—Yes.

Q.—How can you ascertain the real figures of wealth ?

A.—Through individual property and national wealth.

Q.—Individual or national wealth—how would you ascertain it ?

A.—I am not prepared with any complete plan : it is a difficult problem.

Q.—For instance, if I came to ask you what wealth you have, would you give it to me promptly ?

A.—If it is an educated person, he would probably give it to you, but it would be difficult to get information from the villagers.

Q.—You say it is important to ascertain wealth. Then we must find some method of ascertaining it ?

A.—I did not say ‘ Important ’, but I said that real wealth rather than money wealth is important and should be ascertained, if you decide that you must ascertain wealth. The point, if I might add, of mentioning the importance of dealing with real wages and real wealth is that the figure given as an estimate of wealth per head should not be misleading. A figure of “ real ”, wealth or income could be calculated by reference to prices and budgets of expenditure. But further, these statistics need to be checked by reference to direct enquiry as to the changes of the quantities of goods produced. That is to say, we must deal, not only with money and prices, but go directly to goods in order to check the statistics.

Q.—As regards organisation, should we have a central bureau with these branches, agriculture, mines, industries, miscellaneous, including commerce, the taking of vital statistics, etc., and have each branch presided over by an expert ; or should we develop the whole organisation from one office instead of having separate branches ?

A.—I think if I understand you rightly, you mean doing statistical work, or do you mean doing general enquiry work? My main criticism of that would be that I think it desirable that the whole collection of statistics, as apart from the collation and tabulation, should be done by some department which is closely in touch with actual conditions. Now if there existed such a department dealing with rural economy it would not only be collecting statistics, but it would also be investigating further questions relating to rural conditions and it would therefore have the means of itself checking and interpreting figures. I might illustrate further this rather important principle by taking the question of public health statistics. I think it would be wise to assign the collection of statistics only to medical men or men trained in public health.

Q.—Would you not leave it in the hands of this statistical bureau to revise information collected and prescribe methods by which they can be collected?

A.—I would not go as far as that. It seems to me that the business of the central statistical bureau would be to find out what statistics are required by the public, Government and Universities and so forth, and further meet their needs as far as possible by negotiation with the departments collecting the statistics.

Q.—You will not have the bureau prescribe what statistics are to be collected?

A.—How can it prescribe when it will not be acquainted with the conditions of the place in which it was decided to obtain these statistics?

Q.—But you will have experts there?

A.—The point I am trying to make is that it will not be practicable to employ experts on agriculture, public health, etc., in the statistical bureau itself. You must have a limited number of statistical experts, used to business conditions, to check figures which have been collected by other departments and to reduce them to a proper form for purchases of comparison and general study.

Mr. Kaul.—Q.—I see the difference is this: The statistics would be collected by various departments and the central statistical bureau will act in consultation, and will keep in close touch with those who have collected the figures. The point is, should the statistical bureau regulate the collection of statistics and keep a check on the forms on which statistics are collected or should it be left to each department to collect statistics in its own way?

A.—I think perhaps you do not quite appreciate all I have told you in my reply. The point is the statistical bureau will lay down what statistics it is desirable to collect and publish. They would ascertain that. Then they would negotiate with the departments concerned, who would be actually collecting, and would see how far it is practicable to obtain these statistics. Then, naturally, I suppose the department will be ordered to collect these statistics, but I have changed my reply because I think you suggested that the bureau should prescribe what statistics should be collected, and they cannot actually prescribe that. It is a question of enquiry.

Q.—Unless they consult the departments?

A.—Quite so.

Q.—But eventually you will leave them to prescribe what should be collected ?

A.—Yes.

Q.—The final authority will be the bureau ?

A.—Yes, or the Finance Department.

Q.—You say that no complete census of production can be taken until after 10 years study ?

A.—No complete census of production. I emphasise " complete ".

Q.—You are not objecting to a census of production being taken during the 10 years ?

A.—No. I think the preliminary census should be taken, and as long as it is made clear that it is not a complete census, it will still be useful.

Q.—Of course, things can go on improving ?

A.—Yes, you must have some practice before you become perfect.

Q.—As regards the areas of compilation, do you suggest that we should have separate statistics for towns, suburban zones, rural zones ; would not your suburban zones consist of various villages ?

A.—Yes.

Q.—Well then, within this zone would not the village be the proper unit for compilation ?

A.—Yes, as long as it is grouped in the zone.

Q.—That is our idea ?

A.—My suggestion is that they should be grouped according to the economic rather than the administrative unit. The rural zone of Rangoon might perhaps go into three districts.

Q.—But the rural zone might be again divided into villages and the whole rural district would be divided into several zones and the final unit would be the village ?

A.—Yes. The village would be a unit for collection but not necessarily for publication.

Q.—Is it possible to publish figures for the province ?

A.—Yes.

Q.—You suggest that legislation should be provided to get figures of production, cost of living, etc. Would it not be possible to get from firms, factories and mines the information we want without such legislation ?

A.—Take, for instance, a cotton mill. It will take at least from two to three hundred rupees to get the information. As a matter of fact, the figures of production can be generally obtained from cotton mills. But take some other factory which does not provide statistics. It would easily cost from three to four hundred rupees because they employ thousands of workmen ; and some employers are not willing to undertake the work because of the cost.

Prof. Burnett-Hurst.—Q.—Do you happen to know of any country where detailed and intensive enquiries on the lines indicated by this questionnaire have been carried out by official agency ?

A.—I do not know of any such case.

Chairman.—Q.—Not even in Australia ?

A.—It may be that there are some states in America which have something approaching to it.

Prof. Burnett-Hurst.—Q.—But by official agency ?

A.—No.

Q.—A few intensive enquiries have been carried out in different countries, in America and the United Kingdom, by non-official agencies, by persons like Mr. Rowntree, and by various associations in America, but they were limited in scope and area, and they have been carried out by non-officials ?

A.—Yes. The nearest approach, I think, is some work of the Bureau of Agricultural Economics in the United States formed a few years ago, but it was not so detailed as this.

Q.—Do you think it is possible to carry out concurrently a census of production and of wages in each industrial establishment, and intensive enquiries into the cost of living and various other things, as indicated in this questionnaire ?

A.—It may be possible with a great deal of organisation and expense.

Q.—With a very large staff ?

A.—Yes.

Q.—Will you get a trained staff ?

A.—You will have to prepare some years before it.

Q.—It will be an even more intensive survey than the Domesday survey ?

A.—Yes.

Q.—And further, with a large population and more varied activities of national life ?

A.—Yes.

Q.—If a census bureau of the nature suggested in the questionnaire were established and that bureau carried out an economic survey, do you think it advisable for that bureau, which would be an official body, to establish a poverty line for different classes of the people ?

A.—I do not think so.

Q.—Have you ever heard of an official agency establishing poverty lines ?

A.—No, the whole conception is a rather difficult one.

Q.—From your acquaintance with conditions in Burma and other parts of India, especially in the United Provinces, are you of opinion that the Burman in rural areas changes his occupation more frequently than his fellow Indian in other parts of India ? Several witnesses have told us that the Burman changes his occupation from season to season.

A.—I think there is probably more migration here than in India and it involves some change of occupation.

Q.—Do you think it is of any value, apart from sheer academic interest, to obtain a single figure of income per head or wealth per head of the population for comparison with other countries ?

A.—No, I think it is of very little use apart from purely academic purposes, and it is sure to be misleading, as I say, unless accompanied by very detailed information, which is very likely to be omitted.

Q.—I take it you still prefer intensive studies of the nature of Rowntree's "How the labourer lives", for drawing comparisons, or intensive studies like those carried out by Dr. Mann or Professor Gilbert Slater ?

A.—To be quite frank, my own feeling is that we have already had too many studies of an intensive character in India with a view to ascertaining the condition of the people in certain isolated spots, and a great elaboration of such enquiries would not, to my mind, serve any useful purpose. Such enquiries as are set on foot should, in my opinion, be directed to definite problems of improving the conditions of the people.

Chairman.—Q.—Will you mention some of the problems—indebtedness ?

A.—To some extent : but I think the importance of that part of the census has been overestimated, except in relation to the co-operative movement.

Q.—Take irrigation. To what extent has Burma learnt the question of irrigation ?

A.—In Upper Burma the people know nothing about the construction and use of masonry wells, familiar to the people of northern India, the water here being extracted by small buckets. There are many ways of improving economic conditions ; and it is possible to find ways of improvement by such intensive enquiries in all branches of rural life ; for example, market facilities, communications and so forth and to find out that certain districts are more greatly handicapped than others.

Prof. Burnett-Hurst.—Q.—You prefer the special investigation of specific subjects ?

A.—Undoubtedly. I think that they will bring in practical results, and they will also provide information of academic interest.

Q.—Would you approve of the suggestion that has been put forward that the bureau of statistics, which would be placed in charge of a highly trained statistician, should after collecting figures hand them over to a commission or committee of three or more persons consisting of a publicist, probably an economist and a politician, for the interpretation or a review of the facts ? My point is this, would you leave it to the trained agency which collects the data to interpret the facts or would you leave it to a committee to be placed over and above the head of the trained statistician to make the review ?

A.—No, I will not do either alternative. I think the appointment of any such committee in a consultative capacity would be extremely useful.

Q.—You prefer an advisory committee ?

A.—Yes. I may say I think that the Department of Statistics of the Government of India would benefit in its work if it had an advisory committee of men who had made a special study of statistical methods and were also acquainted with the facts.

Q.—I take it then that you are of opinion that it is much better to collect a limited amount of accurate data relating to the economic condition of the people rather than a mass of material of varying degrees of utility ?

A.—Yes, generally speaking I am ; but I wish to say this so that I may not be misunderstood. There are circumstances in which a wider survey may be necessary or desirable. I mean to say, it might give a misleading impression if you were to make a very detailed investigation in a village here and there in the province, say, in about 4 or 5 districts, and omit to survey a larger number to get the idea of differences between different villages and tracts. You must link them up in this way.

Q.—You are of opinion that the essential feature of collecting the data should be their accuracy ?

A.—Yes, undoubtedly.

Q.—Do you approve of data of varying degrees of accuracy being collected and massed together as of equal accuracy ?

A.—No.

Q.—The main idea would be to get the actual facts as far as one can gather them ?

A.—Certainly ; and to assess the accuracy of the facts collected. If you cannot do that you can at least afford information to the public to find out the degree of reliance to be placed on them.

Q.—I should like to ask you an important question in regard to the framing of estimates of the wealth of a country—whether services should be taken into consideration or not ? Should the practice followed by Sir Josiah Stamp, Dr. Bowley and other statisticians throughout the world who have taken into account direct personal services, be adopted ?

A.—Yes.

Q.—In taking into account the income of a country should we include your income as a professor ? You render services and you receive an income. Do you approve of including your income in such calculations ? I say this because one or two economists in India in making estimates have included services.

A.—Yes, the income of professors should be included.

Q.—I should have liked you to have elaborated your suggestion of rural boards, but perhaps you can send us a report later on ?

A.—Yes. There is just one point I would like to mention which has occurred to me just now. We were discussing the expense of the enquiry, and I think it would be worthwhile considering whether in certain cases detailed enquiries, regarding certain areas, may not be carried out by universities or private investigators with a certain amount of assistance from Government towards the employment of special investigators.

Mr. Kaul.—Q.—Something of the kind has been done in the Punjab.

A.—I think that to them (*i.e.*, such aided investigators) might be extended the powers of a bureau of statistics for certain purposes, and the power of spending a certain amount of money.

Prof. Burnett-Hurst.—Q.—Would you approve of the extension of the system to boards of economic enquiry ?

A.—Failing the establishment of a bureau of census and statistics I would. I think the Punjab Board of Economic Inquiry is doing useful work, but it would be much better to have a permanent bureau.

L111EEC

BURMA CHAMBER OF COMMERCE.

WRITTEN STATEMENT.

Question 1 of the questionnaire.—Enquiries on the subjects named should be sufficient but as far as Burma is concerned conditions vary so greatly as between rural and urban populations as well as with the measure of development to which any part of the country has attained that any extensive census of Production, etc., further than the figures already available, would be a waste of money.

Question 3.—Burma would have to be divided not only into Upper and Lower Burma but to obtain figures of any value at all there would have to be further sub-divisions for—

Shan States, Northern and Southern.

Chin Hills.

Frontier States.

Rural and Urban areas.

PRODUCTION.

Questions 5, 6 and 7.—The estimates of area and yield of the rice crop in Burma, which is immeasurably the principal crop, and for the more generally marketed minor crops, are, as a rule, fairly reliable and we do not see the need for any methods which may prove more costly.

Information regarding the minor crops not already covered would cost more than the volume of such crops would justify.

Questions 10, 11 and 12.—There does not appear to be any urgent need for statistics in the articles enumerated beyond those obtainable from the Custom House in the case of articles exported.

Question 14.—Exhaustive statistics relating to Forestry and Forest products are obtainable from the Forest Department and where further figures are required, providing the volume of trade or exploitation of the article enquired for is commensurate with the effort involved, we are sufficiently confident of the Forest Service to say they would supply the figures or statistics if given time to do so.

It is possible Burmah is ahead of India in this respect and the array of figures and statistics available has but to be closely studied to be appreciated.

MINERALS.

Questions 22|26.—Quite unnecessary. The Geological Survey, Mines Department, and Customs publications contain all the figures of production necessary. Any not included in the relative reports are insignificant in either quantity or value.

INDUSTRY.

Questions 27|36.—It is difficult to see wherein the value of the figures when obtained can in any way be commensurate with the enormous cost of, and the disturbance, even to the extent of unrest likely to be caused, in obtaining them.

Some of the information it is suggested should be obtained is of such an inquisitorial nature that concerns would be justified in refus-

ing to supply it and we feel certain if supplied would frequently be misleading.

We would venture to appeal, for industry, for a rest from further figures, returns, statistics, etc., than those already required. Industry is, we hope, beginning to revive after a long trying depression and attention would be better employed in productive work than in supplying further figures and statistics the use of which is not unusually confined to the statistician.

Cottage Industries.

Question 39.—These might be put under the wing of the Department that looks after Co-operative Societies and such statistics as that Department can supply without undue cost or disturbance should be sufficient.

Wages.

Questions 40|51.—We would refer to our remarks under the heading of Industry many of which apply in this case.

A return of average monthly earnings throughout the year should be sufficient. Any extra payments should be included when arriving at this average monthly return.

It would be impossible to fix a definite standard of conversion for wages paid in "Kind" as this must vary with the current value of the produce used for such payments.

It would also be impossible to ascertain with any degree of reliability the hours of labour of agricultural workers as such work being seasonal it must vary according to weather conditions.

Questions 57|61.—We would again refer to our remarks under Industry and Agricultural Wages.

We are of opinion that a note of wages paid in large Industrial concerns for the purpose of census but not for publication would be readily given in Burmah and no steps would have to be taken to secure such information.

As far as Burma is concerned, the month should be taken as the unit of time for recording wages.

Questions 62|67.—Estimates of Incomes we would say are hopeless. Urban and Rural must have separate values as well as seasonal and spare time occupations. Situation as to earning facilities is another factor that will upset any estimate.

The unit of income statistics should be the family and the period of time as the unit for measuring income, we would put at the year.

Questions 68|84. Wealth, Cost of Living, Indebtedness.—Income-Tax returns, Assessment registers, etc., will supply much useful information without a special census. We cannot see that such a census would ever be even approximately accurate so long as India is addicted to hoarding and Burma to spendthriftness.

If such figures should be collected, the data available in Government offices and the experience of Government District Officers, particularly Settlement and Revenue, should be first drawn upon and collated with a view to further co-ordination of figures available

Intensive enquiries as to indebtedness would be strongly resented, so recourse would have to be had to a general survey, which would be of doubtful value.

Questions 87|93.—Initial Economic Survey.—Our attitude is, that the whole project should be held in abeyance until, at least, trade has been given a chance to recover.

A survey of the nature outlined would take several years to arrive at any useful conclusions and the cost would be bound to be very considerable.

Questions 94|97. Periodical Surveys.—Until the results of an initial economic survey if ever taken are known, we hesitate to express any opinion on the advisability of periodical surveys other than that, as we see, at present, no useful purpose is to be served by even an original survey.

If such surveys should be undertaken, we would suggest it would be sufficient if they synchronized with the population census.

Questions 98|103. Special Enquiries and Organization, etc.—We would strongly deprecate the result of any intensive enquiries being published as to any particular village, town or city.

We would advocate a scheme for co-ordinating and centralizing statistics in each Province and for co-ordinating and centralizing these again for all India. Such establishments however would be only for the co-ordination of statistics without branch establishments. The cost should be met in each Province from its own revenue and in the all-India Bureau from Central Revenue. We do not think that Municipalities, District Boards or Villages should be asked to bear any part of the cost.

An Official Year Book of India would be a most useful publication for the commercial community but its cost would probably be prohibitive.

The Dominions publish such compilations and their figures and facts are made great use of in the Dominions, the result being that the Department get a reasonable return on their cost of production. We doubt if such a result could be obtained here and the country cannot afford unpaying luxuries.

Mr. H. CALDER, Chairman, Burma Chamber of Commerce.

Oral evidence, the 22nd April, 1925.

Chairman.—*Q.*—May we ask what opportunities you have had of studying the economic condition of the people of this province ?

A.—As far as the study of economics is concerned, I have taken very little interest in it, but I have been in this province for 32 years, and I know a little about it, at least from the business point of view.

Q.—Do you think that the trade statistics of the country are satisfactory ?

A.—I think they are. As far as the crop returns are concerned, they are exceptionally good.

Q.—And the agricultural statistics ?

A.—They are good. I am not now speaking of the question of deaths among cattle, but of the general outturn of the principal crops which are exported.

Q.—Have you ever had any opportunity of making an estimate of the production of the country as a whole ?

A.—I am afraid I have never had.

Q.—Are the statistics of the transportation of produce satisfactory ?

A.—I do not know.

Q.—The railway and port statistics ?

A.—There are any number of statistics, but I do not think any one takes much notice of them.

Q.—Do you not rely upon them in your capacity as Chairman of the Chamber of Commerce ? Do you not study them and see how they compare with other ports in British India ?

A.—I am afraid not to any extent.

Q.—Are there any statistics available of the capital invested in industries in the country.

A.—Not that I am aware of.

Q.—And of joint-stock companies ?

A.—Some of them are registered at Home and some here.

Q.—How do you find out the capital of the companies working here ?

A.—We have not got any need for it.

Q.—Is not a record necessary ?

A.—I cannot see what help it will be to any one.

Q.—To form an idea of the economic condition of the province, is it not desirable to know what amount of capital is invested here ?

A.—I do not know what use it can be put to. You must remember that here we are the most backward province of the Indian Empire, and so far as the people here are concerned they go on making money and doing well.

Q.—Would not a study of economic conditions help in bettering those conditions ?

A.—I do not see that it is as yet needed.

Q.—Is it not the practice in all civilized countries to study their economic position with a view to seeing what developments are possible ?

A.—We know what developments are possible, if only we could get more capital into the country.

Q.—What resources in the province, if any, do you think are neglected, which might be taken up and developed ?

A.—I am quite sure that in Upper Burma we could grow much sugarcane if we had the population, but there is no population. There is also quite a good opening for cotton. Although it is not very good it is reasonably useful cotton, but we have not the people to grow it.

Q.—Is not more population one of the requirements of the province ?

A.—Yes—this is the one thing we particularly require. But the Burma Tax on sea passengers will tend to keep people out of the country.

Mr. Kaul.—*Q.*—Might not this Economic Enquiry persuade them not to keep out ? Are not other countries doing likewise ?

A.—You have only to look at Australia to see what is happening there. The Government there are endeavouring to encourage the entrance of more people.

Chairman.—*Q.*—What other opportunities are there which might be better utilised ? What resources are neglected, from an economic point of view, in your province ?

A.—I think in Upper Burma there are great opportunities to be found if we had a full geological survey. There are iron and other mineral deposits. But we have not got the money for this. I would also say that I am all out to help the Agricultural Department in every way, because they can do an enormous amount of good.

Q.—Do you want more staff for investigation ? Much more investigation is necessary into the mineral and agricultural resources of the country ?

A.—Yes, and there is need for more facilities for getting about if we are to open up the country.

Q.—Is not a scientific economic survey the best way of revealing these defects and deficiencies ?

A.—As long as it applies itself to these ends, but I do not see of what use the investigation of family budgets would be in his connection.

Q.—It will show how the country is being developed. Have you any idea of a family budget ?

A.—No, except noting in various villages what is cooked in one village and what is cooked in another.

Q.—You have been to Australia ; so you know that in Australia they have had a house-to-house canvass for ascertaining income ?

A.—You must remember that in Australia you are dealing with people who are all educated and well-to-do.

Q.—Is not there more education here than in British India ?

A.—Yes, the number of literates in Burma is very much more I believe than in India.

Q.—It is not very practical information that they are taught ?

A.—The children are taught in the Phongyee Choungs the three " Rs. ", Reading, Writing and Arithmetic. The Phongyee (village priest) teaches in return for which he is maintained and also the village monastery.

Q.—Do they make a man think ?

A.—Not necessarily. The Phongyees should be principally concerned with their religious books.

Q.—Are the people in the villages, the rural areas, more capable agriculturists on that account ?

A.—I would not say that they are more capable on that account, I should say that agriculture is a science which has to be imparted by itself and by this monastic teaching a basis of thought for this is opened.

Q.—A man may not have religion of any kind and yet be a very capable agriculturist. Some people have told me that the Burmese agriculturist is more intelligent than the Indian agriculturist.

A.—I think that the Burman agriculturist is very much more intelligent than the average Indian. He has probably a little more money than the Indian and perhaps he lives in a higher plane of ideas.

Q.—Is the standard of living of the Burman higher than that of the Indian ?

A.—Yes.

Q.—Has that standard risen or fallen within the last 30 years ?

A.—It has risen but the Jungle Burman is one of the most improvident persons alive. In a good year he will live as well as he can and when he has a bad year he lives just as he can on what is available.

Q.—Since you hold these broad views, why is it that you say that any expenditure incurred on a Census of Production would not be worth the money ?

A.—Because we want all the money we can get for roads, bridges and hospitals. We would much rather see the money go into that than have an economic survey. I admit that a geological survey and a more extended agricultural survey in Burma would be good, but it would meantime be a waste to spend it on an economic survey, when it is needed in other directions.

Q.—You consider an economic survey useful in itself but you deprecate it on account of the cost. In the Dominions, the United States of America and Canada they give the figures of the production per head of the population. You will find that the Year Books of

these countries give figures for production and income per head of the population. These figures enable you to see what advance the country is making from year to year. Perhaps a similar publication might be useful here. I should like to know what your view is as to its practicability ?

A.—It is only generally speaking Europeans who would buy such a publication. The cost of it would therefore naturally be very high.

Q.—If I correctly interpret our opinion, I think it is that it would be desirable to have that information published, provided it could be done at a reasonable cost.

A.—Yes, it would be very useful for reference provided it were published up to date and not a year or two behind.

Professor Burnett-Hurst.—Q.—One reason why these Official Year Books of the Dominions are purchased to such an extent is that they contain a good deal of valuable, accurate information ?

A.—Yes.

Q.—Is the information at present collected by the Government Statistical Department in many cases grossly inaccurate ?

A.—As regards Burma I would not, taking statistics as a whole, say so. I do not know about India.

Q.—Would you advise that for business purposes only accurate information should be published in the Year Book ?

A.—Surely, as far as possible. But information to within a reasonable limit of accuracy would always be useful.

Q.—Otherwise that Year Book would not be of much use ?

A.—Not only would it be of no use, but it would be grossly misleading.

