



Report of the Bombay Economic and
Industrial Survey Committee
1938-1940

Volume I

BOMBAY

PRINTED AT THE GOVERNMENT CENTRAL PRESS

Obtainable from the Superintendent, Government Printing and Stationery,
Bombay, or through the High Commissioner for India, India House,
Aldwych, London, W.C.2, or through any recognized Bookseller

Price—Annas 8 or 10d.

1940

**The total cost of the Committee, excluding stationery and printing,
is estimated at Rs. 33,400.**

TABLE OF CONTENTS.

	Pages
CHAPTER I—Introduction	1-5
„ II—Definitions	6-10
„ III—The Economic Background	11-32
„ IV—The Human Element	33-48
„ V—A Survey of Existing Industries in the Province	49-93
„ VI—Difficulties and handicaps suffered by these Industries	94-111
„ VII—The State in relation to industrial development	112-138
„ VIII—A survey of industrial possibilities in the Province	139-146
„ IX—Recommendations	147-177
„ X—Summary of Recommendations	178-182
APPENDICES A—Statement of the heads of inquiry issued by the Committee.	183
B—Questionnaire issued by the Committee for artisans	184-194
C—Questionnaire issued by the Committee for small scale industries	195-197
D—List of the associations and individuals who submitted memoranda to the Committee	198-200
E—Interviews of the associations and individuals by the Secretary and by the Committee	201
F—Spare time occupations for agriculturists	202-207
G—Statement received from the Chief Conservator of Forests regarding industrial inquiries in progress by his Department	208-209

REPORT OF THE BOMBAY ECONOMIC AND INDUSTRIAL SURVEY COMMITTEE.

CHAPTER I.

INTRODUCTION.

Our Committee was appointed by the Government of Bombay in their General Department Resolution No. 2429/33, dated 21st April 1938, the first two paragraphs of which are reproduced below :—

Government are pleased to appoint a Committee consisting of the following members to carry out an Economic and Industrial Survey of the Bombay Province :—

- (1) Sir Purshotamdas Thakurdas, Kt.—*Chairman*,
- (2) The Director of Industries, *Ex-officio*,
- (3) C. N. Vakil, Esquire, M.A., M.Sc., F.S.S., University Professor of Economics and Administrative Head, University School of Economics and Sociology, Bombay,
- (4) Dr. P. U. Patil, Sugar Technologist (U. S. A.),
- (5) Mahomedally Habib, Esquire, and
- (6) Dr. V. K. R. V. Rao, M.A., Ph.D. (Cantab.), Principal and Professor of Economics, Seth Lalbhai Dalpatbhai Arts College, Ahmedabad—*Member and Secretary*.

The terms of reference to the Committee are as follows :—

(1) To examine the present position of small industries in the Province and to report on their place in the Provincial economy in relation to agriculture and large industries.

(2) To survey the work done by the Government of Bombay in the realm of economic development within the Province during the last 17 years with special reference to agriculture, large industries and small industries.

(3) To report on the measures which Government can undertake to promote economic development within the Province and to suggest methods of financing the same.

(4) And finally to make such other recommendations as pertain to State policy with regard to economic development within the Province.

2. These terms of reference were later slightly amended in the Government letter, General Department, No. 2429/33-D, dated 29th June 1938, under which the Committee was asked not to enquire into the activities or objectives of the All-India Spinners' Association and the All-India Village Industries Association. Subsequently the Committee was asked by Government in their letter, General Department, No. 2429/33-D, dated 28th January 1939, to examine in detail the work which has been done and is being done by the Department of Industries for the furtherance of the industrial development of the Province and to report if any measures are necessary for augmenting the utility of the work done by the Department.

3. We held our first meeting on the 23rd April 1938 when preliminaries were discussed and the line of work decided on. We came to the conclusion that no useful purpose would be served by issuing a general questionnaire, but that a detailed statement of heads of inquiry should be compiled under which information was to be obtained. Copies of this statement were circulated to the heads of Government Departments, to Collectors and *Mamlatdars* and to Chambers of Commerce and other industrial associations. A copy of this statement is printed as Appendix A. We are glad to state that a good deal of useful information regarding the economic resources of the Province was made available to us in this way.

