



REPORT

OF THE

Indian Economic Enquiry Committee

1925

VOL. I—REPORT

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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.

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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 ..	.. 10
Simla	12th May ..	..	..

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. ere Burnett-Hurst in the preparation of this report. We desire however, in 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.

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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 (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.
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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 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 Credit 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 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 assurance 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 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 Incheape Committee has been to discontinue, almost entirely, the collection of figures of internal Internal Trade, Rail and River borne. 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 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 the usual information about the number of letters, Telephones. 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 from and destruction of wild animals are available in the Statistical Abstract, in the annual Migration. "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 Statis- falling under class I is a matter which our ties General. 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 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 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 should be obtained through the agency of crop estimators or by issuing forms to be filled up by 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 Agricultural Statistics and amplifying the existing 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 $1\frac{1}{3}$ 200 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 Pasture and Dairy 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 unclassed 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 unclassed 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 unclassed 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 employées.

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
Distribution of income. in the enjoyment of various grades
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 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.

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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 deduced 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 population.

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 their incomes.	Domestic Service.	Insufficiently described occupations.	Unproductive.
	Agriculture.	Others.											
Wealthy— (With family income of Rs. 24,000 and over).													
Upper Middle— Rs. 8,000—24,000													
Lower Middle— Rs. 1,200—8,000.													
Rs. 800—1,200	Labour— Upper classes. Others— Poor in comfort.												
Rs. 200—800		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 statistics. 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.

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 necessaries, *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 body for the proposed statistical organization.

The Publicity Advisory 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:—

Agencies for Production Statistics.	The statistics of agricultural and forest production will be supplied by the Revenue Department and the Forest Department, respectively.
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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 *taluqa*), 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 Supervision by *Tahsil-dars*. 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.

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 Intensive enquires in should deal with a dozen villages in a year. We rural tracts. 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 Generalization from condition of the population as a whole. We have results. 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 para- Village help to statisti- graph 91, make use of local co-operative socie- cal staff. ties 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 Utilizing the staff of Cottage Industries as in Burma or Divisional other Government Depart- 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 all 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 Periodical review of reviewed once in five years and all doubtful statistics. 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 of necessity be only approximate. The precise character of estimate. 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.
	Ra.	Ra.	Ra.	Ra.
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.
	Ra.	Ra.	Ra.	Ra.
Provincial Statistician	2,000—50—2,500	2,225	26,760	
1 Personal Assistant	1,000—50—1,500	1,225	14,700	
5 Divisional Assistants	300—25—500— 25—300.	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 clerk on Rs. 40 per mensem in each *tahsil*. The Production. 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. 10,000 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 production 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.
	Ra.	Ra.
1. Provincial Bureau .. .. .	..	1,50,000
FOR PRODUCTION STATISTICS.		
2. <i>Talsil</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
		or 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	30.61

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

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).

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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 offices 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.

*Subject to a Note of Dissent on page 91.

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, etc.

(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 employees 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 employees, 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.

Cannals.—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 ; employees ; 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).

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.

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

Area (reserved, protected, unclassified, 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.

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

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.

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

Area (reserved, protected, unclassified, 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.

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

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).

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.

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

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

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.

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.

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

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

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

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

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

Total imports of fish into Calcutta via all routes.

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

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 portion; 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, saltpetre, jadestone, petroleum, kerosene, etc.

Number of mineral concessions granted. Average annual value of certain Indian minerals produced during the periods 1893-1903, 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:—

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.

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

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

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

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.**Nature of information.*

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.

L.I.I.E.C

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 gins, 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, Subyungun 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. Jack : 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.

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.

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.

NOTE OF DISSENT

BY

Professor A. R. Burnett-Hurst.

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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 *jheels*, 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 occupations²,

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 the 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 purposes 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 an important 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 statisticians 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." 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 " formulæ " 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.

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.
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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 Punjabi 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 necessities 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, *gharrualas*, 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

*W. 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
Total ..	68,100

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,	..	Rs. 2,250 per mensem.
average pay .. .. .	..
or		
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
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Total	1,01,630
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Excluding all printing charges, the annual expenditure involved in each province would be about a lakh of rupees.