Q.—And it certainly would not be purchased ?

A.—Certainly not.

Chairman.—Q.—Are you in favour of the publication of a Year Book ?

A.—I am ; but under a careful and expert compilation.

Professor Burnett-Hurst.—Q.—Would you prefer an enquiry into the economic resources of the province, rather than an enquiry into the economic condition of the people ?

A.—I would. These are the views of my Chamber.

Q.—Do you appear here in your personal capacity or as representative of the Chamber ?

A.—Both.

Q.—Have you been in Australia and lived there any length of time ?

A.—I have been there six times, and I have stayed on each occasion anything between three months and a year.

Q.—You are then acquainted with the conditions in Australia, and you are able to compare the conditions there with those in Burma. The standards of living in the two countries are not comparable ?

A.—It is hopeless to compare them. Any figures that may be obtained regarding wealth and income here compared with those in other Dominions are vitiated owing to the entirely different living and working conditions between the countries compared.

Q.—You will probably agree that one reason why we get accurate statistics in the Dominions and European countries is that there you have an educated public which is disciplined and accustomed to furnish proper returns ?

A.—That is my view.

Q.—Whereas in Burma you have, certainly, a population that is more literate than in India, but as compared with European countries they are illiterate ?

A.—Yes and they are as yet undisciplined as to furnishing such statistics.

Chairman.—Q.—But would you not try for three or four years ? The information may not be accurate at first but will it not get more and more accurate year after year ?

A.—Presumably that would be so but I fear not some time to come.

Q.—At the beginning it is always expected that there will not be the desired amount of accuracy but would they not feel the responsibility if this work is thrown upon them ?

A.—The difficulty is on whom would it be thrown ? I cannot imagine the ordinary individual worrying about it for years to come.

Q.—For that very reason is it not necessary now to make a beginning with an enquiry ?

A.—The sooner you begin, the sooner will you get correct statistics.

Professor Burnett-Hurst.—Q.—If that is your view, would it not be better to label the statistics for the first ten years as dangerous and misleading ?

A.—Yes, certainly.

Chairman.—Q.—When you say that the crop reports are exceptionally good, do you refer to the yield ?

A.—Yes.

Professor Burnett-Hurst.—Q.—The published statistics relate only to rice and the major crops ?

A.—We have only five major crops, rice, cotton, sesamum, groundnuts and beans. These statistics are extraordinarily correct. Last year was a very bad year. The figures were 25 per cent. out in the rice crops, but this was the first occasion of a bad estimate for many years. The rice estimating staff had very great difficulties to contend with. There were floods and all that follows.

Q.—You mentioned in your written evidence, under the head of "Statistics of Production", that any enquiry of such a nature would be a waste of money. If you carried out a detailed Census of Production, similar to those undertaken in the United Kingdom and elsewhere,

you think it would take a considerable time and cost a fair amount of money. But if statistics of gross production were supplied by members of your Chamber, through factory inspectors, would it not be desirable to publish the figures in order to gauge the extent of the increase or decrease of the productive capacity of the province ?

A.—You have got all that in the Customs House and you have only to ask for it to get it.

Q.—They are only the exports ?

A.—We only deal with exports ; there is little import business.

Q.—Is not there any large scale production for internal consumption ?

A.—There is *nyapi* and salt-fish and there is a good deal of sesamum oil for cooking. Here *ghi* is not used for cooking, but in its place sesamum oil.

Q.—So far as Burma is concerned most of your large-scale products are exported ?

A.—Yes.

Q.—And for that reason you do not think it necessary to publish statistics of production ?

A.—Yes.

Q.—Would it be possible without a considerable loss of time, to obtain the information from your members ?

A.—As far as the firms are concerned, I think you will get all the information you want from them as to what they produce, what are the wages paid, what is the export and so on, but you will have difficulty in getting that from small dealers.

Q.—I am referring particularly to the industries which come under the Factories Act.

A.—I believe export houses would be quite willing to give you all the information you want, provided you do not publish individual figures. They will give you the total figures of the goods they purchased.

Q.—You happened to mention that the Burman is improvident. On what does he spend his money ?

A.—He spends money doing himself well generally and delights in *pwés*, races, etc.

Q.—And clothes ?

A.—If he can, the young Burman buys the best in shoes and loongies, etc.

Q.—Would you regard him as the “ Knut ” of India ?

A.—Yes, in a way.

Chairman.—Q.—Have you made any estimate of the income per head or wealth per head of the population ?

A.—No.

Mr. H. W. A. WATSON, I.F.S., Chief Conservator of Forests.

Written Statement.

Questionnaire, Subject 14.—The value of timber and fuel extracted for trade purposes and granted free under specified free grant licenses, is given in the annual report and reproduced in the returns of statistics. This value, however, bears no relation to the actual output from the forests as broadly speaking the bulk of the inhabitants of rural areas extract their supplies of these commodities free and uncontrolled in any way. Any statistics in respect of this latter extraction would be pure guess work. We might estimate the requirements of each household and multiply the estimates by the estimated number of households based on the figures of the previous census. This would be the best we could do, but the result would be a pure estimate and useless in my opinion for statistical purposes.

Subject 15.—The figures for the volume of timber and fuel extracted for trade purposes and under licenses for free grants are based on actual outturn as measured and the published figures are as reasonably reliable and complete as can be expected. I do not think that the error in respect of these figures is appreciable and in any case the wastage in extraction and between stump and market would nullify what error there is.

As regards the output by right-holders from reserved forests, the figures are based on returns submitted by subordinates, which returns are based on casual enquiry and are generally quite unreliable.

There remains the heavy output of timber and fuel extracted from the unclassed forests for domestic and public use for which no figures are attempted on the grounds that no statistics of any accuracy could be put forward. Nor can we in any way estimate the wastage of output due to shifting cultivation which takes place over more than half the area of our forests.

Subject 16.—The reliable returns of output relate only to timber and firewood and bamboos and canes extracted for trade purposes or under free grant licenses. The returns in respect of trade extraction of these products are reasonably reliable. Those in respect of other produce extracted for trade purposes as also those in respect of extraction by right-holders are quite unreliable whilst in the case of the very heavy extraction from the unclassed forests for domestic use and parochial public works no statistics are attempted on the grounds that none of any value could be put forward.

Subject to the above I remark as follows on the list of forest products in appendix D.

(1) *Timber* and (2) *Fuel* are included in the statistics for major produce.

(3) *Charcoal.*—Data as to the outturn of charcoal are not included in the annual report though it would be possible to include fairly accurate data of the trade output. The value is lumped together with the value of firewood.

(4) *Fibres.*—Except *shaw* (*Sterculia* species) there is little extraction of fibre from the forest. This is the only species differentiated in the LIIIEC

statistics. The differentiation is only in respect of trade extraction and there is no record of the enormous quantity extracted free.

(5) *Grasses*.—Thatching grass only is distinguished and then only when extracted for trade purposes. The enormous output extracted, free for domestic use cannot be included as no statistics are available. The value of licenses allowing grazing on payment is accurate, but where figures as regards quantity are entered they relate to head of cattle.

(6) *Distillation products*.—Only *thitsi* (lacquer) and cutch are distinguished and the only reliable statistics relate to revenue received. The trade in other products is negligible; but in addition to *thitsi* and *cutch* there is considerable extraction for domestic use of *kanyin* oil from *kanyin* trees (*Dipterocarpus* sp.). Camphor for all practical purposes does not exist in the wild state in Burma. There are only a few trees in a remote part of the Southern Shan States.

(7) *Seeds*.—Seeds are not differentiated.

(8) *Bark*.—Barks are not properly differentiated and information relating to other than the value of licenses to extract are generally not reliable.

(9) *Wood dyes*.—No data.

(10) *Fruit*.—No data. What little extraction there is, would be included under "Miscellaneous."

(11) *Leaves*.—Thatching leaves only are distinguished and the reliable figures relate to license fees only.

(12) *Roots*.—No data.

(13) *Flower*.—No data.

(14) *Spices*.—No data and probably no extraction.

(15) *Bamboos and canes*.—As stated in the preamble the data as regards extraction for trade and under free grant licenses are reasonably accurate. Those as regards extraction by right-holders are valueless whilst the bulk of the extraction from unclassified forests for domestic and parochial use is unrecorded.

(16) *Gums and gum resins*. *Thitsi*, *indwe* and *pwenyet*.—The figures relate to royalty received only on trade extraction.

(17) *Rubber*.—There is little wild rubber and latterly no extraction has been recorded. This department is not concerned with cultivated rubber.

(18) *Animal products*.—The figures relating to royalty paid in only are correct. In the case of lac, the export figures are probably accurate but there is no other check on the output.

(19) *Sawdust*, (20) *Miscellaneous minor products*.—No data.

It is quite impossible to secure returns in respect of free extraction for domestic and parochial use. In the case of trade extraction of minor produce, it would be possible to obtain reasonably accurate statistics, but only at an expenditure of time and staff that under existing circumstances would be entirely unjustifiable if not prohibitive.

Subject 17.—As stated above reliable statistics in respect of trade extraction of timber and firewood, bamboos and canes extracted from unclassified forests are available, but in respect of extraction of minor forest produce as also timber, firewood, bamboos and canes extracted for domestic and parochial use no means can be devised for obtaining useful statistics. There are no private forests in Burma.

Oral evidence, the 22nd April 1925.

Chairman.—*Q.*—I suppose you have served all your life in Burma.

A.—I have been here 27 years.

Q.—You know all about forests.

A.—That is too big a subject.

Q.—Our chief problem is, how to collect statistics of forest production in every form, how to obtain estimates of value of produce removed from forests from year to year?

A.—Our returns are as reasonably accurate as possible in respect of trade extraction of timber, firewood, bamboos and canes and also in respect of free grants of timber and firewood. But there is no accurate information in respect of extraction by right-holders, and as regards the enormous extraction by the rural population for domestic requirements we have no statistics. I may add further that there is an enormous wastage of forest products in the practice of shifting cultivation.

Q.—For manure?

A.—It works out at that.

Q.—These are all the forms in which forest produce are extracted?

A.—No, there is a considerable extraction of minor products. And as regards it we only have statistics of value. The actual figures as regards output are not reliable.

Q.—Can you tell us roughly what the approximate production is?

A.—I have figures here for the last three years. I am afraid that the three years' figures will, as regards teak, be an over estimate if used as a guide for the purpose because there was during the past five years rather a boom and the output has been very high. I think there is going to be a drop in the future. I have not worked out the averages but the figures are there divided into teak, other timber, minor forest produce and the revenue realised. I did not know they were required and so did not work out the averages.

Q.—About two crores roughly?

A.—Yes. That is the total revenue. For the last two years Burma has been divided into Burma proper and the Federated Shan States.

Q.—Then the production itself must be very extensive.

A.—You get the value of the trade production from the annual administration reports.

Q.—Roughly how many times the revenue to the Government would that be.

A.—It is the revenue to the Government on trade removal only. In addition the whole rural population has the right to help themselves free except from the reserved forests.

Q.—Have you had an opportunity of estimating what it is worth ?

A.—We may work it out but I am afraid it will be a very bad guess. We have a population in Burma of 13 millions. The whole population in rural areas help themselves freely to what they require for domestic purposes.

Q.—Is the supply of wood inexhaustible for present purposes.

A.—No ; there are large parts of Burma which have already been taken up for purposes of cultivation, and the people have to pay for it.

Q.—Are the forests in any way being denuded ?

A.—Except in very accessible areas within 6 or 7 miles of the river, and within 15 miles of the railways, where extraction is easy, timber, other than teak, is not extracted. Teak can be extracted from anywhere provided there is a floating stream.

Q.—Have you got any lumber industry on an extensive scale as in Canada ?

A.—We have got a teak industry.

Q.—Is it all cut into scantlings and sent away by steamers ?

A.—The chief places where the teak industry is carried on are Rangoon and Moulmein. There are also small saw mills throughout the country which convert timbers other than teak.

Q.—Are there any forests which are not under your control ?

A.—There are no private forests, but control over other than reserved forests is very incomplete.

Q.—And have you no statistics for these ?

A.—We have no information of the extraction of timber for other than trade purposes from other than reserved forests.

Q.—The effect of extraction is not yet felt by the forests.

A.—As regards teak, extraction is up to the maximum possible all over the country, because we can make it float. As regards timber other than teak, the accessible areas have been denuded and the less accessible areas are practically untouched, but in judging everything we have to take the feature of shifting cultivation into consideration. In unclassified forests, I should, at a guess, say it is spread over something like half of the area.

Q.—You have got a volume of timber, but not a volume of full production.

A.—Yes, we have the volume of trade production in the annual report but we have no figures for the volume of extraction by the rural population for domestic consumption.

Q.—Do you think it desirable to restrict it ?

A.—I think it will be very desirable in their own interests, because when the forests are denuded and they cannot get fuel, they will blame the forest department.

Q.—At present is there an inexhaustible supply of wood ?

A.—Not everywhere.

Mr. Kaul.—*Q.*—I presume the Revenue figures include prices of timber you sell to traders. Is not that the main item.

A.—The revenue figures are first : timber, and other produce extracted by Government agents, the gross value ; second) : timber and other products removed from forests by consumers or purchasers. In that case the revenue is royalty. That would be the net value.

Q.—Is it something below the price at which it is actually sold ?

A.—The royalty is merely a fraction of the sale price. As a matter of fact extraction by Government is practically confined to the operation of certain forests in Lower Burma ; we extract teak only and our work of extraction has been going on for the last 70 years.

Q.—What I want to find out is whether, in respect of timber brought down to Rangoon and sold here, you exclude the cost of transport ?

A.—Not in the figures for extraction by Government Agency. This is simply a sale return. The expenditure is shown separately. The next item is by purchase which represents the royalty value. The third is drift, which is the result of salvaging waif and stray timber.

Q.—Is there timber belonging to other people floating in rivers ?

A.—Yes ; we charge salvage rates on waif timber. The fourth is the revenue on duty from foreign timber. It is composed of teak that floats to Moulmein and down the Gulween river from the Shan States, Siam and Karenni and the rest is miscellaneous.

Q.—Does that include minor forest produce ?

A.—No, it comes under heads 1 and 2.

Q.—In Burma do you not show any value of the timber supplied to right holders at concession rates for trees ? In some Provinces, they show the full value of timber supplied to right holders and the concession value charged to them.

A.—We have no special concession rates in Burma.

Q.—As regards the free supply of timber to right holders ?

A.—Statistics are very unreliable. It is simply made up by the range officials who get the information from village headmen.

Chairman.—*Q.*—Is there no control over them ?

A.—No. Where necessary we institute control by marking the timber for them, but, in out of the way reserves, the only timber that is marketable is teak and control is not necessary.

Q.—Have people got to obtain permission to take timber ?

A.—Where there is control, yes. But usually, unless control is necessary we do not exercise it.

Q.—I presume these are unclassed forests.

A.—I am talking about reserved forests. As regards unclassed forests everyone has a free use of the timber and other produce within a radius of ten miles, except teak and certain reserved trees. There is no control whatever as long as they do not take it for sale.

Q.—You do not think it possible to find out the value of these timbers without going to too much expense ?

A.—I think it to be quite impossible. You can only get a rough guess by estimating the number of households and the probable requirements per household, but even then it would be a very rough guess, as many people in the village do not use timber at all.

Q.—Do they not use timber in their houses ?

A.—No, bamboos entirely.

Q.—I suppose some sort of average figure can be arrived at, if necessary.

A.—Yes, but I personally should not place any value on it.

Q.—What proportion of the whole produce do you consider timber other than teak comes to ? Do you think it is negligible ?

A.—It certainly is not negligible. The trade extraction of timber other than teak exceeds in volume that of teak alone.

Q.—What proportion does teak represent ?

A.—It amounts roughly to 70 per cent. of our revenues.

Q.—30 per cent. represents all other produce sold ?

A.—Yes. It represents the revenue in all other produce sold.

Q.—Timber other than teak extracted free will be about double that ?

A.—I am doubtful about other timber. It is very difficult to say anything in respect of other timber, because such a large portion of jungle people do not use timber in their houses. It will be more than double in respect of fuel and minor produce, but remember I am not committing myself to more than a guess.

Prof. Burnett Hurst.—Q.—Would you say 50 per cent. of that value would be nearer the mark ?

A.—No. In any case the guess would be a very wide one. It is hard to say, in view of the enormous proportion. I should say at a wild guess 25 per cent. I do not think there is any one in Burma who will dare commit himself to this.

Q.—Twenty five per cent. of the total produce is omitted ?

A.—Yes, excluding teak. It is omitted because there is no record of the extraction from unclassified forests for domestic use. I was going on the basis of value. If the value is 25 per cent., the actual output at 50 per cent. would be a safe figure, but that, too, is a guess. I cannot do more at a moment's notice.

Q.—Would you mind defining "Trade extraction" for us ?

A.—Extraction for trade purposes. I may say that the principal extraction is on a royalty rate.

Q.—That does not bear a very close relationship to the actual market values ?

A.—No, it does not.

Q.—Now that we have come into the region of guesses, what percentage of the market value is the royalty ?

A.—I should like to have notice of this question.

Q.—There is not a close relationship ?

A.—It varies at different values. Of course, you get many factors. Your royalties are based on the value of the timber in the rough, and your trade returns are based largely on the timber converted into scantlings. I might say that the market value of the material in the rough includes 10 to 15 per cent. on account of royalty.

Q.—Then would not the real market value be five times the royalty value ?

A.—Yes, four to five times. The all-round royalty of teak is in the neighbourhood of Rs. 20 to Rs. 22 a ton, and the all-round selling rate varies in the neighbourhood of Rs. 80 a ton.

Q.—So that any attempt to estimate the value of forest production, based on statistics of royalty figures alone, would be directly misleading unless you took into account the added value due to the marketing of the produce ?

A.—Yes.

Q.—The value would be placed upon it by the manufacturer ?

A.—Not in the raw. Teak is a very difficult timber to value in the round.

Q.—Would it be possible to publish these statistics in greater detail in regard to the more important species. That is to say, could not the figures of quantity and the value of the principal species be published ?

A.—I think we have figures as to quantity—I do not know to what extent—in the report. We keep separate statistics of the more valuable species.

Q.—When you have a general figure of timber covering so many species is it very difficult to draw any conclusions ?

A.—Yes, the trouble in Burma is that we have too many species. There are no pure forests, they are mixed. Teak and *pyin kado* run up to thirty per cent. of the mixture. The other ingredients by individual species are low as regards each individual species.

Q.—How do you measure the volume or quantity of timber ; what are the methods adopted ?

A.—End to end to the nearest foot, that is the length measurement, then mid-girth and cubic contents are calculated by length multiplied by quarter-girth.

Q.—That gives you fairly accurate figures ?

A.—The method is recognised. It is 21½ per cent. below mathematical accuracy but it is a trade method.

Chairman.—Q.—Can you tell us about minor products ? Do they use produce for edible purposes ?

A.—That is so. The revenue from minor products is comparatively small ; it is only about 8 per cent.

Q.—What is the nature of it ?

A.—Lac and cutch are the principal items. Petty items are grass, thatching material, and wild fruits. There are possibilities of development, but the bulk of the people have the right to extract it free for domestic use.

Mr. T. COUPER, M.A., I.C.S., Commissioner, Mandalay Division.

Written Statement.

Question 5 of the Questionnaire.—While I think that for the purposes of collecting economic data Burma should be sub-divided into tracts which are more or less similar in economic characteristics I do not think that either Sir Edward Gait's classification or that of Mr. K. L. Datta is satisfactory. Mr. Datta's classification, so far as I can see, leaves Burma out of account altogether. The classification by Sir Edward Gait in two rainfall divisions, Upper and Lower Burma, is too broad. I think that five tracts should be distinguished :—(1) the paddy plain of Lower Burma comprising the Irrawaddy division, the Pegu division excluding Prome and Thayetmyo districts and the Thaton district of the Tenasserim division ; (2) the dry zone of Upper Burma comprising Mandalay division with the Sagaing, Lower Chindwin and Pakokku districts of the North-West Border division and the Prome and Thayetmyo districts of the Pegu division ; (3) the frontier districts, *viz.*, the Upper Chindwin, Myitkyina, Bhamo and Katha districts ; (4) the Arakan division ; (5) the Tenasserim division excluding the Thaton district.

This classification is perhaps a little too broad ; a district like the Thaton district falls partly in tract (1) and partly in tract (5).

Questions 5, 6 and 7.—Statements of area given in the Burma Season and Crop report are reliable. Almost all the cultivated area in the province has been surveyed on the scale 16 inches to the mile and every year the Revenue Surveyor goes over the ground and records the crop. Statements of yield are not so accurate. Where it is possible to check in part estimates of yield by customs returns there a high standard of accuracy may be attained. The rice crop forecasts were characterised about fifteen years ago by a London firm as much the best forecast known to it. This arises from the facts that the exports are known and that it is possible to determine with considerable accuracy the quantity of rice consumed in the country whether as seed or for food.

It would be expected that the cotton crop forecasts should be as accurate as the rice crop forecasts since the consumption of cotton within the province is very small, but for a long time the yield of the cotton crop was very much under estimated. I think that this has now been put right but I am not sure. Where there are no customs returns of export to check estimates of yield, as for example the yield of the sessamum crop, then it is not possible to assign to the figures in the Season and Crop Report a high standard of accuracy.

Crop reports are based on estimates of normal outturn and the condition of the crop in the year of report is stated with reference to the normal outturn. I do not think that the instructions define what a normal outturn is and in any case reporting officers are reluctant to depart at all widely from the normal. If the normal crop were defined as the best crop ever known and the condition figure was reported with reference to an outturn so defined, perhaps a greater accuracy might be reached.

To the best of my recollection, question 7 is not correct in stating that there are no regularly reported statements of yield for minor crops. I think that the Burma Season and Crop Report does give the yields of a

considerable number of crops but I regret that in the time available I have not the opportunity to verify this.

Question 37.—The making of wooden clogs, of Burmese umbrellas and bronze articles are not, I think, among the industries enumerated in Appendix H.

Question 40 et seq.—The quinquennial wage return in the form prescribed by the Government of India is not suited to conditions in Burma. Daily wages are not usually paid to agricultural labourers nor are monthly wages. The return does not show the predominant wage for any class of labour nor does it show the total number of persons to whom the different rates apply. In Lower Burma though the wages are usually stated as payable in paddy, they are usually in point of fact paid in cash. I have explained the reason for this in paragraph 42 of a report of inquiry into the condition of agricultural tenants and labourers which I prepared last year and to which I ask permission to invite a reference. When wages are paid in paddy the employer not infrequently uses an undersized basket with which to measure them out. In this respect and in others, as for example in the latitude given to a man who is sick, real wages differ from nominal wages and I doubt whether anything except an intensive inquiry will get at the facts.

I do not think that the classification of agricultural workers employed in wage statements is altogether satisfactory. Ploughmen, for example, usually begin work before the rains start, they build field huts and cart firewood; when ploughing is done their contract may terminate or it may include pulling the seedlings in the nursery. It often includes the broadcasting of the seed. If a labourer is employed for reaping as an individual and not as a member of a gang on piece work, his contract often includes the herding of cattle until the harvest is reaped and the thrashing and winnowing of the crop after it is reaped. The different contracts might be more clearly defined in the wage statement forms.

A return of monthly earnings is not sufficient for a wage statement. It is necessary to find out also how many labourers are without employment in that month. Many agricultural labourers find it difficult to find work between September and December. After the crop has been sold, labourers find employment as cartmen but it is difficult to find out how many can be employed in this way. †

Employers sometimes complain of the way in which the labourers purloin the crop while employed as reapers or winnowers. Such extra pickings go to increase real wages but it is difficult to determine the amount of extra payment got in this way.