4. In view of the fact that the terms of reference mention an economic and industrial *survey* of the Province, we suggested to Government that an industrial census of the Province should be undertaken on a sample basis so that some substantial data could be obtained on the condition of small industries in the Province. For financial reasons Government were unable to accept our suggestion and the matter was left over. It will be noticed that in the chapter on Recommendations, we strongly urge the need for undertaking such an industrial census in the near future.

5. Failing the industrial census, we thought the next best thing to do was to obtain information on the condition of small industries in the Province through investigators appointed for the purpose. Accordingly we appointed five investigators, one for each of the Divisions of the Province, viz., the Northern, Central and Southern Divisions and the other two for Bombay City and Suburbs. We prepared a special questionnaire for the artisans and got this translated into the regional languages of the Province. Copies of this questionnaire were supplied to the investigators who visited the different districts and met representative workers in the various cottage industries; copies of the questionnaire were supplied to the artisans and the investigators personally noted down their replies. A copy of this questionnaire is printed as Appendix B. In this manner more than 700 forms were filled up by the investigators. As regards Bombay City and Suburbs, the industries to be inquired into were not mainly of the cottage type; another questionnaire was accordingly prepared for these industries and copies supplied to the investigators for Bombay City and Suburbs. A copy of this questionnaire is printed as Appendix C.

6. In addition to the information thus obtained from the heads of Government Departments, revenue officials and the investigators, the Committee were able to obtain memoranda from a number of commercial and industrial associations including the Bombay and Ahmedabad Mill-owners' Associations, The Indian Merchants Chamber and several organisations of weavers in the Province. Some of these associations also sent us their representatives to further clarify the points raised in their memoranda. A list of the associations and individuals who submitted their memoranda to us and the names of those who appeared

before us for oral examination are contained in Appendices D and E. Further in order to obtain some idea of the conditions of village industries, the Committee undertook through the revenue agency a sample survey of one in twenty villages in the Province. A very simple questionnaire regarding the number and classification of artisans in each village formed the basis of the inquiry. The information thus collected is made use of in the various district reports. In this manner a good deal of information was collected regarding the conditions, handicaps and difficulties of cottage and small scale industries in the Province. On the basis of the information collected by the investigators as also of other available data, reports have been drawn up containing brief notes on the economic features of the different districts and the condition of the cottage industries therein. These reports cannot be regarded as economic and industrial surveys of the districts concerned ; those can only be written if a regular industrial census has been held for the purpose. But they do contain useful data on the economic and industrial conditions of the districts and as we consider that even this limited data will be found to be of some use, we are submitting all our district reports to Government as Volume II of our report, Volume I of course containing our observations on the Province as a whole. In this connection we would like to emphasise that our report cannot be described as an economic and industrial survey of the Bombay Province, for the necessary data for the purpose could not be collected by us in the absence of an industrial census. All that we have done, therefore, is to discuss the general economic conditions of the Province with particular reference to cottage and small scale industries on the basis of available data, including what was obtained by us in response to our various inquiries and that collected by the investigators ; and we have made concrete proposals for the improvement of the condition of the industries of the Province and for their further development. Our report, therefore, should legitimately bear the title "Small Industries Enquiry Report" rather than "The Bombay Economic and Industrial Survey Committee Report".

7. In this connection we have been greatly impressed by the enormous scope for very useful work that can be done by a Government Department continuously at work from year to year, following up the information given in our main report and district reports and the other information available to us in the various memoranda put up by individuals and associations in the rural and urban areas. We feel that the Secretariat organisation at the Headquarters of Government must be regarded as incomplete without an Economic Development Department that can make available to the Cabinet the various details regarding the needs of the rural and urban areas. In order to serve this purpose, the Department must be well staffed and must keep in constant and continuous touch with the various economic requirements of the districts of the Province. It can also act as a liaison between the different departments of Government from the point of view of the economic betterment of the Province as a whole. It is also essential that public interest should be created in the problems of their own economic amelioration and it should be a part of the work of this Department to achieve this end.

We found that the tours of our investigators and their coming into personal contact with artisans in the urban and rural areas aroused the interest of the rural masses in their own economic problems ; and as a first step in the direction of maintaining and intensifying this interest, we suggest that our different district reports should be translated in the regional languages of the district concerned and made available to the people there at nominal prices. It should also be the work of this Department to follow up these district inquiries and obtain additional data bearing on the economic condition and needs of the various districts ; and in this task an intelligent interest in their economic problems by the people of the district concerned will prove of invaluable help.