I do not think that it is correct to say, as stated in question 45, that the rates on which produce wages are converted into cash vary according to the personal equation. I think that the labourer usually obtains the market rate. I have given reasons for this opinion in paragraph 43 of my report quoted above.

I do not think that a classification by canal irrigated and unirrigated tracts is suited to Burma. Canal irrigated tracts are usually enclosed by unirrigated tracts and labourers pass from the one tract to the other according as the rainfall in the unirrigated tract is adequate or inadequate.

In estimating wages the fact that the employer houses the labourer should not be taken into consideration. The labourer has to be on the spot and has to endure the discomfort of the field hut and this fact is taken into account when the contract of service is fixed. It should not be taken into account twice.

So far as I know labourers in Burma do not usually receive bedding. They get their food, a little tobacco and betel nut and working apparel. I do not consider that it is impossible to measure the value of what they receive in this way, at least as regards rice and condiments and clothing. It is hardly possible to value the fish which they may catch in the paddy fields. As regards tobacco I think the ordinary practice is to give two cheroots and five betel nuts after each meal but I have not been able, in the short time, to verify these figures.

Question 70.—Sale prices noted in the revenue reports are not a satisfactory basis for the valuation of agricultural land. The reason is that the peasant proprietor rarely sells his land outright at the beginning. He mortgages it first of all and not infrequently obtains a further sum by threat that he will redeem the mortgage and re-mortgage to someone else. When he finds himself unable to redeem the land he executes a deed of sale and the consideration is the mortgage money *plus* all the unpaid interest. This often amounts to very much more than the value of the land at the time when the deed of sale is executed. For example, in 1904 and 1906 there was a land boom and when this collapsed in 1907 the price of land fell heavily, but the deeds of sale executed in that year did not disclose the fact, for the consideration stated in them was the mortgage money and the unpaid interest.

It is not feasible to value agricultural land as a multiple of land revenue. Land revenue is fixed for twenty years but the population wanting land, the market price of the crops grown on the land and the amount of money in circulation are not so fixed. If a multiple of land revenue is declared at the beginning of a settlement period to be a fair value of agricultural land, it may well be altogether inadequate long before the settlement period has elapsed. Such difficulties can be overcome only by a local intensive enquiry.

Question 83 et seq.—The report of Mr. Clayton compiled about 1909 on indebtedness in the delta division contains much valuable information. If an inquiry is held into indebtedness the unit of measurement should be the *household*. Where a husband is an agricultural tenant with an unmarried son who is learning to plough and a boy who herds cattle while his daughter makes money by bazaar selling as is not unusual, and the incomes are pooled, while his wife cooks for the household and the outside labourers employed, then any debt should be set off against the joint income.

Any inquiry into indebtedness should have at its main object to find out whether the debtor is solvent. Indebtedness is a normal state of the peasant proprietor or agricultural tenant and in itself is a fact of no importance. Reference is invited to paragraph 16 in my report quoted above. I do not think that any general inquiry into indebtedness will prove reliable. It is very difficult to determine the solvency of a debtor and can be done only by a special intensive inquiry.

Question 87.—The cost of living is very difficult to ascertain. I think I am right in saying that assessment rates were at one time fixed in Burma after taking into consideration the cost of living ; the assessment was made on net profits. It was found, however, that the cultivators profit and loss account when worked out in this way resulted in loss and the method was abandoned and the assessment made with reference to net produce. In any inquiry into the cost of living, money spent on drink and gambling should be taken into account as well as money spent on funerals and religious ceremonies. Instead of inquiring what the cost of living is, it might be better to find out the general standard of comfort prevailing.

Oral evidence, the 22nd April, 1925.

Chairman.—*Q.*—Are you in favour of an economic enquiry, generally for Burma as defined in the terms of reference ?

A.—What is it going to cost.

Q.—A reasonable outlay ?

A.—At a reasonable expenditure, yes.

Q.—In the questionnaire we have given a number of heads under which the enquiry may be conducted—wealth income, production, etc. Which of these heads do you think are important for Burma ? Since an economic enquiry is necessary, in what order would you proceed and which of these would you take up first ?

A.—I would take up wages first. Then I think, I would take up production ; for the third, I would take up income. I do not see very much the point of enquiring into the other three ; it is so difficult to investigate them.

Mr. Kaul.—*Q.*—The cost of living ?

A.—All the experience of settlement officers in this province is that it is very difficult to discover.

Chairman.—*Q.*—Now, assuming you have to carry out an economic survey in the districts, and assuming you have a district census office and a branch office, further assuming that we can confine our attention to obtain statistics of production under agriculture, pastoral and dairy products, mining, industries, forests and fisheries, what agency would you employ ?

A.—I think you will require a special agency.

Q.—Would not your revenue agency suffice ?

A.—I do not think so.

Q.—You have got fairly satisfactory agricultural statistics ?

A.—Certain of them are, on the whole, reliable.

Q.—The bulk of production is from agriculture ?

A.—I think 70 per cent. of the population is engaged in agriculture.

Q.—So that the production is even larger than is indicated by the population ?

A.—Excluding the distributing and transporting agencies I dare say it is.

Q.—Since you have an agency for the collection of statistics of agricultural production, could you not use the same agency for other products ?

A.—No, I think it would require a special agency for anything outside agriculture.

Q.—For factories and mines you want special agencies ; but for products from other sources will it not be possible to do without a special agency ?

A.—I think you will need special agents for cottage industries.

Q.—If Government decide to have production estimates for each city, town or village, and also to carry out other investigations by intensive studies, would it be necessary to have an expensive expert staff for each district, or only for the province as a whole ?

A.—Do you mean to make an enquiry in one district and generalise from that ?

Q.—In the beginning, we want a stock-taking census. For a year or two after that, we shall have to keep a smaller staff for a yearly census, and periodical censuses ?

A.—We have no staff in the province for that purpose. We should have to create a new staff.

Q.—It has been suggested that it is necessary to have a central bureau of census and statistics, and provincial and district census offices. After that will come the special staff for collecting information about production and also to carry out the special intensive studies we have in view. Have you any comment to make ?

A.—The only thing I have to say about it is that it will be very expensive.

Q.—It is recognised that an economic survey means expense. What would you consider justifiable expense as compared with the population ? Supposing you put it at Rs. 15 a thousand, would you consider that justifiable ?

A.—I would not proceed in that way. I would first make special enquiries about the poor classes. The whole question depends upon the cost. A general statistical enquiry may produce very valuable results, but the cost would be prohibitive.

Q.—Would not the information be of vital economic value to the country ? Would it not help the Government to formulate its policies for the future ?

A.—It will certainly help.

Q.—What makes you think the cost will be prohibitive ?

A.—Unless you go into the thing properly with trained men, your results will be entirely unreliable.

Q.—But why should you think the cost would be prohibitive ? Have you any special reason ?

A.—It is a very large area, and a very large staff of highly trained men would be required.

Q.—Supposing a stock-taking Census of Production were taken, how long would it take ?

A.—You are referring to actual enumeration and returns. I do not know. I think probably if you are going to enumerate all forest products you will have to have a large survey.

Q.—You do not think the village headmen will be able to collect this information ?

A.—No.

Q.—Do you consider legislation necessary if you want to have a production census for the province or the country ?

A.—I think you will require legislation to get such returns.

Q.—In some cases there would be inquisitorial powers ?

A.—I do not see how a census can be complete unless you have the right of imposing an order upon the people to get statistics and returns.

Q.—Are you in favour of the centralisation of statistics ?

A.—You will have to give very great latitude to provincial offices.

Q.—Have you any objections to the proposed organisation ?

A.—None, except on the score of cost.

Q.—What would you consider a reasonable outlay per head of population ?

A.—I should have to think that over before I give any answer which would be worth anything at all.

Q.—We want to know what agency you would recommend for each village and town ? Would you like to have that done at the cost of the Municipalities ?

A.—From what I have seen of them I do not think Municipalities would do it.

Q.—Would the census help the people to improve themselves ?

A.—I hardly think that would affect their lives very much.

Prof. Burnett-Hurst.—Q.—Have you heard of the statistics of any country being utilised for formulating economic policies ?

A.—Statistics of exports and imports of Great Britain were, I think, used.

Q.—For tariff controversies. But apart from that ?

A.—I suppose statistics are used in discussing the capital levy.

Q.—But statistics relating to the economic condition of the people ?

A.—I take it that statistics of the consumption of absinthe in France were taken before it was prohibited ?

Q.—Yes. A witness stated that statistics were used for formulating policies in special cases here and there ?

A.—I should have doubted that. It is putting it too narrowly.

Q.—Would you put it wider ?

A.—In a way.

Q.—The witness expressed his opinion, but I wanted a second opinion.

A.—I think certain statistics are made use of, or rather misused by both sides in local option controversies at Home.

Q.—You have made a special study of the conditions of agricultural tenants and labourers in the Delta area ? How long did it take ?

A.—Seven months.

Q.—Did you have a special staff for the purpose ?

A.—I had one clerk. I utilised all the Land Records figures. If you look at page 29 of my Report the figures given there come from the Land Records.

Q.—Did you select certain village tracts ?

A.—Yes, in each district.

Q.—“ In eleven districts two tracts were selected and investigated, in Pyapôn three and in Prome one ”. How many tracts are there in a district ?

A.—One hundred to two hundred.

Q.—So that you took a sample of one in fifty or a hundred ?

A.—Something of the sort.

Q.—Did you find it difficult to ascertain information relating to the income of a tenant ?

Q.—I do not think so.

Q.—In Chapter 4 you give a tenant's profit and loss account ?

A.—Yes.

Q.—You state “ The framing of a profit and loss sheet for a tenant is difficult ; he keeps no books of account and his memory for small expenditure is weak ”. So that when you come to the collection of family budgets, you are likely to get inaccurate data ?

A.—I should think so.

Q.—Do you think it would be possible to select certain villages which may be regarded as typical, and make them the subject of intensive studies by employing trained investigators to reside there for a considerable period of time throughout the year in order to ascertain the actual facts ?

A.—I cannot say that much will be gained in only a year.

Q.—What time do you suggest ? Would you be able to obtain information casually ?

A.—You would have to get all data by cross-examining and twisting it out.

Q.—Do you think you would get at the truth?

A.—That depends upon the personality of the investigator.

Q.—That is to say, you will have to employ a tactful and highly trained man, and one accustomed to the people?

A.—Yes.

Q.—What type of man do you suggest?

A.—A settlement officer or a co-operative officer will do. He could get any information he wanted from the records already in existence.

Q.—But it will be necessary to have a highly trained and well paid man to carry out the work?

A.—Yes.

Q.—I take it you would prefer accurate information for selected areas, which may be regarded as typical areas rather than a mass of material of doubtful accuracy collected at random and covering a wider area.

A.—Yes.

Q.—Do you think it possible to ascertain the wealth of individuals?

A.—No.

Q.—In your investigations in the Delta area, had you been asked to ascertain the wealth of individual families, do you think you would have been successful?

A.—I think it would be doubtful.

Q.—When you come to middle-class families in towns, do you think you would be able to obtain the information?

A.—A highly educated person may disclose the facts; I have no experience.

Q.—It is suggested that this enquiry should relate to different classes of people. Do you think the official classes would be prepared to disclose their wealth?

A.—I believe they do so to the Income-tax authorities.

Q.—Wealth or income?

A.—I do not understand. Wealth is composed of securities out of which interest accrues. If you take an insurance on your furniture, you are disclosing it. You disclose your securities if you apply for a rebate, exemption, etc.

Q.—Do you think the moneylender will disclose his wealth?

A.—I think he might, under severe penalties.

Q.—Do you happen to know of any country where they have carried out an economic enquiry by official agency on the lines suggested in paragraph 87 of the questionnaire?

A.—I do not know.

Q.—You are not aware of any such enquiry?

A.—No.

Mr. S. G. GRANTHAM, I.C.S., Officer on Special Duty, Land Mortgage Banks.

Written Statement.

I regret that I have had to deal with the questionnaire very hurriedly. Special work had suddenly to be done and could not be held over. Consequently I have only been able to give a part of a Sunday to this matter.

1. Generally I think no all-India project of an economic census should be taken up yet. Rather each province should take up such parts of the programme as attract it and seem to have such a bearing upon practical affairs as make them worth taking up at once. Each will have the benefit of another's experience before it takes up a new field. It must necessarily be expensive to try to provide a whole mass of statistics which would be "on tap" for all purposes. Working first with a restricted field of subject-matter in a restricted area, extension in both dimensions could be effected slowly as experience is gained and men are trained. A sudden inauguration of a large statistical bureau would cost a lot directly; there would also be indirect expense of deterioration of other administrative work if district officers were called upon to do much for it. And we should avoid any method which comes in the end to depend upon the village-headman or the revenue-surveyor. Both of these have enough to do already.

Only after some experience in the separate provinces should the question of unification for all India be taken up. It would then be possible to estimate what could be unified without loss of accuracy. Whenever complex statistics are compiled on a plan devised to suit a large area they are apt to lose some quality and become so much the less true or adequate description of the particular local areas for which they are originally collected.

2. For estimating the economic condition of the various classes of the people I am afraid I do not understand the applicability of Sir Edward Gait's classification of "occupations" for the Census of India 1911. Actually that was M. Bertillon's scheme which had been approved by an international conference in 1893 and was adopted by Sir Edward Gait for the Indian census of 1911 and used again in the Indian census of 1921. It is mainly a classification of sources of income; but it is based chiefly upon industry and only in a comparatively small degree upon occupations in the ordinary sense of that term. Some notes upon the difficulties of the scheme are given in the Burma Census Report 1921. Part I, Chapter XII, Articles 177, 178, 183 and a different scheme is suggested in Article 37 of Part III of the same report. It seems to me that for the purpose of an enquiry into the economic condition of the people something like this latter scheme is proper. From the point of view of economic condition the people of almost any one of the occupational groups of the census, and certainly those of any of the occupational orders shown in Appendix G (a), are too heterogeneous to be spoken of as a class. The principal skilled occupations might be

sub-divided by the industry in which they are practised and additional classes provided in each for masters and journeymen of small workshops. It will be found that a number of skilled occupations are upon the same level economically, and that for many skilled occupations practised under industrial conditions the particular industry for which they are practised makes no difference to the economic condition of the persons practising them. In Appendix A I notice Forestry and tea-planting are shown as urban occupations. But apart from this the right-hand portion of that appendix seems to be open to the same objection as the census scheme. The classifications of Appendices G (b) and (c) are also all by industries. A double classification, by industry as well as by occupation, will sometimes be necessary ; but the primary classification should be by occupation. Clerks for instance of different industries need not generally be separated.

There will have to be subdivisions by economic condition if any real use is to be made of the figures. Take again the example of the clerks and suppose the cost of living is being dealt with. It is obviously futile to work out a single average for the cost of living of all clerks including those on Rs. 50 and those on Rs. 500 a month. It is known however that expenditure upon necessaries does not vary so much as income ; clerks could be divided into salary-groups for each of which valid averages could be obtained as far as necessary expenditure is concerned ; the more highly paid in each group would generally spend more upon recreation and adornment than the average of their group.

The difficulty is that when representative figures for certain classes had been obtained, the population census would fail to give the total numbers in the various classes. That is precisely the reason why the occupational statistics of the census should be re-cast. The comparative numbers in each economic grade of a class could not of course be furnished by the population census ; they could generally be discovered or estimated with sufficient accuracy.

3. Such division is necessary for every set of statistics which relates to an area within which there is not approximate homogeneity in respect of the particular matter to which the statistics relate. An average is a quotient which has no meaning unless (a) the constituents of the numerator have a common characteristic, (b) the constituents of the denominator have a common characteristic (c) these characteristics have a relationship to each other and (d) the individual terms represented by the average do not vary excessively from each other. There is for instance no sense in speaking of the average area of Rangoon Town and the American continent. An arithmetic mean is a purely abstract conception ; an average must have a concrete meaning or it is nothing. This applies to medians and modes as well as means.

For Burma Mr. Datta offers no divisions. Sir Edward Gait gives Upper and Lower Burma. Upper Burma is too varied an area. A different set of natural divisions was used in the provincial census report of Burma in 1911 ; and with some modifications this was used again in 1921. A slightly different set of divisions has been suggested by Dr. Stamp of Rangoon University ; I understand that practically Dr. Stamp's

set has been given by Mr. French in his text-book of geography for Burma. Presumably any economic enquiries made would be organised by townships; the best natural divisions could be built up by a study of the general conditions and of the averages and other representative figures by townships. As a first rough guide some divisions based on those mentioned could be made. But at all times one ought to watch that each division is homogeneous with reference to the particular enquiry. The best natural divisions are only those which make least demand for special treatment.

35. The classification adopted in India for the Special Industrial Census of 1921 (which was effected in conjunction with the population census) was slightly different from that of "Large Industrial Establishments in India". I should think a consideration of these two schemes together would give the most satisfactory basis.

40. (a) If in any area the wages of a particular class vary from month to month it is obviously proper to state the different rates. The objection to preparing returns for selected villages seems ill-founded. If the villages are fairly representative of the area the procedure is perfectly good; there may be objections in some cases to the particular selection of villages.

(b) Obviously if different returns would be given in any area for important subdivisions of a class, that class should be subdivided accordingly. In Lower Burma it would be convenient to add a class of harvesters who are employed for about three months to reap and thresh paddy.

(c) The range is a good way of expressing the facts; but some indication should be given of the distribution within the range. The most usual rate might be indicated. In (c) below objection is taken to giving the average alone.

(d) Are the figures intended to represent rates of wages or the income obtained by persons paid at those rates? Rates of wages are of interest to employers of labour; incomes are of interest to the labourers and to enquiries into social and economic conditions. Both should be given. But there is no particular virtue whatsoever in the month as a unit of time; in fact there is danger because some reporters will multiply a week's pay by four and call the result a month's pay. See also reply to No. 43 below. Rates of wages are best stated according to the usual contract for their payment. Total incomes must be stated by the whole year because it is by the year that seasons repeat. If there is one season of the year during which alone such work is done the income from that work for that season is the same as the income from that work for the year. But special care is necessary to specify what figures represent. Generally it would be desirable to supplement the figures with others showing what other income the people concerned have. It is not possible to put all statistical information into tables; descriptive notes are frequently of immense importance.

(e) Perhaps the meaning of this is the average over time—in which case the statement of average wage is a statement of income. Compare

objection (*d*) which is that no statement of income is given. Perhaps the meaning is the average of the rates of wages paid. Compare objection (*c*) which is that the average is not stated.

(*f*) It is unlikely that there is ever a sufficiently firm basis for the figures to support the fourth decimal place in such averages, which I suppose are not below one-tenth of a rupee in any ordinary part of India. It is better not to give too many decimals because that suggests a more precise knowledge than is the case. Most of these figures are derived from selections from the field of events, and there would be slightly different results with a different selection. Even for the particular selection some data are probably inaccurate. I doubt also if anybody ever wants to use these figures in any place where a fourth decimal would be of importance even if correct. This is however a defect easily put right by ignoring as many decimals as one pleases. Incidentally it is not a question of the number of decimals but of the number of significant figures. The authority which prescribes a report should state how many significant figures it expects to be given.

42. What advantage is there in uniformity ?

To me it seems very unlikely that any really uniform classification over India is possible. Every attempt to extend uniformity in statistics where it does not exist in the conditions involves some sacrifice of accuracy or of detail. One might give a figure for ploughmen nearly everywhere ; but is the labour of ploughing comparable everywhere ? Apart from conditions of soil and climate and crop there is the question of what other labour is understood to be done. In some parts of Burma a man engaged as ploughman pulls up paddy seedlings from the nursery and transplants them ; in others the ploughman ploughs but others tend the oxen, others pull up seedlings, others transport them and others again replant them. In other words in statistics for ploughmen all over India one would only have a uniformity of the English translation of the local term that " ploughman " represents.

43. Sec. 40 (*d*). If one desires to know income, frequency *and* duration of employment must be known before rates of wages are of use. But neither proposal of this item is sufficient where people have such varied occupations as in Burma. (See any Burma Census Report.) Many Burmans turn their hands to all sorts of different things at different times of the year. For estimates of income one would have to take sample persons and estimate for a whole year and still study variations year by year. Often it is not possible to convert a seasonal payment to a monthly rate. For instance, a ploughman in Lower Burma must often work on until the holding is completely planted ; the period depends upon the weather. Early plentiful rain means finishing early. Early beginning of the rain with frequent breaks may extend his work five or six weeks. Conversion to conventionally equivalent monthly payments hides the truth besides overlooking the varying value of food received. See also reply to No. 45.

44. I imagine it is very rare for a casual labourer to have to wait till harvest or part of his remuneration. A casual harvester might perhaps wait a few days. Question 44 seems to relate to persons in permanent or seasonal employment. Why talk of daily or monthly wages in such

a case? The pay is for the year or the season, and consists of instalments by day or month and a final payment at harvest. If we speak of daily or monthly wages arithmetically equivalent to the whole (that is including a proportion of the harvest payment) we are likely to introduce two difficulties. One is that the harvest bonus or other payment is generally made in kind—or in cash representing an amount of produce (perhaps fixed, perhaps depending on the harvest) at the current market rate; such a payment is seldom a fixed amount of cash. Then one may estimate an average value; but one will fail to show in this way the riskiness of this part of the labourer's income—and thereby one will give a false view of it. Another difficulty is that such postponement of payment commonly means that the labourer borrows on the strength of the payment while waiting for it; the payment is therefore worthless than its apparent value because of the charges for interest. If such payments are converted to monthly wages careful description of the conversion is a necessary supplement to the figures.

45. All this is true. Yet there is a remarkable uniformity in the condition in which a married labourer finds himself. He is fed perhaps by his employer; but his wife and children must be fed and some of them must be clothed. Consequently, whatever the agreement as to pay may be, the labourer takes frequent payments of cash all through his working season. Even a bachelor often does this too, because he may be working elsewhere when harvest comes and will then incur expense in coming to get his due even if he can be spared from his harvest work, which is naturally improbable. So if he has ploughed he likes to be paid when ploughing is complete, and takes a cash advance accordingly. Now as always in these matters the question arises: What use is to be made of the statistics? Do we want to know the cost to the employer of his labourer? in most parts of Lower Burma at least that is exactly what was agreed upon, whether cash or kind, and if it was in kind it must be valued at the price at which the employer sells the rest of his produce. Do we want to know the value to the labourer of the payment? That is determined generally by current rates of interest or cash-produce exchange well recognised in the village. There is little if any personal equation: there is a market variation from season to season. Our Burma settlements have involved a great deal of valuation of such payments from the employer's standpoint. But they have converted from produce to cash at a low price corresponding to their valuation of the gross produce; a different price would be necessary to give the value required for the purpose now contemplated. I do not think labourers' wages paid in this way have been tabulated; but it would not be difficult to get figures because the rates are generally fairly uniform over considerable areas.

46. All returns should be classified according to areas which are homogeneous with respect to them. If differences are found to exist between irrigated and unirrigated areas it is obvious that a common average will have no particular meaning.

47. There is again the question raised for No. 45 of the employer's and the labourer's different point of view and the corresponding different valuations. Dwelling (for agricultural labourers) commonly costs the

employer nothing ; the labourer lives either in the employer's house or in a field-hut which has to be built for convenience of the work whether a man is hired or not. A bachelor labourer may be saving something ; but generally neither he nor the married labourer saves anything under this head. Allow nil.

For food—Is one to estimate the saving in the labourer's household by his absence or the extra cost to the employer by his presence ? These are different. Also there is the complication that a labourer in some parts expects to be better fed than he would be in his own home. For tobacco there is commonly a definite allowance which can be valued. Clothing and bedding are of small value which can be estimated for those places where they are given ; they are often not given at all.