8. The Committee held in all 39 sittings. Originally the Committee had been asked to report by the end of October 1938, but obviously it was impossible to make anything like a reasonable study of the problems presented by the terms of reference within a period of six months. Moreover, the full-time services of the Member-Secretary of the Committee, Dr. V. K. R. V. Rao, were available only up to the end of October. After 31st October 1938 Dr. V. K. R. V. Rao returned to his duties as Principal of the Seth Lalbhai Dalpatbhai Arts College, Ahmedabad, and thereafter only his part-time services were available to the Committee. This meant that only during his College vacation periods he devoted his whole time to this work. Naturally, therefore, the period for submission of the Committee's report had to be extended from time to time and the final meeting of the Committee was therefore held as late as the 25th November, 1939. The Committee's office had to function for another period of four months in order that the Member-Secretary could suitably prepare for publication the manuscripts of the different district reports which constitute Volume II.

9. The general arrangement of our report is as under :—

We first begin with a note on definitions, the terms to be defined being cottage industries and small scale industries, as these two expressions are used so much in the rest of the report.

Chapter III deals with the economic background of the Province.

Chapter IV discusses the human element or the number, distribution, quality, etc., of the population which, taken in conjunction with the economic background, results in the Province's economic activity.

In Chapter V we proceed to a general survey of the industries in the Province.

In Chapter VI we state and discuss their difficulties.

In Chapter VII we discuss the action taken by the Bombay Government so far in regard to industrial development.

In Chapter VIII we indicate in brief some of the possibilities for further industrial development of the Province.

In Chapter IX we make our recommendations regarding the measures that should be adopted for dealing with the difficulties of the existing

small-industries of the Province as also for helping in the further industrial development of the Province.

In Chapter X we summarise the main recommendations made in our report.

We would be failing in our duty if we do not acknowledge the great assistance which we obtained from both officials and non-officials in connection with our work. In particular we are indebted to the Department of Industries for the constant help we received from them at different stages of our enquiry and the way the whole Department whole-heartedly co-operated with us.

10. At our last meeting we passed the following resolution unanimously regarding the valuable work of our colleague Dr. V. K. R. V. Rao as Member and Secretary and we think it necessary to quote it here :—

“Resolved that the Committee do place on record their cordial appreciation of the work done by Dr. V. K. R. V. Rao, as Secretary. In spite of his pre-occupation with his College duties, Dr. Rao put in an enormous amount of work, drafted all the Chapters, and placed before the Committee in readily assimilable form all the information made available to the Committee. But for his whole-hearted and sincere labours, the Committee could not have submitted their report by the end of the prescribed period.”

We would also like to express our thanks to Mr. P. S. Nadkarni, Assistant Secretary, to Messrs. S. M. Muzumdar, N. M. Joshi, A. B. Trivedi, N. M. Kale and R. P. Cholia, Investigators, and to the other members of our staff who had to work hard collecting and arranging a large mass of material within the limited time at our disposal.

CHAPTER II.

DEFINITION OF LARGE SCALE, SMALL SCALE AND COTTAGE INDUSTRIES.

11. *Need for Definitions.*—The terms of reference of the Committee classify the industries of the Province under the heads small industries and large industries. By small industries we understand what are currently known as cottage industries and also those which are termed small scale industries. As these types of small industries are very different in their organisation and involve different kinds of problems, we have thought it fit to treat separately of cottage industries and of small scale industries. As these expressions figure a great deal in the succeeding pages, it is desirable that they should be defined at the very outset of our report.

12. *Cottage Industries.*—The expression cottage industries is not easily defined. Some people hold that its essence lies in the manufacture being carried on in the home of the worker while others would narrow its scope further by the suggestion that in order to be classed as a cottage worker, the artisan should be working on his own. Another definition of a more comprehensive type places emphasis on the absence of the use of power and not on the place where the manufacture is carried on. The Industrial Commission, in paragraph 206 (a) of their report defines the term as “industries carried on in the homes of the workers, where the scale of operations is small and there is but little organisation so that they are as a rule capable of supplying only local needs”. This definition excludes industries of a *karkhana* type though the methods of work followed therein may not be different from those of industries carried on in the artisans’ homes. The U. P. Industrial Finance Committee goes a step further and defines a cottage industry as “one which is carried in or at his own home either on his own account or under the direction of his *karkhandar*”. It will be noticed that this definition still leaves out industries carried in a *karkhana* under cottage methods of working. The definition of cottage industries by the U. P. Industrial Reorganisation Committee is more comprehensive and states that cottage industries are those “in which work is done generally speaking in the homes of the artisans and occasionally in small factories run by small industrialists of the entrepreneur type, power-driven machinery being rarely used”. We are of the opinion that the fundamental characteristics of a cottage industry are : (1) the absence of the use of power and (2) the location of the manufacture in the home of the cottage worker. From an ideal point of view a third characteristic should be the ownership of the instruments of production by the cottage worker himself and a kind of organisation where the industrial worker will either be his own master or will belong to a co-operative organisation. In actual practice, however, we believe that the definition of the industry will have to be extended also to concerns where the workers are employed, in the home of the employer, the fundamental condition of the non-use of power being satisfied. We propose, therefore, to adopt the following definition of cottage industries.