48. I do not think people generally understand the median and quartiles. They like arithmetic means, and where the data are fairly uniform these are satisfactory. Where the data are not uniform it is often desirable to divide up the field into sufficiently uniform parts. But if a general average figure for the whole is really intelligible and is not merely an arithmetical abstraction, the choice of mean with standard deviation, median with quartiles, and mode with standard deviation must be made according to circumstances. Probably the best plan is to state all three.

49. Naturally. Hence the need to reform the occupational part of the population census.

51. There aren't any in Burma. The job is done. Usually a mid-day interval in day from sunrise to sunset ; but if circumstances demand t this must be cut down.

65.

} The year for all.

66.

67. No. There is always something else that compensates. Besides, such a valuation would be only conventional. Can state, if one likes, what similar things cost in some other place which is suitable for comparison.

73. No.

74. No. No methods possible.

75. I frankly confess I do not see the use of any such valuation. Is it intended to give each thing as its value the actual cost of producing it, the cost of replacing it, a capitalisation of what it saves in current expenditure or what ? What is the application to be made of the figures ? That will decide.

80. This depends on the degree of uniformity discovered in the classes into which the population is divided. Go on until further extension of the field makes no significant change in the averages or other representative figures.

81. Obviously these things should be included ; they are necessary to normal human life which is not that of a draught animal fed in proportion to foot-pounds of physical work done. But they should be separated from more indispensable things ; they show elasticity.

95. "In course of time" is a saving clause with much virtue. My own experience in the Census of 1921 was that the Special Industrial Census got badly done largely through coming close upon the ordinary population census. It had to be done over again nearly everywhere outside Rangoon.

107. Municipalities were not asked to defray the cost of census operations within their areas. They made the enumeration but forms and instructions were supplied free by Government. They paid the cost of one tabulating clerk for three months every year for 10,000 population. Thus municipalities contributed to the cost.

108. It is very unlikely that District Boards would clamour for this privilege. Villages have no funds for such a purpose.

Oral evidence, the 23rd April 1925.

*Chairman.—Q.—*What opportunities have you had of studying the economic conditions of the people of Burma ?

*A.—*I was Settlement officer for some years.

*Q.—*What other opportunities have you had ?

*A.—*I do not think that I have had any other special opportunities.

*Q.—*Were you the Superintendent of the Census ?

*A.—*Yes, but that does not help one.

*Q.—*Did the Census include a Census of Production ?

*A.—*No.

*Mr. Kaul.—Q.—*You had a good opportunity of studying the economic conditions of the people.

*A.—*The Census Superintendent in Burma has so many difficulties that although he has advantages for looking into matters of this sort, he cannot go outside his own proper enquiry as has been done in some other provinces. He cannot do things as they do them (for instance) in the Central Provinces, on account of the greater difficulty in getting about.

*Q.—*You say "I do not think any economic enquiry into production can be taken up." Why do you object to it ; what harm would it do ?

*A.—*It would cost a lot of money.

*Q.—*What do you think it would cost ?

*A.—*I have not attempted to go into that, but I should say the cost would be enormous.

*Q.—*What did your Census cost ? It was Rs. 14 per thousand for India ?

*A.—*Our expenses were much more than in any other Provinces. Everything costs much more here than anywhere else. For instance, we had to provide tables and chairs for the clerks, whereas we were recommended by the Census Commissioner to let them sit on the floor. That could not be done in Burma.

Q.—They have a much higher standard of living here ?

A.—Altogether. Our cost was 5.6 pies per head against 2.8 pies for India.

Q.—That is, double the average for India.

A.—Yes, it worried me all through, but I could not help it.

Chairman.—Q.—That was for the Census of population. As regards the Census of Production, assuming that it costs Rs. 75 per thousand, do you think that would be very prohibitive ?

A.—Rs. 75 per thousand ! I think we could use that money much better for other purposes. For instance, our vital statistics are very defective at the moment.

Q.—If you know the economic condition and take stock of your present position, would not that give the Government and the people an idea which would make them develop their prosperity ?

A.—Do we need a census for that ?

Q.—It would be statistical information which would shape the policy of the Government. You would know your present position, and then from year to year you would know what your production is and see whether you are advancing or not.

A.—I agree as to the value of statistics but then, that costs so much money. Could not one get sufficient information by special study.

Q.—You must have noticed that many civilised countries cannot do without statistics. If you want to keep the country in a backward condition, you do not want statistics ?

A.—When you are speaking of civilised countries, you are thinking of Western Europe and the Dominions, where the population answer the questionnaires sent out.

Q.—Where the people are in a very backward condition, their condition must be improved. That is the first thing the Government should give their attention to ?

A.—Yes.

Q.—In your answers to the questionnaire you say “ My own experience of the Census of 1921 was that the Special Industrial Census got badly done largely through coming close upon the ordinary population census. It had to be done over again nearly everywhere outside Rangoon ” Would you take the production census on a different occasion, not at time of the population census ?

A.—I think it must be so.

Q.—Do you think the Municipalities would pay the cost of a Census of Production in the same way that they have paid for the Population Census ; or contribute to it ?

A.—They contributed to the Population Census, but why should they contribute to the Production Census ?

Q.—Do you, as an administrative officer, not think that a knowledge of their own economic conditions is good for the people ; would it not

be of advantage to them to know or see if they have made any progress in the direction of production ?

A.—If the municipalities made a contribution to the cost, would they not be paying twice ? They have already paid as taxpayers of the province and have to pay again as Municipal taxpayers.

Q.—If the economic survey is intended for the benefit of unit areas, why should they expect other people to pay for it ? If you collect information about the conditions of the people in the Municipalities, of course, it is very useful for the city or town concerned. Do you not think it stands to reason that they should pay for it ?

A.—Have they not already paid ? If you make such a census of all the province, then everyone in the province has paid, including the Municipalities.

Q.—Assuming that there is no money forthcoming from the Government to spend on it, assuming that there is no special source from which the cost could be met ?

A.—*No reply.*

Mr. Kaul.—*Q.*—Townsmen pay less land revenue, directly ?

A.—The townsman, although he may not own lands, pays land-revenue indirectly in the cost of agricultural produce and he pays other taxes. He pays the municipal taxes for being a resident in a Municipal area. If you made a Census of Production in the town alone—if you did something which was only of value to the town—the town would have to pay for it.

Chairman.—*Q.*—This is a new activity, and if the cost cannot be met from the general revenues of the country, it will have to be paid for by somebody. Is it not right that the people of the locality, who would benefit most, should contribute ?

A.—This is a new matter that you are introducing. You have to cut your coat according to your cloth. If you cannot afford to buy cloth, you cannot have your coat. The Municipalities are not in a flourishing condition. Our municipalities are very poor.

Q.—Are they all like that ; are they in a state of bankruptcy ?

A.—I do not say they are in a state of bankruptcy exactly, but I say that they have no money to spare. I do not think the people are able to pay more than they do now.

Q.—We want to know how badly off they are, or, how well off they are. It is to ascertain their economic conditions and to ascertain their economic resources. What resources, do you think are not fully realised in this province ; what opportunities are being missed or not being sufficiently utilised ?

A.—I am afraid I am not ready with an answer. Of course, we have had enquiries with respect to sources of water-power.

Q.—Are there any great possibilities before it ?

A.—There is a scheme suggested for Rangoon. It is a very ambitious scheme, and would entail enormous expense.

Q.—How much is that going to be ?

A.—I think it is going to cost very much.

Q.—How far off is the source of supply ?

A.—About a hundred miles off. It is a large scheme with a large estimated income and a large cost.

Q.—You want industrial development.

A.—Yes.

Q.—What other projects are there for the development of the country and for utilising the resources of the country ?

A.—I do not think there is anything very much except the ordinary activities for the improvement of the crops and that sort of thing.

Q.—But this is a province with great possibilities ?

A.—It is generally considered so.

Q.—In which direction ?

A.—The Government are working in various directions. We have a lot of developments going on as regards agriculture. Everyone is considering agricultural improvements. There is a general effort all round, but it is rather different from some definite project. All I can say is that there is a general effort all round.

Q.—What are the possibilities of railway extension and a connection between your railway and the Eastern Bengal Railway ?

A.—I think that the general view is that, in the case of a connection with the Eastern Bengal Railway, the railway would have to run through a large tract of country which would be unproductive from the railway point of view, being barren, hilly country, which would never yield anything directly. Of course, whether the through traffic would pay is another story. Mr. Hindley came here a couple of months ago and saw the railway officers here. There is one short projected railway, sanction for constructing which was mentioned in the papers this morning.

Q.—In our questionnaire we have given certain tests for finding out whether we are making progress, namely, a census of production, wealth, income, wages, indebtedness and cost of living. Which of them do you think should be taken up first ; assuming that all cannot be taken up at the same time ?

A.—Do you mean by way of an extended census, taking everyone into consideration ; or, the best way of making a special enquiry ?

Q.—Are you in favour of an economic survey

A.—I believe in it when the time comes for it. I think we are many years away from it. The whole bent of my mind is to try to get by careful observation accurate data for every problem ; but I think there is no possibility of doing that now in the direction of an economic survey.

Mr. Kaul.—*Q.*—When would you be ready for an economic survey ?

A.—About two generations from now. I think it takes as long as that for education to have any real effect.

Q.—Then you would wait till almost 75 per cent. of the people were educated ?

A.—I think you would have to wait for some time, at any rate. It would depend upon having some classes sufficiently educated to make enquiries, and also upon the advance of general education.

Q.—That would take two generations, you think ?

A.—I think so.

Chairman.—*Q.*—If you engaged a sufficient staff and could give people an idea of their economic conditions, as compared with India, in the matter of higher education, would not it raise them to greater activity, in future, to improve their conditions ? Is it not up to the Government to give them that opportunity of understanding their correct position, instead of allowing them to develop haphazardly ?

A.—I do not think the people would pay so much attention to all that.

Q.—They may not pay attention, but would it not be right for the Government to lead them in the right path ? If all countries do it, and have international activities in some way or the other, and if you do not keep step with your neighbours, would you not suffer ? Is it not our duty to give them information which will show them their exact position and enable them to see if they are making any progress ?

A.—I think I would rather advance to that by enabling the people first of all to understand it.

Q.—Supposing you speeded it up and told them where they stood ; that it was necessary that their condition should be improved ; that they should learn to know what their present condition is as compared with their neighbours ; and that they could learn what their present wealth and their present income was, and what they were producing—if they knew their condition, would not that give them an opportunity of improving it ?

A.—We do not need to tell the Burmans all that. They are not very educated, but they are very clever. They know that without any statistics.

Q.—Why do you object to an economic survey being started before two generations hence ?

A.—That is not what I said. I said you would require two generations before you could do it. I do not like the idea of making a census of production unless there is a probability of getting accurate results

Q.—Are not accurate statistics obtained in other countries ?

A.—I do not know how accurate they are.

Mr. Kaul.—Q.—Has not a Population Census been made since 1881 ?

A.—We do not know how to verify that.

Q.—Is it not a fact that, in every Census Report, every Census Superintendent says that he has improved on the last occasion ?

A.—I can point out that I am one who has not said so.

Prof. Burnett-Hurst.—Q.—Is not that partly due to the fact that areas have been added, for the purposes of the enquiry, which, in the past census were not enquired into ?

A.—This is introducing a new story. When you say that a census is more accurate, you mean to say that this is a census in which the record is closer to the facts of the area it concerns. This is commonly said but I do not know how one can test that.

Q.—They give their reasons ?

A.—I said I made an effort to improve it but I cannot say that I have succeeded. I think, in my own mind, it was done better ; very strong efforts were made to improve it.

Mr. Kaul.—Q.—If we start a Census of Production, it may not be perfect at the start, but we can expect it to become more and more perfect ; till then the results will be taken for what they are worth, and everyone will have an opportunity of judging them at their market value ?

A.—Yes.

Q.—It is only by making an effort that you can hope to succeed ?

A.—Yes.

Chairman.—Q.—Do you think there is any village organisation which can help in the enquiry ? Assuming that we have committees of intelligent people for a group of villages, would it be of help in the collection of data ?

A.—I do not know of any. I have been away from Burma for two years, and great changes have taken place in the meantime.

Q.—So that country has changed ; has it changed for the better or the worse ?

A.—I think for the better. I have not been able to go out and see— I only hear of great changes.

Prof. Burnett-Hurst.—Q.—In view of the remarks made just now by Mr. Kaul that one should start collecting facts with a view to their improvement in accuracy in course of time ; if that were done, do you think that such figures as are published should at first be marked incomplete and dangerous until such time as they can be regarded as fairly accurate ?

Mr. Kaul.—I said it may be taken for what it is worth.

Prof. Burnett-Hurst.—*Q.*—Figures published in initial reports are always taken as such. Many reports say that they may be taken for what they are worth. In this case, do you think they should be marked as incomplete and dangerous ?

A.—I agree with you entirely ; only I do not think you need say that they are dangerous, but that you should say what their limitations are. I put notes of that sort on the title-page of each of my census tables.

Q.—Is it not a fact that the man in the street does not trouble to read the notes in the report ?

A.—I do not think that any statistician in the world would omit to note them. I personally should look at them.

Q.—But the man in the street—the politician, the social worker, the publicist—he is in the habit of going straight to the facts without reading the foot notes ?

A.—I often see figures quoted in such a way that I imagine that this is possible.

Q.—That is why your politician and publicist would be likely to quote from the figures published, without including the necessary foot-note ?

Mr. Kaul.—*Q.*—But if the foot-note would state that, then you would leave it to the public to attach what value they please to it ?

A.—The figures are qualified by what is in the foot-note. In the economic survey, I would expect to have a lot of explanatory matter sent with the figures.

Prof. Burnett-Hurst.—*Q.*—As a settlement officer, did you find that it was possible to obtain accurate information regarding income and indebtedness ?

A.—We made no effort to study income in Lower Burma ; I have only Lower Burma experience. The Settlement Officer has not to make proposals with regard to a tax upon income in Lower Burma.

Q.—Do you think that the information that they collect regarding income in Upper Burma is correct ?

A.—I know nothing about it.

Q.—Are the figures of indebtedness collected by the Settlement officers accurate ?

A.—I should say the rate of interest should be accurate.

Q.—The amount of indebtedness or the cause of indebtedness may not be accurate ?

A.—I think we are fairly accurate as to the total amount of indebtedness.

Q.—Is not that rather different from the expression of opinion of most Settlement officers ?

A.—Yes, I believe so ; but I made special efforts to grapple with this business.

Q.—The collection of statistical information depends a great deal upon the personal element ?

A.—It depends a great deal on the staff and the people from whom you have to make your enquiries.

Q.—You consider that for an enquiry of the nature referred to in paragraph 87 of the Questionnaire, the existing staff of Revenue Surveyors is not suitable ?

A.—I think the Revenue Surveyor has already enough to do.

Q.—Do you think that at present he is over-worked ?

A.—At any rate, he has got quite enough.

Q.—Assuming that you can increase the staff of Revenue Surveyors, do you think that this type of man would be able to give statistics fully under these heads—statistics of income and wealth ?

A.—No, I do not think so.

Q.—That is to say, you would prefer that intensive studies should be carried out by a highly trained, well paid and skilled staff of investigators in selected or typical villages ?

A.—Yes.

Q.—You approve of obtaining information relating to the economic condition of the people, do you not ?

A.—Yes.

Q.—You feel that this information cannot be obtained on a very wide scale at present, but you think that it would be better to make an intensive study and try to get the actual facts ? You would prefer to content yourself with a certain amount of information relating to a particular area, giving the actual facts, rather than endeavour to procure a great deal of information covering a very wide area, and obtain data of indifferent quality ?

A.—I would select such special areas, to represent as large a part as possible, and would try also to deal with different classes of people.

Q.—Would you prefer a scheme of this nature—divide up the province into tracts of similar economic characteristics, and then, within these tracts select your villages either at random, or select typical villages, and then subject these villages to an intensive study ?

A.—Yes, I would want somebody to make a general survey of the district in order to select the villages.

Q.—A general survey would be necessary ?

A.—Yes.

Q.—Do you know any country in the world where a survey of the nature described in paragraph 87 has been carried out ?

A.—No, I am afraid I do not know of any. May I just go back to what I said a little while ago. I fear I gave a false impression about indebtedness. I said I could get the amount of indebtedness. I was, of course, speaking of the agriculturists. I did not mean to imply that you could get the amount of the debts incurred through each particular cause or anything of that kind. In your question No. 85, you refer to the amounts originally borrowed and the accumulation of debts. I do not think you can get that in any country, because if I owe you Rs. 1,000 and I am due to pay you Rs. 100 as interest, I may probably fail to pay the interest, and you may put down the extra Rs. 100 to the same cause as the original debt or to the new cause which prevents me paying the interest. You can find out in five minutes what is the ordinary rate of interest for a particular class of loan; from the chetti or the local Burmans, you will get sufficient information about this for any practical purpose.

Q.—Will you kindly look at question 85 and mention which of the heads of information are likely to be accurate?

A.—“Amounts originally borrowed; accumulation of debt; repayments; debt outstanding, rate of interest charged, security, chief purpose for taking the loan.” This last is probably not accurate.

Q.—Do you think that when the Settlement Officer makes his enquiries, people deny that they are in debt when they are?

A.—No.

Q.—I understand that Burmans are rather inclined to hesitate about revealing their indebtedness?

A.—If you let loose a staff of clerks in the districts to ask questions, they will learn nothing. But if you go yourself and talk sympathetically with the people, and spend a lot of time over this, you can get answers. It is a long task and difficult; but it can be done.

Q.—A witness has suggested that a survey of the whole village can be carried out and information regarding each village could be obtained from the representative of that village, who would be on an advisory council. Do you approve of that?

A.—You would get only one man's general impression.

Q.—Do you think that this is reliable for collecting statistical data which is to be of economic value?

A.—I think that if the person who collected this information compared it carefully with other information, he might get a useful impression. The person who gives the information is a representative of the village.

Q.—Do you think he could give general figures which would be of value?

A.—He would not give you figures, he would give you his impression.

Q.—Do you think voluntary workers would be suitable for the purpose of an intensive study on the lines indicated?

A.—I do not think we have any.

Q.—Do you have to pay the Census enumerators ?

A.—No, we employ headmen, with some assistance in the village. The headmen, at any rate, have personal influence.

Q.—Do you think they could deal with statistics as regards income and wealth ?

A.—No. The census work was not very popular ; the people did it because they had to. A census enumerator is required to ask only simple questions and to record such answers as " Yes " or " No ", or " Burman " or " Indian " ; but when it comes to quantities and other matters of that sort, you want a much more careful investigator.

L11IEEC

U. SET, Commissioner, Rangoon Municipal Corporation.

Oral Evidence, the 23rd April, 1925.

Chairman.—*Q.*—What opportunities have you had of studying the economic conditions of your people ?

A.—I cannot say that I have made any systematic study of it. I started as a township officer in 1907—that corresponds to a *lahsūdar* in India. Later on, I was township Judge in Lower Burma.

Q.—You have been studying economics ?

A.—I have read some economic books—but I cannot say that I have gone into an intensive study of the question. Two years ago I was Examiner of Local Accounts, which meant touring about the country and studying the accounts of the different places. At the same time I have been trying to find out how the people are getting on.

Q.—Do you think the Burman population realise the importance of economic developments ?

A.—I do not think you can say that they fully realise it. The people who are politically conscious are able to make a beginning and realise that they should also have economic development, apart from political development.

Q.—The Government have asked us to prepare a scheme of economic survey, and to suggest methods by which information should be collected regarding the economic conditions of the people. In Burma, would the people in the village co-operate in this, and how long would it take them to understand, when they have thought it over ? Are there any communities who, if they had a little instruction, would be capable of being trained to prepare statistics of the existing conditions, and provide for their future development ?

A.—I do not think it will be possible to make the people understand.

Q.—They will see that in the past year they were growing so much rice, that the next year there will be so much more. They can prepare estimates for five years and also compare the conditions between one village and another ?

A.—Who are going to collect the information ? You will have to consider that. Otherwise, there is likely to be some sort of suspicion on the part of the cultivators.

Q.—In Japan, they prepare statements of production of rice and the various other crops, and you can get the full production for 10 or 20 years. Then, they maintain agents in the villages to collect information showing the total production in a village from year to year. That shows whether a city or village is prosperous or at a standstill. Could not something of the same sort be adopted here ?

A.—I think it will be possible after a certain time, but a beginning may be made.

Q.—The leaders in Rangoon or the cities will. I take it, be advising the villages, and the villagers would think it their duty to help ?

A.—Recently there have been constituted what we call Circle Boards and Districts Councils. These are of recent growth, but you may make use of this agency for the purpose. You must make a beginning.

Q.—Of course, there is more education here than in India, and the people here would be able to understand this sort of work better than the bulk of the people in India ?

A.—Up to a certain limit, they are more educated, but this is due to the existing system of teaching by the *Hpoongyis*, who give a certain amount of religious education.

Q.—That does not give them any idea of the present economic conditions ?

A.—I am afraid not.

Q.—Suppose now you want to employ enumerators for work of this sort, is there any chance of the cost being met by the villagers themselves, the Government bearing the cost of the superintendence ?

A.—You can make the District Councils and Circle Boards bear a certain proportion of the costs, but not the villagers.

Q.—Are the revenues collected in the villages taken by the Government ?

A.—There are a certain class of revenues which are independent of the Government. This is in the form of a cess. They take, for instance, a certain percentage of the land revenue and this they utilise in the village tract itself.

Q.—In making roads, looking to sanitation and all that ?

A.—Yes.

Q.—I understand there is a fund maintained from the profits of rice ?

A.—Yes, the rice control profit fund.

Q.—Is there any chance of getting something out of that ?

A.—That is in the hands of the local Government. The only condition, so far as I know, which is attached to the spending of money from the rice control is that it should be spent only for the distinct benefit of the cultivators as a whole.

Q.—Could not a portion of that be set apart in case funds are not forthcoming ?

A.—You will have to tackle the Finance Member about that.

Q.—Supposing you have a Provincial Census and District Bureau ; assuming a bureau like that is established ; there would be a Census office in every district, in each town and village, and all the inhabited areas would come within these three heads, *viz.*, city, town and village. What agency would you employ in the village, for instance, to collect information about the economic conditions of the people ?

A.—The existing agency. The most suitable would be the Revenue Surveyors. These men are, I understand, overworked now but it may be possible to arrange that they should do it.

Q.—They will want assistance ?

A.—Yes, they would want assistance. In the case of towns, I think it might be possible to interest the Municipalities.

Q.—You are now the Chief Executive Officer of the Rangoon Municipality. Do you think that Municipality would be willing to carrying out an economic survey at its own cost ?

A.—It depends upon what the cost would be.

Q.—Assuming that the cost will be Rs. 100 per thousand of the population ?

A.—The population is about three and a half lakhs in Rangoon ; it will come to Rs. 35,000.

Q.—From year to year it will probably be a small amount, Rs. 15,000, and say, Rs. 35,000 for the first two years. We are not certain about it, but assuming that a beginning was made with a stock-taking census, which is necessary, do you think that help will be forthcoming in the case of a town like this ? You do not want to commit yourself ?

A.—Apart from that, the Corporation will have to consider whether such an enquiry would be for the benefit of the whole province or the whole town. If it is a national affair, they would expect the Province to bear at least a part of the costs.

Q.—Are you in favour of advisory committees, who would help in the collection of information as to the economic conditions of the villages, or do you think the officers should work without any advisory committee ?

A.—I think it would be better to have advisory committees. It would disarm any suspicion.

Q.—Advisory committees, both for the provincial statistics and census office, and also for the districts, towns and villages ?

A.—Yes.

Q.—The main question is one of cost. You have got a population of 13 millions or so. If it cost about Rs. 100 per thousand of the population, the cost will be something like 13 lakhs of rupees. You want 13 lakhs for the initial census and survey extending over a couple of years. Would there be any difficulty in finding money in a rich country like Burma, if the people appreciate the importance of such a survey ?

A.—You will have to find it out of the existing revenue.

Q.—Somebody suggested to me that probably something could be got from the Rice Profits Fund. If no money comes from any other source, it might be possible to divert some money from that, if the Government agrees to it ?

A.—Yes.

Q.—Have you had any occasion to study the production of the country ; what is the value of the production of the whole country ?

A.—No, except the facts given in the printed returns.

Q.—We propose to conduct a census concerning the production, and also a census of the wealth and income, if possible ; also wages, indebtedness, cost of living, and so on. Of course, as regards rice, the information is already collected, and they are going to start a Labour Office here. To which of these tests would you attach the most importance, or in what order would you like those tests to be carried out, if we cannot carry them all out at once ?

A.—I would select production and wealth first, and then income, and wages afterwards ; also the standards of living. I do not know whether it can be done, but I would like to have the standard of living of the various classes investigated.

Q.—If we have to choose between the various classes, which do you think are the prominent classes ?

A.—I would say divide it into towns and villages, rural and urban.

Q.—What else ?

A.—I think these two would be enough.

Q.—Would you have the standard of living of the rural and urban populations ?

A.—Yes.

Q.—There are many graduates in the Universities who could do this sort of work for the districts. Could the graduates carry out the work ?

A.—Not at present.

Q.—Would they require training ?

A.—Not only training, but enthusiasm, too.

Mr. Kaul.—Q.—How many graduates do you think you had in the last year ?

A.—I think about 50 or 60.

Q.—Including how many Burmans ?

A.—50 or 60.

Chairman.—Q.—We may assume that the Municipalities and towns may be able to take part in the collection of the information ?

A.—In my opinion they could help.

Q.—In the villages the agencies are not strong ?

A.—No.

Q.—There is not much reserve yet ?

A.—No.

Q.—That will probably have to be done by Government agencies ?

A.—Yes.

Q.—What is the staff now employed in the villages ? Who are intelligent people and who could help in such work ? If you wanted a committee in the village what class would you choose its members from ?

A.—The difficulty is that we have no class distinctions. Any one who has got a fair amount of education and a fair amount of money is a man who has got some amount of influence.

Q.—You have no distinctions ?

A.—No.

Q.—Would the priests help in such work ?

A.—That would be outside their legitimate work.

Q.—Economics will not fall within the purview of their work ?

A.—No.

Q.—But they want to feed themselves ?

A.—They have got to be supported entirely by the villagers.

Q.—How many priests have you got per thousand of the population ?

A.—In Rangoon, there are about 6,000 or 7,000. It is very difficult to say. In Mandalay, the number is greater. It is supposed to be the centre of Buddhism. I should say there are a little over 12,000 there.

Prof. Burnett-Hurst.—Q.—Are they not entirely supported by the people ? They do not earn a living ; from the economic point of view they are unproductive ?

A.—Yes.

Chairman.—Q.—Has there been any economic survey of the production and wealth of the province ; has any been attempted by the Government or by private agency here ?

A.—No ; not that I know of.

Q.—Have you any public organisations of that sort ?

A.—No.

Q.—You have no political or economic associations ?

A.—We have a political organisation, but their efforts are directed to political studies. We have just started a small economic association, which is at present composed of 6 or 7 people. We hope in time to be of some use. We generally discuss economic questions relating to the province.

Q.—Are occupations visibly multiplying on account of recent developments in the province ?

A.—No, I do not think you can say that they are multiplying. We have some industries here ; there is the mining industry ; there is the paddy industry and the rice mills. We have a large number of mills growing up, but except for these mills, I do not think you can say that it is developing at all.

Q.—The question is, how are we to ascertain the wealth of the entire people ? Would the people refuse to give the information ?

A.—There would be some difficulty in finding that out.

Mr. Kaul.—Q.—How would you ascertain the wealth, then ?

A.—You will have to make a very intensive house-to-house enquiry, and even then I doubt very much whether the information you will get will be quite reliable.

Q.—You would not get it by direct methods ? Supposing you called for returns from the people ?

A.—I think the Income-tax Department will have that information. These advisory committees ought to be able, by their own personal influence, by indirect methods, to get the information.

Q.—They need not mention the names, merely give the total value ?

A.—Yes.

Q.—How are they to arrive at the total wealth of a village ?

A.—To get it from each villager.

Q.—Would not it be extremely difficult to do that ?

A.—In the villages, it would not be so difficult, but in the towns it would be. The neighbours would know their wealth.

Q.—If the wealth of the people of the villages was definitely known, would you not always expect that they would be subject to robberies and dacoities ?

A.—That is to some extent true.

Q.—That would be the result if these facts are published ?

A.—Even without its being published they have a fair idea who has wealth and how much each possesses.

Q.—They know this already ?

A.—Oh, yes.

Q.—The information obtained in that way would not be quite accurate ?

A.—It would not be reliable.

Q.—It may be under-estimated ?

A.—Yes.

Q.—Or over-estimated ?

A.—It is more likely to be under-estimated than over-estimated.

Q.—Of course, excepting jewellery, you will perhaps be able to get a fair idea ?

A.—Yes.

Prof. Burnett-Hurst.—*Q.*—Is not jewellery one of the main forms of wealth ?

A.—Yes.

Q.—So that you would be excluding the main form of wealth ?

A.—I was going to say that I do not think we should exclude jewellery at all.

Chairman.—*Q.*—It may be wrong then by a small percentage ?

A.—By 20 or 30 per cent.

Prof. Burnett-Hurst.—*Q.*—What would you regard as a small percentage—30 per cent. ?

A.—It would be between 20 and 30 per cent.

Q.—You may obtain a figure which may range from 70 to 130, that which is a very wide range, as 130 is nearly double the value of 70 ?

A.—In your large villages and towns I think the information will be out by 100 per cent. But in the ordinary village it would be less.

Q.—An error of 30 per cent, one way or the other will give you a figure ranging from 70 to 130 ?

A.—That would be a 100 per cent.

Mr. Kani. Q.—You think it would not be very much in the villages ?

A.—No, you could get nearer if the advisory committees are utilised, and they can be trusted to prepare accurate estimates.

Prof. Burnett-Hurst.—Q.—That only applies to the villages of Lower Burma and possibly to some of Upper Burma, but it would not apply to the villages in the outlying tracts, where you may have persons, like the people in the hill tracts, who are not particularly enlightened ?

A.—In the hill tracts, the villages are small, and I do not think you will have much difficulty there.

Q.—In some parts of Burma—the outlying tracts ?

A.—That is all paddy cultivation. There is not much wealth there.

Q.—Some of these outlying tracts are not as civilised as Lower Burma ?

A.—No.

Q.—And for that reason you are not likely to obtain very accurate information ?

A.—For that you will have to depend entirely upon the advisory committees.

Q.—How are you going to raise an advisory committee in the hill tracts ? The people in those tracts are backward ?

A.—You can still get a few more intelligent than the rest.

Chairman.—Q.—Can you have groups of villages and appoint a small committee for each group ?

A.—You must have one or two from each village on the committee.

Q.—They know how to read and write ?

A.—Most of them do.

Q.—What are the resources of the country which you think may be investigated with a view to their utilisation for the promotion of the wealth of the country ? What are the resources which are not at present fully utilised ?

A.—The only mineral resource we have is petroleum oil. I do not think we have any other resources worth speaking of.

Q.—Have you any ideas of your own as to the direction in which enquiry might be usefully directed, and what opportunities might be created for the people in order to increase their material prosperity ?

A.—That is a very large question, which takes time to answer.

Q.—Supposing we start a stock-taking survey, and for the first two years we collect information about the existing conditions of things, what staff would you use ? You have not got enough University graduates. Where would you get the staff ? Of course, some of the retired officials might be used ?

A.—It would depend also upon what material would be available at the time. Things would undergo a great change in 10 years' time.

Q.—Supposing a survey had to be carried out immediately, how long would it take, and what staff would you say we should employ ; would we get the staff ?

A.—We have the existing staff under the Government in each district. These are the Revenue Surveyors, and you can strengthen them.

Q.—Are there many retired officials who would be available ?

A.—I do not know whether you could get many.

Q.—You could get some ?

A.—Yes, some.

Mr. Kaul.—Q.—How would you ascertain the income ? Of course, wages can be ascertained by making enquiries from each industry established. Most of it you can ascertain from the employers. Would you obtain information from other people ?

A.—Do you mean land-owners ?

Q.—Yes.

A.—In the case of townsmen it is rather difficult to find out exactly, but in the case of land-owners you could easily ascertain it.

Q.—You will work it out from the land ?

A.—Yes.

Q.—They have no other sources of income ?

A.—Except in the case of such as have money lent out.

Q.—Can you suggest what we should do to find out the incomes, other than the incomes from land ? I suppose that, as regards land-owners, we can work it out from the Revenue papers, and obtain the amount of revenue derived from year to year. Then, there will remain other incomes ; would you suggest any method of finding that out ? For instance, we will take the example of a small proprietor who has a few acres of land and gets some paddy from it—just enough for his subsistence for the year—while he has to work for the surplus money to buy clothes and things with, and to live in affluence. He goes and takes up some employment ?

A.—I think you will find it very difficult to obtain any reliable information.

Q.—Do you think it would be possible to ascertain that income by some local committees ? Would the advisory committee in the village be able to ascertain that ?

A.—They will be able to give you their estimate of what a man's income is.

Q.—From all sources ?

A.—Yes ; and, at the same time, in towns, you can make use of the Income-tax Department.

Q.—But they complain that the income-tax returns are not very accurate ?

A.—That is quite true.

Q.—But would we not have to aim at something more accurate ?

A.—Yes.

Q.—The income-tax figures do not take into account incomes below Rs. 2,000 a year. There are large classes whose incomes are below that ?

A.—You can make use of the information which you procure in the case of other classes of the people.

Q.—You think you can make a detailed enquiry of all sorts of income ?

A.—Yes.

Q.—It would not be possible to arrive at it by some rough and ready method ?

A.—Only where you have your advisory committees, they can use their influence and obtain that information.

Q.—You think that the opinion of the advisory committees would be sufficiently reliable for all practicable purposes ?

A.—Yes, in the case of big towns and cities.

Q.—In the villages, you think it would not differ from the actuals by more than 20 or 30 per cent. ?

A.—By, say, 20 per cent.

Q.—How would you ascertain the income from pastoral products such as milk, butter, etc. ? A lot of milk is produced round about towns.

A.—It is very difficult. Milk is not used by the Burmese at all in the villages.

Q.—But in the towns, there is a lot of milk ?

A.—Yes, where you have a foreign population.

Q.—Could not the Corporations and Municipalities themselves arrange to collect all that information ?

A.—As a matter of fact, they are going to start a dairy farm.

Q.—I suppose they can ascertain the amount of milk coming into the city ?

A.—Yes, I think it would be possible.

Q.—I presume that the cities are the only places where milk is consumed ?

A.—Yes.

Q.—And to some extent in the villages ?

A.—Practically none at all.

Q.—It would be possible to get a record of the sale of milk ?

A.—Yes.

Q.—What about the cottage industries ? Are cottage industries carried on in the villages ?

A.—There is only one, weaving ?

Q.—And lacquer work ?

A.—That is localised in one place. Weaving is also localised in Amrapura and other centres.

Q.—It is localised, too ?

A.—Yes.

Q.—But, where it is not localised ?

A.—It would be rather difficult to get information.

Q.—Where it is localised, it would be possible to make an intensive study ?

A.—Yes.

Q.—What about the fish production ? Is it possible to ascertain the quantity of fish caught ?

A.—It would be very difficult.

Q.—It forms a very substantial portion ?

A.—Except as regards the fish brought to the bazaars, I do not think you can get a very correct estimate.

Q.—You say it would be very difficult, but could not the headmen give some figures, the accuracy of which would improve from year to year.

A.—In small fisheries, the fish is caught, not for the purpose of selling it, but for the purpose of consumption.

Q.—The people could not, in some places, give that information ?

A.—It might mean working from day to day.

Q.—But the local people ought to know how much fish is caught, day in and day out ?

A.—I doubt very much whether it is possible to obtain that information.

Chairman.—Q.—That has not been attempted yet ?

A.—No, but in the large industries, perhaps, they would be of use for the purpose of salting.

Mr. Kaul.—Q.—The point is about the fish caught outside. You do not think the local advisory committee could make fairly accurate guesses of the quantity of fish caught every year ?

A.—It may be possible to make fairly accurate guesses, but, as I was saying, it would mean keeping an account of the fish caught day by day.

Q.—It would mean an intensive study ?

A.—Yes.

Q.—So you think it would not be possible to obtain figures about the fish production without an intensive study and a staff ?

A.—Yes, it comes to that.

Q.—If an intensive study was once made, and you obtained an idea of the fish caught, do you think this information could be kept up by the local people ?

A.—I am very doubtful about it.

Q.—You think they would not be able to keep it up ?

A.—Yes.

Q.—Each time that you wanted to get at the figures, you would have to make another attempt ?

A.—Yes, I think so.

Prof. Burnett-Hurst.—Q.—Do you happen to know of any country where they have undertaken an economic survey of the nature indicated in paragraph 87 of the Questionnaire ?

A.—I cannot say that I have.

Q.—It has been suggested that what Burma requires is not so much an enquiry into the economic conditions of the people of Burma, as an enquiry into the economic resources of Burma, with a view to their development. What is your opinion ?

A.—I am afraid I do not quite agree with that. My personal opinion is that, even if you know what economic resources Burma has, if they are developed at present, it will mean the employment of outside capital and outside labour.

Q.—That is against the national aspirations ?

A.—Yes, you can put it in that way if you like. I would rather put it in this way, that it will not bring economic benefit to the country to the extent that she is entitled to.

Q.—From the point of view of the Burman ?

A.—Yes.

Chairman.—Q.—You want the improvement of the conditions of the people rather than the development of the resources of the country ; but, at the same time, preference should be given to this ?

A.—Yes.

Prof. Burnett-Hurst.—Q.—Are not the people of the country aware of their economic condition, and would not the money be better spent in improvements, such as roads, etc., than upon collecting information ?

A.—It has nothing to do with the possible economic development of the country. They have not quite made up their minds.

Q.—It has been suggested by a witness that it would be better to spend the money on, say, the building of roads, the improvement of housing and raising the standard of living of the people, rather than to spend it in trying to find out the existing standard. Do you agree with that ?

A.—I do not agree with that. I think it is much better to know how far the people are making economic progress.

Q.—You would rather have the economic conditions measured as far as possible ?

A.—Yes.

Chairman.—Q.—That would give you a basis upon which to build ?

A.—Yes.

Prof. Burnett-Hurst.—Q.—Knowledge is essential in the first place, before you can take any action ?

A.—Yes.

Q.—Assuming that there are 35,000 villages or village tracts in Burma, are you of opinion that each village or village tract should be visited for the purpose of an intensive study ?

A.—If you have an advisory committee, it would be their duty to visit each village. They will have to obtain information from each village.

Q.—And about each household ?

A.—It would come to that.

Q.—As there are 27 lakhs of people occupying houses, the advisory council would have to visit them all ?

A.—If you have on the advisory council, somebody who belongs to the village. I do not think it would be necessary at all to visit each house. He will have a fair knowledge of the wealth or capacity of the villages of that part.

Q.—That is to say, you would depend upon the figures supplied by a representative of the village giving the total wealth and average income, the total income, the amount of indebtedness and the standard of living ?

A.—Yes.

Q.—Would you depend upon the statements of the representatives ?

A.—I think I would.

Q.—Would not the personal element enter into that ?

A.—I do not think he has anything to gain by allowing a personal element to come into it.

Q.—For the purpose of collecting statistical data of economic value, it is absolutely essential to employ highly trained and skilled investigators, because statistical information is very difficult to obtain ?

A.—Any information that he may give may be revised. I think it can be checked.

Q.—So, over and above what he says, you would employ a staff to check the information ?

A.—Yes, after he has collected information, you have to employ a Revenue Surveyor to check it.

Q.—What salary does a Revenue Surveyor draw ?

A.—From Rs. 40 to Rs. 70 or Rs. 80 ; or from about Rs. 30 to about Rs. 50.

Q.—Do you think that Revenue Surveyors are sufficiently trained for obtaining that information ?

A.—I think so.

Q.—But, are they not already overworked ?

A.—They are. You would have to increase the number.

Q.—Approximately what increase in staff would be necessary ? Would it be about 50 per cent. ?

A.—Yes.

Q.—In addition to this staff, would you have to appoint trained investigators as supervisors ?

A.—Yes, one supervisor for each district or group of districts ?

Q.—How many districts are there ?

A.—Between 30 and 40.

Q.—I think there are 43. You would appoint one supervisor for each district. What pay would you give him ?

A.—Rs. 250 to Rs. 300.

Mr. Kaul.—Q.—A supervisor now gets Rs. 75 to Rs. 150 ?

A.—There are no supervisors.

Q.—What are these people called ?

A.—Inspectors ; but, you want a man whose education is very much higher than that of an inspector.

Prof. Burnett-Hurst.—Q.—I understand that there are no Burmans who are graduates in economics at present ?

A.—None.

Q.—There has been no training in economic science ?

A.—Not till last year.

Q.—Do you suggest the employment of men, untrained in economics, as investigators ?

A.—You can give them the preliminary instructions.

Q.—If you are going to obtain information of any value is it not essential that you should have highly trained men ?

A.—Yes.

Q.—At present, the supply of highly trained men is not forthcoming ?

A.—I do not think it is.

Q.—If you want an enquiry of this nature, you have not the staff of trained men to carry it out ?

A.—No, you have not.

Q.—It will also mean a considerable expenditure, if the number of Revenue inspectors are increased by 50 per cent. ?

A.—Yes.

Q.—What is the financial condition of the Municipalities ?

A.—Even now, they have to obtain contributions from the Government.

Q.—Excluding the Municipality of Rangoon, they are badly of financially ?

A.—Yes, and even as regards Rangoon, you cannot say that it is prosperous.

Q.—The average Municipality in Burma is in want of money ?

A.—Yes ; that I ascribe to the fact that the house and property taxes are not based on the rental value. If you can revise that, I think you will be able to find a way to carry on the administration.

Q.—From what I have heard, the members of the Municipality are anxious to procure more money for economic development and town improvement, and even now, very desirable improvements are held in abeyance for want of money.

A.—That is so.

Q.—Do you think the Municipalities would welcome the idea of spending money on an enquiry of this nature, when they have not the money to spend on much needed improvements ?

A.—They would not, but they may be induced to bear a portion of it.

Q.—Are the District Councils also in a bad way ?

A.—Yes.

Q.—So are the Circle Boards ?

A.—Yes. The Circle Boards have no separate funds and they depend upon grants from the District Councils.

Q.—Even they are suffering from the financial condition of the District Councils ?

A.—Yes.

Q.—So it is very similar to the conditions prevailing in other parts of India, where the local bodies are in financial difficulties. You mentioned that you would like statistics of income, wealth, production, the standard of living, etc., collected. In view of the financial condition of the local bodies in the provinces, and in view of the paucity of trained men for the purpose of investigation, would it not be preferable to select typical villages in typical tracts for the purpose of intensive studies so as to obtain accurate information about small unit areas, and gradually, from year to year, extend the enquiries to other parts ? Would not that be the better method ?

A.—I think it would be rather difficult to select a village which would be typical. The conditions vary from tract to tract, even in Lower Burma. For instance, in some places there is a richness of the soil and so on.

Q.—Suppose you sub-divided areas into tracts of similar economic characteristics, for example, according to the nature of the soil, and within those areas you prepared a list of the villages and selected every twentieth or fiftieth at random. You would secure a sample just as you would obtain a sample of rice for commercial purposes. Suppose you made an intensive study of rural tracts and tried to ascertain the facts with regard to these selected villages ; would not that give you valuable information about the economic condition of the people ?

A.—Information which you obtain in that way would be valuable within certain limits.

Q.—But it would be more valuable as time goes on ? The whole of Burma is a country of large expanse ?

A.—If you want a knowledge of the economic conditions of the people, you must have a knowledge of the conditions existing all over the country.

Q.—The tracts would cover the whole country, and then within the tracts villages are selected, so that you can obtain a sample of the whole of the province ?

A.—I see what you mean, but I think it would be much better if you can afford the money and have an agency going out and investigating the existing conditions all over the country, than to find out certain selected tracts.

Q.—Can you tell me whether the average Burman consumes milk to any extent ?

A.—No.

Q.—He consumes condensed milk ?

A.—Yes. There is some religious scruple about his milking a cow, because it would be depriving the calf of its legitimate milk. This is one of the reasons why he does not use milk.

Q.—I heard to-day that a certain professor recently came across a villager carrying a tin of Glaxo under his arm.

A.—I think that is the experience of most of us ; they go in for condensed milk, and if any one wants to get fresh milk he has got to make special arrangements. They do not even use *ghi*.

Q.—Can you refer me to any works in English relating to the economic life of the people of Burma ?

A.—I do not know of any book which has been written which deals purely with the economic life of Burma. There are numerous other books.

Q.—Enquiries are suggested into the economic conditions of the different classes of the people. Do you think that the middle and upper classes would resent enquiries into their wealth and income ?

A.—Yes, they would.

Chairman.—Q.—But they have to reveal it to the Income-tax people ?

A.—That is why I suggested that they do not reveal the truth ?

Prof. Burnett-Hurst.—Q.—Those reports are notoriously defective ?

A.—Yes.

Mr. Kaul.—Q.—You said that you would require a 50 per cent. increase in the number of surveyors. I would like to know what kind of work you have in mind for which you want a 50 per cent. increase ?

A.—For the purpose of collecting information relating to production, wealth, income, and so on. That is during the period of enquiry only.

Q.—Would you have to keep that up from year to year ?

A.—Oh, yes. You have still got to keep that up.

Mr. F. H. STEAVENSON, I.C.S., Registrar, Co-operative Societies.

Question 83 of the Questionnaire.—The only documents that occur to me are a report on indebtedness in the Delta by Mr. Clayton in 1909 and a report by Mr. Cowper of 1924 into the economic condition of the tenantry in a portion of Lower Burma.

84. The family, I suppose, but I am not sure that I understand the drift of the question.

85. I think the heads specified are adequate, and can suggest no improvement.

86. Trustworthy figures will be difficult to obtain. This is our experience even in the case of Co-operative Societies which, as collective units might be supposed to be interested in compiling the most accurate data possible on the point. I think that typical areas would have to be selected, and studied intensively. I do not quite understand what is meant by a "general survey." The truth will not be arrived at by means of superficial methods.

Debts to Co-operative Societies should, I think, be shown separately from other debt. Except in the case of loans taken to liquidate previous unproductive debt they are, in theory at least, productive. Generally speaking it will be felt that debt to a Society is one grade more respectable than debt to a money lender. The latter's interest is to add to the burden, while the avowed object of Co-operative Societies—not always followed in practice—is to wean their members from debt, except of course, debt by way of temporary accommodation in relation to the members' business.

L11IEEC

Oral evidence, the 23rd April 1925.

Chairman.—Q.—Should information regarding indebtedness be collected by special intensive enquiries, or do you think that the result of a general survey will be reliable ?