13. *Definition of Cottage Industries.*—Cottage industries are industries where no power is used and the manufacture is carried on generally speaking, in the home of the artisan himself and occasionally in small *karkhanas* where not more than 9 workers are employed. One reason for placing the maximum number of workers in cottage industry units at 9 is because *karkhanas* of hand-loom weavers even though they do not use power, are subject to the provisions of the Indian Factories Act if they employ ten men and over; and we feel that *karkhanas* which are big enough to be brought within the provisions of the Indian Factories Act and are subject to inspection, etc., by the Chief Inspector of Factories should not be included in cottage industries.

14. Industries which fulfil this definition and which form the principal occupation of the worker concerned will be termed by us as whole-time cottage industries; those which conform to the definition of cottage industries but afford only subsidiary occupation to the workers engaged therein will be termed by us as part-time cottage industries. When we use the expression "cottage industries" without any prefix we will mean by it whole-time cottage industries. When we want to refer to the part-time cottage industries, we shall be saying so specifically. We give below illustrative lists of whole-time and part-time cottage industries in the Province:—

COTTAGE INDUSTRIES.

(i) *Whole-time cottage industries.*

- (1) Hand-loom weaving.
- (2) Calico Printing and Dyeing.
- (3) Paper making.
- (4) Bangles making.
- (5) Oil Pressing by *ghanis*.
- (6) Soap making.
- (7) Tanning.
- (8) Shoe and *champal* making, bags, harnesses, belts, etc.
- (9) Carpentry, ship building, house building, cart making, etc.
- (10) Toy making.
- (11) Black-smithy, cutlery, locks, etc.
- (12) Pottery, tiles and bricks.
- (13) Mango canning and other fruit products.
- (14) Sandalwood and ivory carving.
- (15) *Bidi*-making.
- (16) Gold-smithy, engraving, jewellery.
- (17) Glue-making.
- (18) *Kumku* making.

- (19) *Agarbatti*, scents and toilet products.
- (20) Fishing, and fish curing.
- (21) Cap-making.
- (22) Assembling of Harmoniums.
- (23) Preparation of Helium batteries.
- (24) Rubber stamp-making.
- (25) Book-binding.
- (26) Confectionery products.
- (27) Fireworks.
- (28) Preparation of brushes.
- (29) Snuff.
- (30) Die-making.
- (31) Button manufacture.
- (32) Copper and brassware like *Handas*, *Thalis*, Plates, etc.
- (33) Slates, sandal grinding and other grinding stones, marbles, etc.

(ii) *Part-time cottage industries.*

- (1) Sericulture.
- (2) Poultry farming.
- (3) Sheep breeding.
- (4) Apiculture.
- (5) Lac industry.
- (6) Dairy Farming.
- (7) Cashew-nut kernels (removal of the shells).
- (8) Gardening and vegetable culture.
- (9) Fruit cultivation, dried fruits, etc.
- (10) Basket making.
- (11) Paddy husking.
- (12) Flour grinding.
- (13) *Gur* making.
- (14) Cotton ginning, carding and spinning.
- (15) Wheat flakes, parched rice, pickle powder, betel-nut slices, etc.
- (16) *Dal* milling.
- (17) Rope, fishing nets, etc.
- (18) Wood cutting and charcoal burning.
- (19) Umbrellas and fans from palm leaves.
- (20) *Patravali* making.
- (21) *Chunam* burning.
- (22) Knitting, embroidery.
- (23) Catechu boiling.

15. *Small Scale Industries.*—By small scale industries we understand industries where power is used and where the number of workers does not exceed 50 and the capital invested is less than Rs. 30,000. Small scale industries also include industries where no power is employed provided the manufacture is carried on in *karkhanas* and the number employed exceeds 9. An illustrative list of small scale industries in the Province is given below :—

SMALL SCALE INDUSTRIES.

- (1) Motor repairing.
- (2) Locomotive workshops.
- (3) Manufacture of textile wooden parts.
- (4) Manufacture of healds and reeds.
- (5) Manufacture of mill belting.
- (6) Manufacture of Motor cushions.
- (7) Engineering industry, preparing parts of gins and presses, sugarcane crushers, etc.
- (8) Tape making.
- (9) Roller skins.
- (10) Pickers manufacture.
- (11) Bobbin making.
- (12) Machine-made brass, copper and aluminium ware.
- (13) Glass and articles of glass.
- (14) Oil pressing.
- (15) Gold and silver thread and allied products.
- (16) Furniture making.
- (17) Cutlery.
- (18) Tiles and bricks.
- (19) Iron foundries.
- (20) Mango canning and fruit preserving.
- (21) Type foundries.
- (22) Ink.
- (23) Incandescent lamps.
- (24) Cigarette making.
- (25) Watch manufacture.
- (26) Hosiery.
- (27) Manufacture of safes, racks and iron furniture.
- (28) Manufacture of soap.
- (29) Manufacture of aerated waters, fruit drinks, ice, etc.
- (30) Dyeing and bleaching.

- (31) Dairy produce.
- (32) Chemicals, drugs, etc.
- (33) Bakeries.
- (34) Paints works.
- (35) Printing presses.
- (36) Tanneries.
- (37) Cotton ginning and pressing.
- (38) Soap making.
- (39) Steel trunks, buckets, etc.
- (40) Bakelite manufacture.
- (41) Brass and nickel fittings.
- (42) Sanitary ware.
- (43) Rice and flour mills.

16. *Large Scale Industries.*—By large scale industries we understand industries where power is used and the number employed exceeds 50 and the capital invested is above Rs. 30,000. Large scale industries are easily recognisable by the public ; nevertheless for the sake of completeness we give below an illustrative list of large scale industries in the Province :—

LARGE SCALE INDUSTRIES.

- (1) Cotton, silk, and woollen mills.
- (2) Engineering factories.
- (3) Large flour mills.
- (4) Cigarette factories.
- (5) Match factories.
- (6) Chemical factories.
- (7) Oil mills.
- (8) Saw mills.
- (9) Soap manufacture.
- (10) Sugar factories.
- (11) Gas works.
- (12) Paper mills.
- (13) Printing presses.
- (14) Assembling of motor cars, coach-building, etc.
- (15) Workshops of railways, tramways, etc.
- (16) Tiles and bricks manufacture.

CHAPTER III.

THE ECONOMIC BACKGROUND.

17. *General.*—The Province of Bombay now shortened in length by the separation of Sind, stretches from latitude 14° N. to 23° N. and from longitude $71^{\circ} 5'E.$ to $76^{\circ} 4'E.$ and covers an area of 77,221 square miles, exclusive of States. It is bounded on the north by the States of Kathiawar, on the east by the States of the Central India Agency, Central Provinces and Berar, and Nizam's territory; on the south by the Province of Madras and on the west by the Arabian Sea. The territory is not uniform in climate and physical features but falls into four distinctive regions known as Gujarat, Maharashtra, Karnatak and Konkan.

18. *Regional Divisions.*—Gujarat is 10,193 square miles in area and contains the districts of Ahmedabad, Kaira, Broach and Panch Mahals and Surat. The soil is extremely fertile and particularly suitable for cotton. There are no mountains or hills in this area, but it is well served by rivers, the most important of which are the Narbada and the Tapti. Maharashtra is 38,399 square miles in area and includes the districts of Nasik, Ahmednagar, Poona, Sholapur, Satara, East Khandesh and West Khandesh. Large tracts of rocky and uncultivable land are found in this area. The three great southern rivers, the Godavari, the Bhima and the Krishna, have their source in this tract. Rainfall is uncertain in the eastern part, while the western part, particularly near the Ghats, gets a heavy rainfall. South of Maharashtra is the region known as the Bombay Karnatak covering an area of 14,928 square miles and containing the three districts of Bijapur, Belgaum and Dharwar. This tract excepting the district of Bijapur, enjoys a good water supply and has also an assured rainfall. The district of Bijapur, however, is more similar to the eastern areas of the Deccan, as rainfall is erratic and the area is liable to famines. The Konkan represents an entirely different region with an area of 13,701 square miles. It comprises the low-lying tract which lies between the Western Ghats and the sea, and includes the districts of Thana, Kolaba, Ratnagiri, North Kanara, Bombay Suburban district, and the City of Bombay. Excepting for the City of Bombay and the Suburban district, it is a difficult country to travel in, for, in addition to small rivers and creeks, there are a number of isolated peaks and detached ranges of hills and until the recent development in motor traffic, most of this area used to be practically isolated. Rainfall is very heavy and rice cultivation and fishing are the chief occupations of the region.