A.—Trustworthy figures will be difficult to obtain. This is our experience even in the case of co-operative societies which, as collective units, might be supposed to be interested in compiling the most accurate data possible on the point.

Typical areas would have to be selected and studied intensively—I do not quite understand what is meant by a general survey. The truth will not be arrived at by superficial methods. Debts to co-operative societies should, I think, be shown separately from other debts. Except in the case of loans taken to liquidate previous unproductive debt, they are, in theory at least, productive. Generally speaking, it will be felt that a fact to a society is one grade more respectable than a debt to a money-lender. The latter's interest is to add to the burden, while the avowed object of co-operative societies, not always followed in practice, is to wean their members from debt ; except, of course, debt by way of temporary accommodation in relation to the member's business.

Q.—How many co-operative societies are there throughout the whole of the province of Burma ?

A.—About four thousand rural societies.

Q.—Can you tell us the amount of capital they possess ?

A.—No. The majority of the societies are credit and agricultural.

Q.—What is your opinion in regard to an economic survey into the conditions of the people ?

A.—I am afraid such a survey would not help the Government very much.

Q.—Would it not help the population ?

A.—I suppose it would.

Professor Burnett-Hurst.—Q.—Do you consider the statistics of Co-operative Societies accurate ?

A.—I have found them to be accurate.

Q.—Has any effort been made in Burma to improve milk production ?

A.—There is no Agricultural Dairy Society of actual milkmen. The Rangoon Corporation has started a milk society with a view to improving the condition of the milk.

U. TOK KYI, M.L.A., " Sun " Press, Limited, Rangoon.

Oral evidence, the 23rd April 1925.

*Chairman.—Q.—*What views do you hold in regard to an investigation into the economic condition of the people? I suppose you are aware that in India there is considerable opinion in favour of such an investigation.

*A.—*I recently went to Delhi. I know that some members of the legislatures are keen on knowing the economic condition of the people. That is the educated view, which I share. Burmans realise the importance of economic development.

*Q.—*Are you in favour of an economic enquiry?

*A.—*As long as the expense is reasonable. I am in favour of training the people for an economic survey. Then the data and statistics collected would be useful to the Government and the people.

*Q.—*Are you in favour of the cost of the survey being met by the Municipalities, and, in the villages, by the District Boards?

*A.—*Yes, I think they ought to pay.

*Q.—*Supposing Government is unable to find the money, could money from the rice control profits be used for this purpose?

*A.—*I am afraid very little of the rice control profits is left. It is all used up. I am in favour of using money from the rice control profits, if you can get it.

*Q.—*If the Government asked the Municipalities to carry out the survey, would they do so at their own cost?

*A.—*They would perhaps bear half the cost.

*Q.—*Out of the various heads under which information should be collected, which do you consider the most important, and under which should information be collected first?

*A.—*Production should receive the earliest attention, then wages and indebtedness. There is a considerable amount of indebtedness in the province. The people are up against financial drain, foreign rule and exploitation. We have started some technical school, but education needs improvement. Enquiry should be made into the standard of living, distribution of wealth between the indigenous population and outsiders, and into transport. I know of people in the Delta who have not handled three rupees. This is due to the poverty of the soil. There are no economic societies in the country, although Police associations take an interest in economic activities. The G. C. B. A. handle the subject a little, but they are not trained in economics. There is a large amount of agricultural indebtedness. Co-operative societies have not as much as people wish in this direction.

*Professor Burnett-Hurst.—Q.—*Would it be possible to obtain the assistance of the G. C. B. A. in connection with the collection of scientific data?

*A.—*I daresay it would. They are interested in the economic condition of the people.

*Q.—*Do you know of any country which has carried out an economic survey on the lines indicated in question No. 87 of the questionnaire?

*A.—*No.

Q.—Assuming that Government ordered an economic survey, what agency do you think should be employed for collection of information ?

A.—I think it is possible through the headmen to obtain information relating to every village throughout Burma.

Q.—Would you be able in this way, to obtain information regarding the wealth of individuals.

A.—Not about the wealth of individuals, but in regard to the approximate income of villagers. The village headman should be able to do this after some training.

Q.—How long would it take to train them ?

A.—Five years.

Q.—Would you be able to obtain figures of indebtedness ?

A.—This can be obtained from the registration office.

Q.—Settlement officers have been trying to obtain information, which they publish in the settlement reports, but they say that the figures are unreliable.

A.—I do not agree with that. They are approximately correct.

Q.—The men who collected the data say that they are not trustworthy.

A.—I wonder why they waste their energy and public time if they cannot expect to get accurate data.

Q.—Do you think you could obtain accurate data by intensive studies.

A.—Yes.

Q.—What are the causes of indebtedness in Burma ?

A.—It is a rather comprehensive question. There are many causes. The chief cause is financial drain and foreign rule.

Q.—Statements have been made by several witnesses that the Burman is a spendthrift.

Witness.—Is the witness an official or non-official ?

Professor Burnett-Hurst.—I think the statement was made by a non-official.

Witness.—An Englishman, whether an official or non-official, has the same view.

Q.—You do not think that statement is correct ?

A.—We are painted as spendthrift, but that is not so.

Q.—I simply want your opinion. We are in the position of a judicial committee and we want to know whether that statement is true.

A.—We are not spendthrifts.

Q.—Do you think it will be possible to go to individual households and collect from them information relating to the various heads in question *viz.*, production, wages, income, cost of living, wealth and indebtedness ?

A.—You will find it very difficult. You will want a big staff and it will cost a lot of money. People will not give you the information.

Q.—I understand that there are only a few persons in Burma trained in economics, because only recently the subject has been introduced into the country. Higher education has not developed as in other parts of India.

A.—We are far behind in that respect, so that it will be very difficult to get trained men to collect information.

**Mr. E. J. L. ANDREW, Assistant Protector of Immigrants and Emigrants,
Rangoon.**

Written Statement.

The questionnaire reached me only on the evening of the 20th instant. Owing to the little time available to study it I did not propose to prepare a written statement, but on reconsideration I have decided to prepare a brief note as the information obtained by me during the course of my general investigations into the economic condition of labour two years ago may be useful.

At the outset, I would like to point out that conditions in Burma are entirely different to those prevailing in Indian provinces. The excessive dependence of Burma on the paddy crop is a very marked feature of its agriculture, the present and future wealth of the Province being so intimately bound up with it. Whether such dependence is desirable in the interest of both agriculture and industry is a matter with which we are not immediately concerned, but it appears clear that a greater diversity of cropping would place agriculture on a wider and therefore a safer basis, and almost certainly provide a greater variety of raw materials for local industries. This fundamental fact must be borne in mind when any scheme for an economic survey is being framed.

2. In any scheme of enquiry into the economic condition of the people the investigation should, I consider, also include questions relating to housing, sanitation, child welfare and maternity benefit.

3. In regard to agricultural production, the returns referred to are only fairly reliable. There is considerable room for improving the reliability of crop reports. Till about a decade ago the rice crop forecasts of Burma were noted for their accuracy, the margin of error between the estimates and actual exports being only about .5 per cent. In recent years this margin has been considerably greater.

One explanation appears to be that the normal acre standards have been perhaps somewhat arbitrarily revised. Another is that the district estimates of both area and yield are susceptible of improvement in respect to surveyed and unsurveyed tracts. A third is that the surplus crop of the previous year on hand is taken into account in computing the quantity available for export in a particular year.

4. As regards a census of industrial production, I consider that in the beginning owing to the absence of accurate information an annual census extending over a period of years till sufficient data has been collected, is desirable. Thereafter, the census could be held at longer intervals—say quinquennially. The census should relate only to the more important and larger industrial establishments, and the information should be collected through the agency of provincial statistical organisations. The information collected should be treated as confidential and where it is necessary to publish the same, names of reporting concerns and details should be omitted, general results only being published.

5. A quinquennial agricultural wage census is, I consider, of little value. Some of the objections to such a census are (a) that it fails to furnish information of the effect of seasonal vicissitudes on wages, as it purports only to record standard rates; (b) that it does not afford suffi-

ciently up to date statistical data to meet present day commercial and industrial requirements, and (c) that the machinery for the collection of these statistics inevitably suffers from the fact that it is only set in motion once in five years.

6. As regards the classification of industrial workers, each province should be left to decide its own system. To be of any value the classification should be based according to the peculiar conditions of each province. This is specially important in Burma where labour may be divided into two broad classes; (a) immigrant Indian labour and (b) the floating indigenous Burman labour. The first class may again be broadly divided into two heads, (1) labour recruited under agreement or contract, (2) free labour in the sense that a very appreciable proportion of Indian immigrants come to the province of their own free will in search of employment. Such people take their chance of finding what employment they can get either in Rangoon or in the districts, though it is a fact that a considerable number easily find employment in various agricultural pursuits and casual occupations. In regard to the former class, my enquiries indicated that European mills, public bodies and shipping companies invariably recruit labour through the agency of labour contractors. These contractors undertake to supply the labour required at certain prescribed rates, and recruit people in the principal Indian recruiting centres, such as Ganjam, Godavery, Vizagapatam and Kistna districts, as well as in the Tamil districts of the Madras Presidency: The greater proportion of the labour recruited consists of Telugus (Coringhees or Andhras) hailing from Ganjam and the adjacent districts. The people are recruited either directly by the contractor or through his agents. Advances are given, varying anything from Rs. 50 to Rs. 300 according to the peculiar needs of the case. The advances are calculated to provide for the upkeep of the families of the men recruited for a certain period, usually a year. Assuming an immigrant's family to consist of a wife and two children, with perhaps an aged father and/or mother and some minor dependent, the average cost of maintaining such a family for a year would not be less than Rs. 100. In addition, the contractor advances the passage expenses of the labourers recruited including the cost of feeding them during their journey to Rangoon.

Prior to embarkation, the labourers are required to affix their thumb impressions (as they are illiterate) to blank documents which are later on filled in with details regarding the conditions of recruitment, period for which recruited, the amount advanced, rate of wages, method of repayment of loan, etc. A reference to the records of prosecutions instituted under the Workman's Breach of Contract Act will indicate the extent of the practice. As a result, labourers recruited under this system rarely get out of debt, as they have no idea of the actual amount entered in the documents as advances received and that their wages are disbursed through maistries. A system of forced free labour and forced contributions to so-called charities is also prevalent. The other class of imported labour is in a position to select the occupation best suited to their individual tastes, and as they receive their wages direct, they get every penny earned. The cost of living in the districts is cheaper than in Rangoon and there are besides fewer temptations in rural areas for the spending of money on luxuries. As regards their housing accommodation, this class usually live in huts put up by themselves. In Rangoon, the majority of labourers have to pay rent for accommodation, the practice usually is for a group of men

to hire a tenement room and to share the rent equally. This makes living congested and insanitary. It is this class of free labourers that is in a position to save, and the bulk of remittances sent through the Post Office represent remittances by such people.

As regards the moving indigenous agricultural population, very little information is available ; nor is there information to indicate the proportion of imported and indigenous labour.

7. There is one other matter I would like to refer to. This relates to the method for measuring variations in the cost of living of different classes, and sections of the community in both urban and rural areas. I am of the opinion that the " mass-unit " system of Bombay is unsuitable to this Province. That system is based on the average of figures of 5 pre-war years for all India. No information is available regarding the production and consumption of a number of articles, *e.g.*, fish. Greater accuracy is likely to be obtained from an analysis of information in industrial workers' budgets.

Mr. W. L. BARRETTO, I.C.S., Deputy Commissioner on Special Duty.*Written Statement.*

Question 1 of the Questionnaire.—Enquiries on the six points suggested would be sufficient for ascertaining the economic condition of the people.

2. Sir Edward Gait's classification of occupation (Appendix A) appears to me to be a good basis to adopt.

3. I should adopt Sir Edward Gait's division of Province for collection of economic data in preference to Mr. Datta's.

5. Paddy crop cutting experiments are annually conducted in the presence of Township Officers. I recollect having done some myself as a Township Officer. Where reports are made by Township Officers the reports may be deemed fairly reliable.

7. An enquiry into the yield per acre of other crops such as fruits (plantains, custard-apples, mangoes) sugar cane and vegetables would be desirable and useful.

In order to keep down the cost selected Officers of the Co-operative Department in consultation with selected Officers of the Agricultural Department could be asked to enquire and report.

9. The number of cattle in each district is given in the annual Season and Crop Report. These figures are unreliable as most them are the result of guess work of headmen who collect the data. The headman is not adequately remunerated for the multifarious duties he has to perform and the collection of cattle statistics is one of them. If headmen are keen reliable figures could be procured if the data were collected at villagers' meetings when the information could be obtained without much effort or difficulty.

10. The returns of cattle deaths during epidemics in the Veterinary Department Annual Reports are fairly reliable, as Officers often visit the affected tracts and subordinates of the Veterinary Department and the headmen pay more attention to their work and their figures.

18. An enquiry into the fishing industry in Burma appears to me to be both desirable and useful. The methods of fish curing are very primitive. If fishermen could be made to realise that these enquiries ultimately lead to suggestions for their economic improvement it appears to me that they would give all the information asked for.

The farming out of the fisheries by auction has not been in the interest of either Government or the lessees but in the absence of a better method auction sales have been resorted to. In Maubin District the Group System which was suggested by Mr. English the Pioneer Co-operator in Burma has been attempted with some success. According to this system a number of fishery lessees stand mutual guarantee for one another and the lessees are given long term leases generally on the basis of five year average rentals. The Group System tends to remove some of the evils resulting from the auction system. A proper system of fixing of economic rents for fisheries appears to me to be very urgently needed. Fisheries in Maubin District were sold for approximately 8 lakhs, 10 lakhs and 12 lakhs in three successive years while the income to the fishery lessees does not appear to have increased in the same proportion.

29. It appears to me that it is advisable to get compulsory legal powers for demanding returns of production, etc., from employees.

38. It appears to me that it is desirable and at the same time possible to collect data relating to Cottage Industries, though the cost might be heavy. The Superintendent of Cottage Industries with the aid of his staff, which could be augmented, might be able to undertake the task.

42. The Bombay Labour Office classification of wage statement of Agricultural workers appears to me to be suitable, but each Province should be left to decide its own system.

70. The valuation of agricultural land could be based—

(1) On the basis of average sale price noted in the Registration Offices. (Care should be taken in case of land booms).

(2) As a multiple of land revenue.

(3) As a multiple of average rent paid.

(4) On a basis of average net yield of the land from local enquiry.

All four points could be taken together. Whether the land is subject to flood, droughts, erosion, etc., should also be considered.

71. The buildings in villages should be valued at—

(1) either the break-up value which is too low for purposes of calculation of wealth, though sufficient in estimating the value for purposes of security,

(2) the actual cost less depreciation.

73. I would not advise detailed enquiry from every individual in respect of all forms of private wealth. People would not care to state the value of jewellery they possess as this information is likely to be filtered down to dacoits.

83. The Official records containing information relating to indebtedness are the reports of—

(1) Mr. Clayton, and

(2) Mr. T. Couper.

84. The unit of measurement of indebtedness should be a household.

86. In order to get information regarding indebtedness special intensive enquiries are necessary.

104. It appears to me that it is necessary to pass a special legislative measure empowering the Statistics Bureau to demand all information required from the public in connection with the economic enquiries.

106. The cost of both the initial economic survey and the recurring charges should be met from Central and Provincial funds respectively.

107. The Municipalities should defray the cost of operations within their arrears.

108. Neither District Boards nor villages would be willing to defray any part of the cost of such operations as they cannot yet see their value.

Mr. S. GOPALASWAMI, Dip., Econ.

Written Statement.

General.

In addition to production, wages, income, etc., enquiries should also be made with reference to (1) Housing and Sanitation, and (2) Child Welfare.

Housing and Sanitation.

Housing is one of the major needs of the workers in towns and of the rural people. In many villages and industrial towns this has not been properly secured at all. In Rangoon, for example, the growth of slums and unhealthy dwelling places go hand in hand with the growth of the factories. From the 15th to 30th Streets, nearly all the houses are occupied by the cooly class. In each room six to twelve persons live. Except in rainy season nearly all of them go to bed in the open streets or sleep on the pials of houses, if any, or very near the drainage inhaling the unhealthy and foul air emanating from the gutters. The houses and streets are full of mosquitoes and flies. The rooms are dark and smoky and look dismal and gloomy. They have no windows except the doorway, and light and air should pass into the room through this opening only. Outside the city, the dwelling houses of labourers are in a dilapidated condition. There is no provision for good water. In Della for instance, the coolies of the Irrawaddy Flotilla Co., nearly 500 in number have to get water from two pipes provided for them. During the course of my investigations, I have seen them waiting for hours together to get one tin of water. I particularly noticed a young boy of 13 years or so waiting from 12 o'clock to 3 o'clock on the Empire Day (in the year 1923) to fill in one tin with water and could not do so because his elder and stouter competitors would not allow him a chance. Further, there is no provision for drainage. The dirty water runs through their dwelling place along a passage made in a most careless manner. To make matters worse, they also pass urine in the passage regardless of consequences. The latrine accommodation is not only insufficient, but also abominable. A large number of men and women have to use the limited number of them without any decency or shame. It is no wonder that amidst such conditions the death rate is high. In this city, it ranges between 36.75 to 47.68 per mile.

The housing condition of labourers in Bombay is worse still. There the *chal* consists of two, three, or four storeyed building, with single room units either placed back to back or separated by a narrow gully two or three feet wide, usually traversed by a drain. The rooms, specially those on the ground floor, are often pitch dark and possess very little in the way of windows, and even the small openings which exist are closed by the inhabitants in their desire to secure privacy and to avoid 'the imaginary evils of ventilation'. The ground floors are usually damp owing to an insufficient plinth; the courtyards between the buildings are most undesirably narrow and therefore receive insufficient sun and air. They are also very dirty. Water arrangements are insufficient and latrine accommodation is bad. A most insanitary smell hangs round these buildings.

In the villages of South India and Burma, the houses built are more neat and clean. But yet, they admit of further improvements as regards

ventilation and accommodation. The sanitation especially, drainage and latrine, is not very good. In some villages immediate measures, have to be taken to improve the sanitary conditions.

In large industrial towns, it is high time that the housing accommodation should engage the serious attention of the employers and the State. India and Burma are in a stage of industrial transition. If the industrial employers want to secure a permanent labour force, it is essential that the labourers should be provided with good and suitable dwellings. Unlike the industrial centres of India, Rangoon is specially fortunate in possessing waste lands. If the employers combine with the Municipalities and the Development Trust to lay out Industrial centres in accordance with the requirements of the workers, much benefits would accrue. In planning such centres, care should be taken to provide recreation ground, clubs and rest houses and parks for workers and their children for recreation. Long avenues of trees give the place a pleasant appearance. If the industrial centres are created in distant places special transit facilities should be provided for them.

Child Welfare.

In any Economic Enquiry, child welfare must engage the serious attention of the committee. In Burma, high birth rates were returned for rural areas for 1923 by Kyaukse (38.10), Yamethin (37.92), Lower Chindaun (38.06), Pakkoku (37.16), Sandoway (36.47), Shwebo (35.19), Mandalay (34.68), and Henzada (34.04), and low rates by Kyaukpyu (21.19), Pypon (22.08), Bassein (23.75), and Taungoo (23.16). The Districts of Rangoon and Irrawaddy Divisions show an increase over 1922 Year's rate and those in Arakan a decrease. There has been an increase in the towns of 858 births consisting of 476 male children and 382 female children.

At Thayetmyo especially, the birth is so low that there is no doubt that "many births go unregistered". The only check on the accuracy of the headman's registers is that occasionally exercised by the Municipal vaccinator and this is obviously insufficient.

As regards rural infant deaths for the same year the children that died under one year numbered 49,460 against 50,324 in 1922 and 46,474 in 1921. The Urban Provincial Infantile mortality rate for the year was 289.80, (males 310.15 and females 268.26). From all towns of Burma, 5,138 male children and 4,201 female children making a total of 9,339 were reported to have died.

The cause for this high death rate was attributed to the epidemic of measles and chickenpox. Some of these cases died through complications such as pneumonia and bronchitis. The chief causes are said to be (1) carelessness, ignorance, lack of cleanliness, and the barbarous method of "Wan Swais", (2) insanitary conditions prevailing in houses and their surroundings. It is time that steps were taken to organise a society for the prevention of Infant Mortality and to arouse the people to the importance of taking proper care of expectant and nursing mothers and of infants during the first few years of life. The Burma Branch of the Indian Red Cross Society has been entrusted with the administration of the child welfare (Burma) Endowment Fund. With all the activities of the society, more steps should be taken to protect the welfare of the children, both by the municipalities and local boards and the Government.

The employment of large numbers of children is a feature both of the cotton mills in Bombay and the Jute mills in Calcutta. Stricter provisions must be made in future legislation to safeguard the health of child employees. Wholetime certifying surgeons should be appointed for large industrial centres whose duty it ought to be, not only to give necessary age certificates, but also to carry out medical examination at stated intervals, of all children below the age of 15. Further, before a child of 15 is allowed to become a full time worker, the certifying surgeon should be required to give a certificate stating that he or she is fit to undertake such employment.

Question 2.—In my opinion Sir Edward Gait's classification may form the basis for estimating the economic conditions of the various classes of people.

Question 3.—Yes. The provinces should be divided into tracts which are more or less similar in economic characteristics. It seems to me that for this purpose Mr. K. L. Datta's classification is better than Sir Edward Gait's. But there also the classification is not quite complete. In certain respects it is faulty. For instance, in Appendix A3 Mr. Datta has grouped Salem, Coimbatore, Trichinopoly and Tanjore together as forming the Cauvery valley. But as one who is intimately acquainted with those parts, I can confidently assert that Salem differs in many respects from Tanjore. The one is a rocky, arid plain, while the other is situated in the rich alluvial soil of the Cauvery Delta. The first depends upon rainfall for water, while the second gets plenty of river water. Even the people of Salem differ from Tanjorians in many respects. The Salem people are very strong, hard working and industrious. But the Tanjorians are very lazy, indolent and easy-going.

Should the different parts of the Madras Presidency, for instance, be divided according to similar economic characteristics, the proper division would be to classify the deltaic district of Tanjore with the other deltaic districts of Godavary and Krishna. But even here the system is faulty. The people of Tanjore differ in many respects from those of Krishna and Godavary. To cite an example, the people of Godavary and Krishna do not drink coffee either in the morning or in the evening, while the Tanjorians are notorious coffee drinkers. This will account much for the difference in the Family Budgets of the people of both the districts.

The best method seems to be that the division must be on linguistic basis. The Tamilians and the Telugus, the Malabarians and the Canarese people will form the best classification.

Production.

Question 7.—Yes.

In provinces where there is no subordinate revenue agency and a rough estimate of area under crops and of outturn is made by the local officers, the best method will be that the village headman must be trained in crop reporting. The services of karnams may be engaged too. Wherever possible, educated men living upon their estates and following agriculture as their occupation may be trained in this business. In such cases, a definite status should be given to them. A small remuneration or recognition of their services will be a proper incentive to do their duties conscientiously.

To collect the statistics of the products and to take a census of cattle and other life stock, unless a well conceived plan of rural reconstruction is laid down, it is not possible to do so. It seems to me that the best way of doing it, would be the municipalisation of dairies and poultry. Every dairy which keeps two or more cows, two or more sheep or two or more pigs, every poultry farm which keeps four or more fowls in a Municipal area or within the limits of a Local Board can be municipalised. In villages, such dairies and poultry farms can be licensed. When municipalised there will be no difficulty in collecting data. But in the case of villages, even though licensed, accuracy for a time will be a little difficult ; but in course of time when the village headman or karnam is trained in this business, all difficulties will be overcome. But above all, the most feasible method and the best way of doing it, will be the introduction and formation of co-operative dairies and egg-societies and co-operative produce societies. It is unnecessary for me to deal with the advantages of co-operative societies. In Denmark, which is purely an agricultural country every man who keeps a dairy, every huxter who keeps a poultry farm, every producer of crops, vegetables and fruits, is a member of a co-operative society. All produce and all products are disposed of to the public only through such societies. There is no reason why the same cannot be followed here. To bring about such organisations, Government cannot of course do much. All that they can do is, they will lend their moral support. The Agricultural Department will place their services at the disposal of the public. But philanthropic societies, social agencies, politicians of all shades of opinion may join hands in promoting organisations of such kind. In 1896, Sir Horace Plunkett invited all the politicians of all shades and public bodies in Ireland to enquire into the condition of co-operative societies and to report on the help needed. As an outcome of it is the formation of I. A. O. S. which does splendid work in that island to-day. There are now three main departments of co-operation in Ireland, viz., (1) dairies, (2) egg and poultry societies, (3) and supply societies. If only our people talk less of politics and more of economics, a good output of work will be done.

To obtain complete statistics about fisheries, professional fishermen of the sea coasts as well as the villages where there is fresh water, should be licensed. The licensing officer will be the best person who will be responsible for the collection of statistics.

Census of Industrial Production.

In estimating the value of production of the industries of a nation, the main difficulty which presents itself is not the obtaining of data, but the fact that as industries are inter-dependent and use each other's products as materials, a considerable amount of duplication is involved in the aggregates arrived at. The value of the same product may appear not only in duplicate but five or six times over. For example, the iron ore appears first in the value of output of iron ore mines. The ore is purchased by the iron smelters and when the value of pig iron is returned, that value includes the original value of the iron ore counted a second time. The pig iron is converted into steel and when the value of steel is returned it contains the value of the original iron ore for the third time. And so the process may go on. Again the value of materials used by a firm, whether native or imported and the value of work given out to other firms should be subtracted from the gross output of trade, the net output thus arrived at representing the value created by each industry and added to

the materials which it used. It should also be observed that the values considered must be the values of the goods at places of production, *i.e.*, must be the factory or mine prices of the products and not the ultimate selling prices after they have been dealt with by middlemen.

In India, a census production act must be passed by the Imperial Legislature which should be made obligatory on the part of every business man, be he a merchant, firm manager, or industrialist to furnish all the information that is required by the schedule. Statistical Bureaux should be opened in every Province and in the Government of India to collect information relating to large industrial establishments. All matters of detail given by the industrial establishments should be kept confidential by the Statistical Department as otherwise trade secrets will leak out. Persons of integrity should be chosen as officers to collect the data. In the publication of data, only the total amount under each head should be given. The details should not be made public.

Census of production may be taken quinquennially. It is desirable to follow the lines of census instituted by the United Kingdom in 1907. It is better to adopt the classification given by the Department of Statistics than to follow other methods as it seems to me that it is more scientific and accurate.

Large industrial establishments may be defined as those governed by the Factory Act.

In addition to the information proposed to be collected under different heads, I should like to suggest that a classification should also be made under the heads (1) "Indian Industries", that is, industries financed and managed by Indians. (2) "European Industries". This classification will give us a fair idea whether we are really progressing or not, industrially.

As regards cottage industries, the Superintendent of Cottage Industries in Burma, and the Director of Industries in Indian Provinces may be able to collect census of production by means of persuasion and with the aid of the executive officers of the districts. It is by patient and intensive enquiries quite possible for them to collect the required information.

Wages.

It is essentially important that wage census should be taken in each and every province. Statistics regarding employment, including occupation and wages, have hitherto been of little use, partly because figures collected were out of date when published or often "injudicially" selected. In unorganised industries, the wages were not precise. In future, the increasing demand for labour and its increasing fluidity will make information of this class of much greater importance to employers. The authors of Industrial Commission Report add that a report that a certain class of labour is seeking employment in a particular district, if promptly issued, is of much more use than a statement of the wages it drew last year. The information which the local statistical Bureau of labour should be in a position to supply, ought to be of more value to employers than that available hitherto.

In Burma which depend upon Indian labourers for the working of her industries and agricultural operations, this suggestion is of particular value. The contract system of labour will disappear then, the maistries

will go away and there will be direct settlement between the employer and the labourers. If the employers cannot recruit labour, the Government on their behalf can take responsibility for recruiting labour. To the suggestion made above, if it were added another, *viz.*, the publications of the report on wages in vernacular languages of India, it would be a great incentive for the labourers to move freely to places where labour is scarce and wages are high.

In collecting wage statistics, the work of the Bombay labour office is more accurate and worth imitating.

As regards agricultural labour, and the labour of the village artisans, it is not possible to gauge accurately the number of hours he (or she) works. It is generally true that he begins his day's work with the break of the day and finish it off at sunset. But the Indian labourer is proverbially a leisurely man. He is a stranger to the value of time. Often times he stops in the middle of his work, talks a little with his neighbour, transacts a small business, or if he has nothing to do, takes out his bag and chews beetlenut and leaves. Besides the interval for his breakfast, the little bits of time he snatches now and then, would amount to some hours. On the whole he may be said to work for 8 hours a day.

In some villages, the labourer is paid in kind. In some cases, he is paid partly in cash, partly in kind. In calculating the wages, the value of the kind paid to him must be priced according to the marketing rate.

In grouping the village artisans, we may include potters, *i.e.*, those who do bricks, tiles, etc., and matweavers.

Income.

The income here referred to is, I suppose, the National Dividend which is the aggregate of the incomes of the people. When we measure the national production, we measure the output of all kinds of commodities, good and bad, useful and useless. When we measure the national income we measure all kinds of incomes, earned and unearned. These incomes are partly drawn in respect of the material production.

Very largely incomes are drawn in respect of services and only part of those services contribute to the value of the material production. A very large number of people are concerned in wholesale and retail distributive trades, and the incomes drawn by middlemen enormously enhance the values before the goods reach the hand of ultimate consumers. The figure expressing the national income will tell us nothing as to whether these services are useful or useless.

In addition to the distributive agents of all sorts, there are the incomes of professional men of many kinds, who give services in law, literature, music, painting, teaching, lecturing, singing, acting and so forth.

It will be realized then, that National Income is very much bigger than the value at places of production of the nation's material output, for it covers the incomes drawn both for the making of goods and for the rendering of services.

Estimates of incomes should be based upon (1) Income-tax, (2) an estimate of the incomes of wage earners based upon the valuable wage statistics data, and (3) an estimate of those small incomes which are not drawn as wages, but which are below the income-tax limit (*e.g.*, the salary of a clerk say drawing Rs. 100).

For the purposes of income statistics, the unit of enumeration should be household, for the individual and the family are generally scattered while the members of the household are grouped together in one place and at a particular given time.

For measuring income, we can take year (agricultural) as the unit. For salaried persons, month will be the convenient unit. For wage earners in mills and factories, week will be the unit.

In valuing income in kind, a small value may be assigned to the free gifts of nature, such as fuel in villages.

As regards the payment of wages, the mill labourers should be paid weekly. For they do not generally possess any funds. Often, he obtains provisions and other necessaries on credit, and he is not allowed long term credit. Again, should he get his wages weekly, it will be easy for him to repay any debt he may have incurred, and thus, a substantial reduction both in interest and capital will take place.

Owing to the migratory character of the mill labourers in Bombay and Calcutta, it is very difficult to ascertain a man's earnings. In such cases, a record has to be maintained relating to the number of days he worked in the mills, the amount of his earnings then, his period of absence in the village, his agricultural earnings, etc. When he goes to the village, his period of work there and the amount of his earnings must be recorded by a special agency. A duplication of work is involved. But that cannot be helped, till a permanent labour corps is formed dependent on wages earned in factories only. To a certain extent, the present practice is desirable though it is injurious to the industry, since the labourer returns to the mill with health rejuvenated and full of vigour.

Wealth.

The material wealth of any country is the "result of intelligent work exercised with the assistance of the intelligently stored labour which we call capital". It follows therefore that the capital stock of a nation at any given moment consists of land, and all the improvements made to the land and all the buildings erected upon it, together with all the moveable or immoveable machinery, furniture and accumulated stock of commodities of every sort. From this definition it will be seen that the method of computing wealth leads us to the inventory method.

When we frame an estimate of national wealth, we will have to take into account the market value of all the properties. The total amount will include the market value of more than material things. It includes for example not only of land but such things as the good will of business firms. It includes also much capitalisation of profits as in the case of railway companies and many joint-stock companies—"property that is in the right to draw interest and not actual tangible capital".

For example, if we capitalize railways by capitalizing their profits at so many years purchase, we arrive at what is considered in commercial terms a fair valuation of what the business is worth to capitalists in the given circumstances. The profits however exist by virtue of legal monopolies conferred by the State, and what is commercially valued therefore is in large part not tangible capital, not material commodities but the power to draw monopoly profits.

Another illustration may be drawn from the concrete case of a certain limited liability company, which issues for years bonus shares to its shareholders, those shares representing not any real addition to the tangible assets of the company "but a mere watering of the capital". Although the capital is thus watered, business is so profitable that it still yields a high rate of interest to the shareholders and therefore the bonus shares are bought and sold at a high figure as representing the power to draw profit. They are therefore commercially valuable, but they represent no addition to the real capital of the country.

In estimating the national wealth according to the list of items given in Appendix J., we include also the goodwill of business firms, especially jointstock companies, as the shares of these companies are commercially valuable and have the power to draw interest.

In valuing the agricultural land, the market value of the land at the given time as a result of local enquiry should be taken into account. It should be remembered the market value will vary from time to time.

As regards houses and other private buildings, the value should be made on rent basis. For instance, if a house will let at Rs. 20 a month or Rs. 240 a year, it will sell for a sum which is equivalent to so many years' rent. In South India generally 10 years' rent is taken into account for fixing up the sale price of a building. But, in villages where there is no fixed rent, however beautiful the building may be, the value should be fixed on the basis of local demand. This must be ascertained on personal investigation only.

A detailed enquiry from every individual in respect of all forms of private wealth is desirable, but it would be costly. Anyhow, for the present, a rough estimate approximating to accuracy will suffice.

Cost of Living.

The question of a cost of living index require special consideration. There are three methods of preparing a cost of living index, namely, the aggregate expenditure method otherwise known as the mass unit method, the standard budget method and theoretical budget method. The aggregate expenditure method consists in using weights based on total consumption by the whole community of the commodities selected. But this method is considered to be faulty in many respects. In the first place, the figures selected for some of the items, e.g., rent, milk, oil, etc., are necessarily guessed, and in the second place, though that errors in the weighing of a few items would make little difference to the final result, errors in the weighing of all items would make a considerable difference and there is no guarantee that any item in the calculation will give a really accurate representation of facts as regards any particular class or locality.

The standard budget method is the most satisfactory method of measuring changes in the cost of living of any class or in any locality, but it cannot be applied until a large number of family budgets have been carefully collected and statistically examined. The theoretical budget method consists in determining the relative importance of the food items by taking into consideration their nutritive values and the minimum quantity necessary to maintain human life. These items are then applied to the average working class family as determined by the census and weighted accordingly. This method is of value only in relation to food and for other items some other method has to be adopted.

In Burma, it is no use publishing the cost of living index until family budgets are collected and examined. An index not on sound basis is liable to be misinterpreted and adversely criticised. It is much better to begin with simple index numbers of wholesale and retail prices taking either arithmetical or geometrical average of price relatives or giving indirect weighting by quoting the prices of several qualities for the more important commodities, or a rough direct weighting according to the quantities put on the market. This would give a general indication of changes in the purchasing power of money, without reference to the cost of living of any particular class.

Again, there are other problems connected with the cost of living in Burma. The cost of living of a Burman is quite different from that of a Telugu or a Tamil man and it will have to be decided how many index numbers would be maintained. Fresh and continuous enquiries should be conducted with a view to changing the items of the index and their weights and the problem of how to maintain the continuity of the series in such circumstances will then have to be discussed.

In working out family budgets, information should be collected by complete house to house enquiries. To get fairly reliable data, family budgets should be collected, of different communities and different class of persons and in different localities. For instance, the family budget of a Burman would considerably differ from that of a Telugu man. The standard of living of the labourers in the oilfields or the mines is vastly different from that of the dock labourer in Rangoon, and it will have to be decided how many index numbers should be maintained. Again the family budget of a middle class man will be entirely different from that of a cooly class.

In taking out the items of expenditure, such expenditure on drink, drug, etc., need not be taken into account. They are not the regular, continuous and indispensable items of family expenses; however, if a man is addicted to drinking, it forms a part and parcel of his expenses. Sometimes a whole family drinks. In that case drink forms a principal item. Expenditure on religious and social ceremonies must be included as it cannot be avoided by any community.

Indebtedness.

If it is decided to institute inquiries into indebtedness, the unit of measurement of indebtedness should be the individual in industrial labour, and the household in villages. It is not necessary that special intensive inquiries should be made. The labourer's statement or that of a household in the village need not be disbelieved as there is no motive for him to give a false statement. The result of a general survey will be fairly reliable.

One of the chief causes for indebtedness which has been omitted in the questionnaire is litigation. In each and every village in South India, many flourishing families have been ruined or have run into indebtedness through litigation. There are many instances wherein the lawyers have created a litigant spirit among their clients and encouraged most complicated litigations. Where matters would have ended in peaceful settlement by good counsel or settled by "easy arguments of love", the lawyers have stepped in and made mountains of mole hills. This means waste of money, waste of time and waste of energy. The more weak a case is,

the more money the lawyers demand to argue it out in the court of law.

The cure of indebtedness of the agricultural labourers and landlords will be the establishment of more co-operative credit societies and land-mortgage banks.

A Note on Census of Wages with special reference to Burma.

A most striking feature in the history of modern India, including Burma, has been a marked advance of democracy and with it the aggressive character of the labour movement. Modern economic developments summed up by the word "Industrialism" or "Commercialism" have pushed to the forefront many social and economic problems which arrest our immediate attention. The tendency of wealth to concentrate into the hands of a few, and the consequent reduction of a large mass of people to the position of human machines, the problems of unemployment, under employment and employment under insufficient wages, the degrading conditions to which the workmen are reduced by the nature of their work and conditions of living, the prevailing high prices and the general discontent of the working class have furnished a justification and a necessity for taking wage statistics. Hitherto, the wages census was taken quinquennially. But it must be taken annually, since "Work of reference of this nature five years old partake of the nature of archaic history".

So far as Burma is concerned, a census of wages earned in the most important industries must be taken annually.

The collection of wage statistics will for the present be confined to the following industries :—

Rice Mills.

Saw Mills.

Oil Refineries.

Cotton Ginning Mills.

Flour Mills.

Railways.

Printing Works.

Tramways.

Oil Pressing Mills.

Dock Labourers.

Later on statistics for all the industries will be collected.

Information must be obtained from firms and from actual enquiries.

Family Budgets.

Information regarding the income and expenditure of workmen employed in the industries mentioned above will be obtained by actual enquiry.

Cost of Living Index.

A commencement must at once be made with the preparation of a cost of living index for the industrial classes in Rangoon, Mandalay, Moulmein and Bassein. A list of commodities most commonly used by the labouring class should be selected. A weighting must be assigned to each

commodity, that is, the relative importance of each commodity must be estimated and adopted. Prices of these will be taken for a standard or basic period (say July 1920=100). Prices for the commodities for subsequent months will be collected twice a week from some half a dozen retail shops usually patronised by the labouring class and the average figure thus collected will be taken as the price for the month. These prices will be expressed as percentage of the prices ruling in July 1920.

Not content with this, the results must be published in the local Newspapers and Vernacular Journals. I should like to place special emphasis on the publication of vernacular bulletins especially in the Burmese, the Tamil and the Telugu languages and their distribution both in Burma and in India.

Next to new York, Rangoon is considered to be the greatest labour recruiting centre. Nearly 3,50,000 labourers come to Burma annually. Most of them are recruited by maistries on a contract basis. As nearly all the labourers are illiterate, their ignorance is taken advantage of by these maistries who exploit upon them. They appropriate a great share of the workmen's wages and make them eternally indebted to them. Should they (*i.e.*, the labourers) be made aware of the actual amount of wages that they should get, were they to understand the price of commodities and how much more they generally pay for these commodities, they will come to understand their position and try to improve their conditions. Then voluntary recruitment will replace contract labour hired through maistries. The employers too, need not depend upon the maistries for labour recruitment. Where labour is mobile, they themselves through their agencies or through Government will recruit labour.

For this and other purposes, a labour statistical bureau should be opened by the Government. The bureau should be staffed by competent men who know the work thoroughly well.

Initial Economic Survey, Periodical Survey and Special Enquiries.

To conduct the initial economic survey as proposed by the committee is an desirable idea. But the cost will be enormously great. To my most modest estimate, it may come up to six times the cost of census (population) operations. It may take full five years to complete the survey. To a certain extent the services of the revenue officers of the districts such as revenue inspectors, village headman, karnams, tahsildars and deputy tahsildars, sub-divisional officers, etc., may be utilized, but in that case the petty officials such as revenue inspectors, karnams and village munsiffs should be properly remunerated. An extra fee will be a proper incentive to them.

Their work should be examined and checked accurately by the Provincial Statistical Bureau. Once the economic survey is undertaken, it is sufficient that periodical surveys are done at stated intervals with a view to measuring progress or decline and to maintaining the utility of the economic data. In course of time the periodical surveys may synchronize with the population census as it will save time, energy and cost. But annual surveys should be conducted with regard to wage census, agricultural production, etc. As regards industrial production, quinquennial census may be undertaken.

Generally, the duty of the statistical bureau will be to collect statistics, classify and arrange them according to the different heads and to publish them. They should not comment upon them. That task should be dedicated to the experts and to the heads of the different departments concerned. The authors of the Indian Industrial Commission Report are also of the same opinion on this point.

(*N.B.*—The Government have recently opened a labour statistical bureau and 30,000 has been budgeted for the running of this department this year, *i.e.*, 1925-26.)

Whenever special enquiries are to be conducted in such matters as indebtedness, cost of living, beggar problem, fragmentation of holdings, etc., special agencies should be established. For instance, the labour investigators of the statistical department, the Economic Research Department attached to the University, the Provincial and Indian Economic Associations may be asked to conduct researches under the direction of the statistical department. When the unofficial bodies conduct investigations, special remuneration or honorariums may be attached to their duties.

A separate Imperial Statistical Bureau, entirely divorced upon the Commerce and Intelligence Department should be opened by the Government of India. In the provinces, labour statistical bureau should be established by the Local Governments. They should be properly staffed by persons who possess a knowledge of economics and statistics. A census production act similar to that passed in England in 1907 should be passed by the Imperial Legislature which should be made obligatory on the part of every business man, managers of firms and industries, every private and public citizen to furnish all the information required by the schedule.

APPENDIX.

Whatever economic survey is undertaken no useful purpose will be served unless a general scheme of Rural Reconstruction is laid down. The aim of the enquiry should be, not merely to gather statistical and other information about the economic conditions of the country and its peoples, but also to suggest ways and means for raising the standard of living of the people and to increase their productive capacity. As Mr. Roosevelt, the Ex-President of the U. S. A., remarked the rural population of India is the backbone of the Indian Nation. The prosperity of the villages indicates the prosperity of the nation. India is rapidly becoming an industrial country. The villagers are fastly coming into towns. In course of time, sooner or later, sooner rather than later, the villages will be depleted of their virile people. Unless the life in the villages is made more productive, remunerative, attractive and happy, we shall soon be facing the worst features of Western industrialism, devoid of its bright characteristics. The Rural India will become a thing of the past ; agriculture will decay ; and consequently the production will fall down. The result is famine, misery, high cost of living, etc. Even in U. S. A. a country where the soil is virgin and there is no fear of normal conditions being upset so soon, it is feared that the rural population will rapidly decline and the people will resort to towns unless remedial measures are quickly adopted to better the prospects of village life. With that end in view, they have adopted a scheme of Rural Reconstruction. In this country where extensive cultivation is impossible, agriculture is conducted on primitive lines and intensive cultivation should be resorted to by adopting scientific methods of agriculture. It is all the more indispensable that the rural parts should be reconstructed. In the words of Dr. Rabindranath Tagore, "Our centre of culture should be not only the centre of intellectual life, but the centre of economic life also. It must co-operate with the village round it, cultivate land, breed cattle, spin clothes, press oil from oilseeds. It must produce all the necessaries devising the best means, using the best materials and calling Science to its aid.... This will give us a practical industrial training whose motive force is not the greed of profit." With this object in view, it will not be out of place if I were to offer a few suggestions. It is unnecessary for me to give a detailed scheme. I am writing a book on "Indian Rural Economics and Rural Reconstruction" and shall finish it shortly. Nevertheless I am giving below an outline of the scheme which, I think, is most suited to India and her people.

Education.

In the first place, agriculture needs reorganising. As a means to this end, we must place *Education* foremost. The Canadian Minister of Agriculture in introducing the Agricultural Instruction Act declared, "We have come to the conclusion that we can best help on that great work (the creation of rural civilization) by freely and generously assisting the cause of *education*."

Education will help us at all points of the problem. It will help to lift the whole body of the entire mass of people helping in all quarters. It will teach men to farm better ; it will train them to higher social and intellectual ideals in life. It will lead them to understand better, to live more healthily, to attach them to their country and family and build up a more prosperous, contented, peaceful existence by increasing the wants for self-improvement and the up-growing of their offspring and making provision for old age.

But in providing helps to education we must see what kind of education is best suited for the rural population. Surely it is not "libraries, classes and schools". Any kind of education is quite useless unless there is "ring of country" about it. Arithmetic is quite useless to the country children if they do not know how to keep husbandry accounts. Physical science is of no value to them if they do not in the least learn how to apply that to their practical doings.

Not only elementary education should be made compulsory, but rural education must be combined with that. Vernacular agricultural schools for the sons of

cultivators must be established in all the villages and instruction should be provided. If this scheme is effectively carried out, then agricultural shows and exhibitions, the distribution of bulletins and leaflets in the various vernaculars dealing with matters of agricultural importance will have any value. Then a number of agricultural associations will spring up with the object of assisting and supplementing the efforts of the agricultural departments. Then the publication of the agricultural journals too will be much appreciated.

An effort in this direction is being made in Bombay, but the sons of "substantial cultivators" only who can till their own lands are given a course of instruction in practical agriculture. But it should be extended to all classes of rural children.

Housing.

The next advancing step is, apart from education, to provide for a decent and becoming dwelling for the country people dependent for their bread on the labour of their own hands. If only the provision of house accommodation is satisfactorily carried out, we can be said to have progressed in the matter of Rural Reconstruction. President Roosevelt made this the third point in his demand for "improved country life". Co-operative housing schemes must be adopted, provision of united cottages must be made. The advantage of living in farmers' farm itself and not at a distance of several miles should be recognised.

Every available means should be pressed into service. The General Savings Bank of Belgium provides money on liberal terms and its offer is readily made use of. In Germany, the "social insurance institutions and the co-operative housing societies help in this direction. In this country, the savings bank money, the provident fund money, the money derived from the investment in Post Office Cash Certificates—these are the sources of capital which are at the disposal of the Government and the public which can be made use of for this purpose.

Small economic holdings.

A third step in the scheme of Rural Reconstruction would be the creation of independent, self-employed rural people. There are millions of people who want employment under fair and equitable conditions, and for whom it is an indispensable condition of life. But we want self-employment which is more satisfactory than employment under another and under fixed wages. If a man has the opportunity of employing himself he will work better, produce more goods and reap greater profits. He is benefited; he benefits the community in a greater measure. He also enjoys greater happiness, peace and contentment.