19. *Mountains.*—In the north, an extensive chain of mountains separates Gujarat from the States of Central India. South of the Tapti, the Sahyadri Hills run southward and separate the Konkan from the rest of the Province. The other two mountain ranges in this Province are the Satpura Hills and the Satmala or Ajanta Hills, both of which run from east to west, and separate the Province of Bombay from the State of Indore and the Nizam's territory respectively.

20. *Rivers.*—The most important rivers in the Province are the Narbada and the Tapti in the north and the Godavari and the Krishna in the south. The Narbada has a westerly course from Central India, and meets the sea at the Gulf of Cambay. It is navigable for about a hundred miles from the sea at all seasons by country crafts and during rains by bigger vessels. The Tapti is a smaller river but has great commercial importance, as it flows through the whole length of Khandesh and passes the City of Surat on its way to the sea. The Godavari rises near Nasik while the Krishna has its source at Mahableshtar. Both these rivers flow in a south-easterly direction and meet the Bay of Bengal, crossing the entire plain of the Deccan. The coast-line of the Province is deeply indented by the Gulfs of Cutch and Cambay and broken by many bays and creeks.

21. *Rainfall.*—The rainfall of the Province is derived chiefly from the south-west monsoon between June and October. In the eastern tracts of the Deccan and the Karnatak, this supply is supplemented by the north-east monsoon which follows the close of the south-west monsoon. The amount of rainfall falling in different areas shows great variation. Thus on the Konkan side it ranges from 150" at Bhatkal in Kanara to 99" at Ratnagiri and from 86" at Alibag in the Kolaba district to 62" at Umergaon in the Thana district. The Mawal or the Mallad tract comprising the western portions of the districts of Nasik, Poona, Satara and Ahmednagar in the Deccan and of the Belgaum and Dharwar districts in the Karnatak receive a rainfall of 35" to 50". The Khandesh and the Desh tracts comprising the rest of Maharashtra and Karnatak receive only 20" to 30" of rain, with the result that Ahmednagar, Sholapur, Bijapur and the eastern portions of the districts of Poona and Satara are particularly exposed to the risk of recurrent famines. Gujarat receives a normal rainfall of 32·4" and is free from danger of a serious drought.

22. *Harbours and Ports.*—The port of Bombay which is situated on an island of the same name in latitude 18° 95'N. 72° 54'E, owes its importance to its geographical position and to its magnificent natural harbour. Until the middle of the 19th century Bombay was little more than a collecting centre for smaller ports of the west coast and for the relatively small strip of land between the Western Ghats and the sea. A period of progress was initiated by the establishment in 1839 of a regular monthly mail service to England by the overland land route across Egypt and 12 years later commenced the work of linking up Bombay by railway with the cotton growing tracts above the Ghats and the wheat fields of the Punjab and the United Provinces. The American Civil War gave Bombay Cotton an unparalleled opportunity and if the reckless speculation which ensued swallowed up many private fortunes, the port itself emerged with its wharves and accommodation

greatly increased and improved and its commercial potentialities unimpaired.

Bombay is connected with Gujarat and North India by the B. B. & C. I. Railway ; of the raw materials brought down to the Port for export, by far the most important is cotton, the other principal items being hides and skins, twist and yarn, grain and seeds, and manganese ore, while bullion, cotton manufactures, hardware, metals, machinery and kerosene oil are the chief imports. Bombay has not the advantages possessed by Calcutta in having rich coal fields within two hundred miles or a system of navigable rivers to bring produce down to the Port but on the other hand it boasts a natural harbour directly upon the sea, which, thanks to its situation, is open at all times of the year.