But as a preliminary to this step economic holdings must be created. In India, at the present day, the agricultural lands suffer from two serious defects. A ryot does not possess enough lands to support himself; that is to say, his holding is so very small that it can hardly be called economic. Again his lands are so very scattered in the different parts of the village that he is not in a position to cultivate them without much cost of labour, time and money. In other words, excessive sub-division and fragmentation of agricultural lands are the two chief difficulties which an Indian cultivator labours under. The result is, it will not provide a living for him and his family. Much less will it leave him anything over to pay any assessment or interest on debt. There is no chance for him to improve or develop his property.

To a great extent, the uneconomic holding is the result of the Hindu law of inheritance. Partly, it is due also to the fact that the Indians tenaciously cling to their lands however unproductive and unremunerative they may be.

Several attempts have been made to create economic holdings in the different provinces of India. In Bombay, a sort of permissive legislation was sought to be introduced in the Local Legislative Council. The Baroda State attempted to

create economic holdings with partial success. But nowhere a complete re-adjustment has been made.

Unless the State takes the initiative in the "rational reconstitution of the land" and enforces the theory "that each peasant's land should consist of a single piece," any reform in this direction is impossible. As it is provided in the law that a house cannot be further sub-divided, so also, it should be legislated that an economic holding cannot be sub-divided, but must be held entire. In Sweden, Austria and other places, the State has taken the initiative in this direction and there is no reason why the same may not be done here.

It is feared that, should the economic holdings be created, those partners who have a claim in the land will be alienated and thrown out of employment. But in any case it is an incentive for them to find out a more remunerative employment or occupation elsewhere.

In the matter of creating small holdings, there are two ways of doing it. The one is the creation of a series of small holdings, small, but yet sufficiently large to keep a family independent of casual employment. The holding of course will vary in size in the different parts of the country according to the fertility of the soil, distribution of water, rainfall, etc. In a deltaic land, a holding consisting of six acres will suffice for a family. But in a dry place, 25 to 40 acres are not even sufficient. Anyhow, the principle should be recognised that the holding must be self-sufficient. The farmer could then keep, say, five cows, forty or fifty hens, besides chickens; he may also have sheep for his own use. If he is a good manager, he should be able to keep a couple of breeding bulls, a couple of storks and a mare, suitable for breeding purposes; and if he manages her well, she will be able to do nearly all his carting, hay-making, etc. Then of course there is the garden and a few turnips for the stock. On such a holding as this, a family ought to be able to live comfortably.

Another method is to divide big lands into small land lots and let to those who already have a regular wage earning occupation. Small shop-keepers, the village artisans such as blacksmiths, "Wheelwrights and saddlers", carpenters, etc., are all facing a competition from the larger men of their own occupations in the neighbouring towns. Their position is thus often rendered precarious. Many have deserted villages, many more are on the point of doing so, or do not intend to bring their children up to follow a village trade. The small land lot system will just turn the scale and keep them where they are. It will make their lives easy and contented.

Organisation.

Appropriate education, housing and suitable lands being assumed to have been provided for, the next step, and under modern conditions an indispensable postulate for successful rural reconstruction, will be *organisation*. Now at the present time, agricultural organisation is in need of special advocacy. It will ensure to each producer a better price for his own particular lot and enable to produce it at a less cost. It will make him to bring it to the proper market at the proper time through expert agency in a much improved condition, that is clean, graded and standardised. It will teach him also to husband labour, capital and other outgoings. That is how the American fruit-grower, co-operative wool-grader, elevator-man, and how the French raiser of produce make their profit and the land prospers under the treatment instead of becoming exhausted.

As a first step in organisation, co-operation in agriculture is greatly wanted. Co-operative purchase is an easy thing to organise. But the most formidable thing is money. The real solution of this difficulty lies in co-operative credit. So much has been written on this subject that it is unnecessary for me to set forth here the principles involved.

The next step is the marketing of the produced. Here the organisation is very defective. On a market day we see a continuous stream of people pouring

into town often from distances of 15 or 20 miles, each carrying a bundle of produce for sale, wood grass, vegetables or what not. The effort to the man is considerable. The value of the articles is often only a few annas. With organisation the whole of the marketing which used up the labour of 5 or 10 thousand people might have been done by a thousand, and the labourer might have put in a day's work on their land. To effect this we can only look to an increase of the co-operative spirit which in other countries has done so much to make marketing efficient.

I shall give below a brief outline as to how the paddy in Burma can be stored and sold at the right time, thus eliminating the middle-man's profits.

In order for cultivators to be able to hold up their paddy, money for use in the meantime is indispensable. There is no great difficulty for cultivators to secure godowns suitable for fire insurance either by purchase or by building either with their own funds or by borrowing perhaps from the Rice Control profits. The godowns required for this purpose must be built in convenient centres for carriage by rail and water and should be in the independent possession of cultivators' organisations in order that they may not be dependent upon Government for finance or upon private capitalists.

It is important to devise financial arrangements for providing the money required for cultivators before sale in such a way that there shall be a permanent reform in agricultural finance. In western countries, co-operative associations and companies for grain storage enable farmers to obtain funds in two ways. The first way is for the society to pay the cultivator the current market price of grain at the time of delivery making a suitable deduction for expenses and to safeguard against fall in prices. The grain is then sold at the discretion of the Managers of the society and profit is distributed to suppliers. The second way is for the society to store the grain and give a receipt or certificate to the supplier. The society will then deliver the grain to the order of the supplier or will sell it for him on commission. Cultivators can in this way sell their grain jointly or in combination as they please. Meanwhile they are enabled to obtain credit from their banks or credit societies by pledging the receipts issued by the Storage Society. For the first way of business the Storage Society requires much capital, but this can be obtained from share capital and loans. In anyhow the second way seems to be the best.

If this method succeeds in Burma, cultivators will be dependent on the favour and assistance neither of the officials concerned nor of the capitalists who have the monopoly of storing grain and will have the means of dealing freely with all the classes of capitalists and will have become more experienced and business-like men.

Community organisations of this kind bind together the rural families in clusters and groups in which there is a "kindly touch, mutual helpfulness and a feeling of cohesion".

Another co-operative form of effective assistance applied to organisation in country life is that adopted by Allotment Associations. These societies do useful work in England and distinctly advocate and favour co-operation among settlers for whom they provide allotments. They find their work speed best where there is co-operation established. Yet they themselves are not co-operative. They are composed of public spirited philanthropists who make an offering of their labour and guidance to those who need such help and for the benefit of the society. Some such associations may usefully spring up in this country also.

Village Industries.

Quite naturally once the project of re-peopling the countryside by the creation of small holdings in large numbers and of the systematic reconstruction of rural life came to occupy men's minds, the revival of rural industries must next

engage their serious attention. Rural industries to provide remunerative employment in idle hours and months have proved elsewhere a most acceptable addition to small agriculture. Writers on industrial problems in Belgium remark upon the mistakable look of prosperity which Belgium villages used to wear in which straw plaiting was carried on in olden days before China and Japan had come in as under-cutting competitors, in comparison with non-straw plaiting villages by their side. Even in India before the machine-made goods came to be imported into the country-sides from England, the villages that were engaged in hand-spinning and hand-weaving undoubtedly looked prosperous.

If bye-industries are to be successfully organised as supporting buttresses to small cultivation of land, it is evident that occupations of such industries must be chosen, the products of which are pretty certain to find a remunerative market. This point is not always sufficiently borne in mind. The question is rather asked what can our people produce? That point is likewise of importance and likewise often enough too lightly treated. There is no use of reviving the weaving of the renowned Dacca muslins, or the artistic weaving of Kashmere silk shawls which can only be worn by rich Zemindars and Maharajas and for the sale of which no ready market will be found. Only those industries which will find a ready market at all times should be chosen and carried on. Indian articles with all their peculiarity, their taste and artistic excellence are only partially saleable. But Japanese goods are quickly sold, because they are useful to all sorts of people and prepared according to the tastes of the people for whom they are made. Further, rural industry—no matter whether the moving force be human hand or electric power, can hold its own against factory machine only in cases in which the material used is such as the power machine cannot readily handle, or, in which the human hand yields a substantially more valuable product, such as hardware, lace embroidery, certain articles of wood, and the like, or else, products which suit the peculiar local or general taste, such as the old fashioned domestic implements, peasants' cloth, etc. We have a number of peculiar tastes to reckon with that rural industries have to befriend them.

Further, rural industries should be carried on, or, rather distributed, according to the plentifulness and consequent cheapness of material to be employed. Thus, the wood industries of all descriptions must have their home in forest districts. Basket making must be in vogue where grass and cane are grown. It is idle in a branch of industry in which the margin of reward is very narrow to rely upon materials that have to be brought up from after.

Again such industries as plastic crafts and lac-ware which are carried on in this province and which teach deftness, taste, originality and creativeness should be encouraged.

To encourage rural industries, instruction should be given in rural schools to the sons of the cultivators. There must also be organisation to make the work of the scattered, isolated, moneyless operative, all of them dependent upon their own labour, successful. There must be organisation for the purchase of raw materials. Next, there must be organisation for work. Some of the domestic industries carried on by country work such as toys, are highly complicated. Some of them call for a great division of labour. All this business wants to be systematically organised. In the last place, there is the organisation of sale. Association of buyers in Germany have been formed here and there to force the sale of small industry wares. Similar associations may be started here. Another method is, sale can be pushed through employers for whom home workers work in their own homes as a settled arrangement, the workers looking to the one man for the taking of their workmanship off their hands and paying them the value of their labour. The third method is through dealers who purchase the goods for what they can get them for resale as their own business. Above all, sale can be effected through Co-operative Stores or Sales Societies.

Labour-wages.

We are eager to reconstruct our rural parts. But this is impossible unless a contented and prosperous labour corps can be had in the villages. Whether the labourers work as tenants or for wages, they should be assured of a minimum wage in the true economic sense of the term. In the Tamil Districts in South India, the land is cultivated in many cases through padayals or semi-amanicipated slaves. It is generally prevalent in the districts where Brahmin landlords are predominant. These padayals work for their masters for mere subsistence allowance. But they are outcasted, are not provided with education and not allowed free intercourse. In our scheme of Rural Reconstruction, such system must go away. Man is to work on honourable terms and for decent wages. He should be provided with all amenities of life. A healthy, contented labour corps should people our villages.

Again, in the cultivation of the land, so far as Madras Presidency is concerned, we find that the land-owners show a distinct tendency to lease out their lands to tenants on favourable terms. The lease is generally a kind of contract entered into by the landlord and the tenant.

Broadly speaking, there exist 4 kinds of contract. There is a certain kind of contract by which the tenant agrees to pay the landlord a fixed quantity of paddy every year. In case of bad harvest owing to the failure of crops due to the scarcity of rainfall or to diseases, the tenant gets a reduction in the quantity he is to give to the landlord. Under this system, the tenant has to supply labour, capital, manure, seed, etc., and the landlord has no hand in the actual cultivation of the soil. The straw usually belongs to the tenant. The landlord has simply to pay kist to the Government.

This system is usually adopted by absentee landlords or by those who are idle or incapacitated from cultivating the land owing to various causes.

There is another kind of contract whereby the landlord receives two-thirds of the actual returns for the year. Here, the same conditions prevail as in the previous one, but the landlord has more responsibility. He generally supervises the land, bestows individual-attention to it and sees whether the land is properly cultivated or not. The tenant also is in a better position since the total return means more gain for himself. Here also, the straw belongs to the tenant.

The third kind of agreement is that by which the landlord gets three-quarters of the total return from the soil while one quarter is given to the tenant. Under this system, the landlord supplies manure to the land, but the seed and the labour have to be supplied by the tenant. The kist is of course paid by the land owner, but the straw is taken by the tenant.

The fourth and the last kind of contract is that by which the landlord pays for the seed, manure and ploughing. The tenant has only to supply labour. One-eighth of the produce is given to the tenant and the rest is taken by the landlord. The straw is divided by the landlord, and the tenant. This system is usually adopted by those who have more lands to cultivate or who entirely depend upon land for support.

Generally, these four kinds of remunerating labour are good and leave no room for comment. But the system of cultivating the lands with the padayals or the depressed classes is to be condemned as they are not properly remunerated and their conditions are not improved upon. In India, the people are not advanced to claim either co-partnership or profit-sharing in agriculture. The different systems of contract which have been mentioned above are in a way on a profit-sharing basis.

The *kanam* system of tenure which is prevalent in Malabar and Cochin has much to be improved upon. It cannot be accepted as wholesome unless the defects inherent in it are remedied.

Thus the agricultural labour so far as South India is concerned is good. But the manual labourer who has not got any land to work in, does not get proper wages. Sometimes he gets no employment. Sometimes he has not got enough to do. In some cases he is not sufficiently paid. Unemployment, under-employment and employment under insufficient wages, these are the three problems which have to be solved in his case. It should be one of the objects of Rural Reconstruction to provide him a minimum wage at all times.

Women.

If we are to have genuine rural reconstruction, it is indispensable that we should have the co-operation of women to effect it. For it is only through women, we must have home life. The country offers greater scope for female activity than the town. The farms and the fields, the dairies and the hearth claim their services. In spite of these busy activities it must be admitted the country offers no diversions either to man or to woman, and more so to woman. There is some drudgery in the life of the village for a woman. To remove it, women's clubs such as have been started in Canada and the United States of America may spring up here. In such clubs or institution, "the carter's wife and the peer's daughter know each other, standing shoulder to shoulder, speaking their minds without fear or hesitation". There must also be "well and systematically organised preparatory institutions for farm-children in the shape of girl's clubs for poultry keeping, canning of fruits and vegetables, preserving and the rest of it—so that young folk may come into the world as minutes readily trained and equipped with considerable training, devoted to agriculture, and can accordingly devote themselves all the more freely and unrestrainedly to the higher tasks of the institutes—the study of hygiene, of the bringing up of children, of home making and community life".

Church.

President Roosevelt and his country life commission with the late Ambassador Page lay great stress upon the Church as an active agent in the furtherance of Rural Reconstruction. The "Church" is so the Commission states "in a peculiar way intimately related to agricultural industry. This gives the rural Church a position of unequalled opportunity. The time has arrived when the Church must take a larger leadership both as an institution and through its pastors in the social re-organisation of rural life." If that is so in a country which owns no Church establishment, much more ought to be said among ourselves where religion is intimately associated with our daily lives and the temples, mosques and churches have been designedly established and endowed with funds entirely or almost entirely from the land and, its cultivation" in order to serve as a pillar to healthy and satisfactory country life to which secular things as well as spiritual and moral are necessary contributors".

Lastly, certain social reforms must be immediately carried out, in order, to effect a complete Rural Reconstruction. In the first place, the so-called depressed classes and the untouchables must be elevated in the scale of social life. They should be educated and given every opportunity to improve their material and moral condition. Secondly, the superiority of ~~castes~~ must be broken down. Whatever religious sanction, they may have, they have outlived their purpose. In the modern world, the sole test of a man's superiority is his intellectual and moral attainments and not the pride of birth, or the pomp of power. Thirdly, the rapid growth of population must be checked. It is not conducive to the healthy growth of the nation as is generally supposed. The increase in the number of birth does not generally mean that healthy and beautiful children are born in this world. It only indicates that the Indian nation is not strong enough to withstand temptation. Again, the population may not find enough of food for nourishment. If, on the other hand, their material condition is improved, it will afford them better opportunities of developing the best qualities in them which,

in their turn, will increase the material and moral advantages which they have the power to offer to their children. Fourthly, the minimum age of marriage for both boys and girls should be raised. Fifthly, the rigidity of castes must be relaxed and the intercaste marriages must be encouraged. We can go a step further, we may even promote inter-provincial marriages. After all, marriage is a question of love. Why should we be tied down by caste rules, customs and tradition? The God's best gift to man must have a free scope for manifestation. If this reform is carried out, there is no doubt that we shall soon have a more virile, healthy and beautiful Indian nation better equipped both morally and mentally.

Prevention of disease.

Above all, steps should be taken to combat the diseases like cholera, plague, malaria, etc., which eat the manhood and the womanhood of the nation. Any amount of money spent in eradicating these evils, is well spent.

INDEX TO MINUTES OF EVIDENCE.

A		PAGE.	
Ahmedabad Mill-owners' Association	II	601	
Alwar Chetty, Rao Sahib C.T.	II	278	
Amalsad, Mr. D. M.	II	280	
Andrew, Mr. E. J. L.	I	615	
Ayyar, Mr. S. Subbarama	II	267	
Ayyar, Mr. S. Vaidya Nath	I	418	
Ayyar, Rao Bahadur A. Vedachala	II	303	
B			
Barretto, Mr. W. L.	I	618	
Barua, Rai Bahadur K. L.	I	301	
Batheja, Mr. H. R.	I	424	
Bell, Mr. R. D.	II	567	
Bengal Chamber of Commerce	I	389	
Bennison, Mr. J. J.	I	490	
Bhalla, Mr. R. L.	II	813	
Bhatnagar, Mr. B. G.	I	101	
Blunt, Mr. E. A. H.	I	156	
Board of Revenue (Land Revenue and Settlement) Madras	II	289	
Bombay Chamber of Commerce	II	587	
Brock, Mr. R. W.	I	382	
Burma Chamber of Commerce	I	556	
Burt, Mr. B. C.	II	808	
C			
Calder, Mr. H. (See also Burma Chamber of Commerce)	I	559	
Calvert, Mr. H.	II	621	
Chadwick, the Hon'ble Mr. D. T. (Evidence not published)	II	786	
Chamber of Commerce—			
Bengal ———	I	389	
Bombay ———	II	587	
Burma ———	I	556	
Karachi ———	II	599	
Marwari ——— Calcutta	I	395	
Upper India ——— Cawnpore	I	185	
Chaudhri, Mr. K. C. Roy	I	362	
Chikodi, Mr. P. R.	II	373	
Clutterbuck, Sir P. H.	II	786	
Collins, Mr. B. A.	I	429	
Couper, Mr. T.	I	572	
D			
Dadubhai Desai, Mr. P.	II	590	
Das, Mr. Rajani Kanta	I	226	
Devadhar, Mr. G. K.	II	549	
Dicks, Mr. A. R.	I	430	
Dobbs, Mr. A. C.	I	432	
D'Souza, Mr. P. G.	II	58	
Dubey, Mr. Daya Shankar	I	147	
Dutey, Prof. Dori Lal	I	170	
Dunn, Mr. C. W.	I	471	
Dyer, Mr. J. F.	II	334	
E			
Edie, Mr. A. G.	II	596	
Ellis, Mr. R. H.	II	201	
Employers' Federation of Southern India, Madras	II	290	
F			
Fermor, Dr. J. L.	I	308	
Finlow, Mr. R. S.	I	246	
Fremantle, Hon'ble Mr. S. H.	I	179	
Freke, Mr. C. G. (Evidence not published)	I	246	
G			
Ganga Ram, Rai Bahadur Sir	II	659	
Garbett, Mr. C. C.	II	820	
Ghosh, Rai Bahadur D. N. (Evidence not published)	I	319	
Gilbert, Mr. C. E. L.	II	597	
Gopal Menon, Mr. C.	II	168	
Gopalswami, Mr. S.	I	620	
Goswami, Mr. Umakanta	I	376	
Grantham, Mr. S. G.	I	580	
Green, Mr. L. B.	II	30	
Gulshan Rai, Mr.	II	824	
Gurmukh Singh, Prof.	I	139	
H			
Hamilton, Prof. C. J.	I	320	
Hayavadana Rao, Mr. C.	II	82	
Higginbottom, Mr. Sam	I	68	
Hilson, Mr. G. R.	II	1	
Horne, Prof. E. A.	I	346	
Houldey, Mr. J. E.	I	518	
Hubback, Mr. J. A.	I	256	

	PAGE		PAGE
J		R—contd.	
Jevons, Prof. H. S.	I 540	Revenue Board of — (Land Revenue and Settlement) Madras	II 288
Joshi, Mr. G. M. N.	II 536	Ross, Lt.-Col. W. C.	I 292
Joshi, Mr. R. M.	II 454	Roughton, Mr. N. J.	II 329
K		Roy Chaudhri, Mr. K	I 362
Karachi Chamber of Commerce	II 599	Roy, Dr. Sir P.	I 369
Khan, Dr. Shafaat Ahmad	I 123	Rushbrook Williams, Prof. L. F.	II 755
Kibe, Sardar Bahadur, M. V.	II 615	S	
Koil Pillai, Mr. M.	II 291	Sahasrabudhe, Rao Sahib, G. N.	II 606
L		Samundi Goundar, Mr. C.	II 397
Lokanathan, Mr. P. S.	II 130	Sastry, Mr. K. R. R.	II 294
Lyons, The Rev. Mr. H. W.	II 618	Satyamurti, Mr. S.	II 236
M		Saunders, Prof. A. J.	II 255
Mackenna, Hon'ble Mr. J. (Evidence not published)	I 518	Scott, Mr. E. A.	II 720, 722
Mackie, Mr. A. W. W.	II 347	Sedgwick, Mr. L. J.	II 467
Macmillan, Mr. A. M.	II 384	Sen Gupta, Mr. A. C.	II 508
Madan, Mr. J. A.	II 427	Set, U.	I 596
Mann, Dr. H. H.	II 309	Shafaat Ahmad Khan, Dr.	I 123
Marshall, Mr. J. B.	I 435	Simpson, Mr. R. R.	I 309
Marwari Chamber of Commerce, Calcutta	I 395	Smyth, Mr. S. A.	I 500
Matthai, Dr. John	II 117	Stevenson, Mr. F. H.	I 611
McKerral, Mr. A.	I 526	Strickland, Mr. C. F.	II 672
Milne, Mr. D.	II 710, 722	Subbarama Ayyar, Mr. S.	II 267
Milner-White, Mr. R.	I 183	Sundara Raj, Dr. B.	II 144
Mitra, Mr. J. C.	I 406	T	
Mitra, Mr. J. M. *	I 409	Thompson, Mr. C. D.	I 51
Mohi-ud-din Ahmad, Khan Bahadur	I 191	Tireman, Mr. H.	II 302
Mukerjee, Prof. Radhakamal	I 79	Tok Kyi, U.	I 613
N		Townsend, Mr. C. A. H.	II 693
Nanavati, Mr. M. H.	II 413	Trevaskis, Mr. H. K.	II 716, 722
P		Trotter, Mr. H.	II 804
Page, Mr. A. J.	I 452	U	
Pate, Mr. G. I. (See Ahmedabad Mill-owners' Association)	II 601	Umakanta Goswami, Mr.	I 376
Patil, Rai Bahadur P. C.	II 603	Upper India Chamber of Commerce	I 185
Plymen, Mr. F. J.	II 446	V	
Pradhan, Mr. R. G.	II 360	Vaidya Nath Ayyar, Mr. S.	I 418
Purkayastha, Mr. K. M.	I 203	Vakil, Mr. C. N.	II 521
R		Vedachala Ayyar, Rao Bahadur, A.	II 303
Rajani Kanta Das, Mr.	I 226	Venkatanarayana Nayudu, Dewan Bahadur T.	II 305
Ramachandra Rau, Mr. B.	I 414	Viswanatha Rao, Mr. V. N.	II 221
Ran Saran Das, Hon'ble Rai Bahadur Lala	II 827	W	
Rao, Mr. C. Hayavadana	II 82	Waddington, Mr. H.	II 156
Rao, Mr. V. N. Viswanatha	II 221	Wadia, Prof. P. A.	II 536
		Watson, Mr. H. W. A.	I 565
		Weston, Mr. A. T.	I 422
		Wiser, Mr. W. H.	I 187