The harbour is about 4 miles long from north to south, with a general width of from 4 to 6 miles, the anchorage for vessels being on the sheltered eastern side of the island. There is also a direct communication between the railways, docks and goods depots and extensive storage shed accommodation at Sewri.

The affairs of the Port are under the supervision and control of the Bombay Port Trust.

The next port of major importance is the Portuguese harbour, Marmugoa. It has developed considerably in recent years as a port. A breakwater 1,200 feet long was completed in 1916 to afford shelter against the south-west monsoon and within the sheltered harbour thus created there is a quay wall at right angles capable of berthing several ocean-going steamers. The Port is open all the year round. Marmugoa is a distributing port and her foreign exports consist chiefly of the produce of Mysore and Hyderabad and the Bombay Deccan, particularly cotton and manganese, but shipments of the latter which formerly went to the United Kingdom have been practically suspended of recent years owing to lack of freights.

23. There are no other major ports though there are many minor ports at which trade is carried on during fair weather. Among these may be mentioned Dhollera, Broach, Surat and Bulsar on the Gujarat coast and numerous small ports on the Konkan coast, the more important among these from the point of view of trade, being Ratnagiri, Dabhol, Malwan, Vengurla and Honavar. The Dhollera port is connected by road to the Railway Station at Dhandhuka at a distance of 18 miles. It possesses natural advantages and is situated within convenient distance from the chief centres of trade and industry in Kathiawar and North Gujarat. Broach and Surat are well known old ports. The safest harbours on the Konkan coast are Jaigad and Vijaydurg in the Ratnagiri district and Karwar in the North Kanara district. Details regarding the value of import and export trade at

these various minor ports as given in the Report of the Bombay Minor Ports Committee for the year 1936-37 are reproduced below :—

TABLE I.

			(Rupees in Lakhs.)	
			Imports.	Exports.
Dhollera	..	..	1·9	4·0
Broach	..	..	59·1	48·7
Surat	..	..	29·7	10·8
Bulsar	..	..	11·7	8·0
Revdanda	..	..	12·4	10·9
Bankot	..	..	22·0	6·4
Dabhol	..	..	28·7	11·0
Ratnagiri	..	..	43·5	18·7
Jaitapur	..	..	22·2	3·1
Malwan	..	..	31·6	6·1
Vengurla	..	..	20·5	10·8
Karwar	..	..	10·0	6·1
Sanikatta	..	..	9·2	11·0
Honavar	..	..	16·8	11·5
Jaigad	..	..	11·7	0·6
Vijaydurg	..	..	10·8	1·9
Bhatkal	..	..	4·2	0·2

24. *Transport facilities.*—Transport facilities form an important part of the economic background which not only facilitate but also determine the extent of industrial development; and it cannot be said that the Province is rich in the facilities it has for transport. The total mileage of railways in the Province is 2,390 miles which is less than 6 per cent of the total mileage in India. The main railway lines belong to the G.I.P., B.B. & C.I. and M. & S.M. Railways. While Gujarat and the Deccan are more or less well served with railways, Karnatak is not equally fortunate. The Konkan districts of Kolaba, Ratnagiri and Kanara are not served by any railways. These districts have, therefore, to depend on motor and steamer traffic for their transport requirements. The coastal towns of the Province are served by the steamer companies which have their headquarters at Bombay. The Ratnagiri and Kolaba districts are served by daily steamers starting from Bombay and there is a good deal of passenger and cargo traffic. The Kanara district, however, has to depend upon the bi-weekly steamers starting from Bombay and even these do not function during the four months of the monsoon.

The other means of transport is the motor vehicle. All the Province over, motor transport has of recent years made very rapid progress. According to the Bulletin issued by the Indian Roads and Transport Development Association, the total number of motor vehicles in operation in the Province on 1st January 1939, was 31,736 which included 19,551 private cars, 5,575 taxis and buses, 4,772 lorries and 1,838 motor cycles. The growth of this rapid means of transport is, however, greatly

handicapped by the inadequacy of good metalled roads. According to the statistics available with the same Association, the total mileage of roads in the Province is 20,629, of which nearly 4,300 miles or 1/5th of the total mileage are unmotorable and 1,583 miles are motorable only during fair weather. There are only 170 miles of roads of asphalt, tar, cement concrete, etc., while macadam surfaced roads are not more than 216 miles in length. The majority of roads are of stone metal, *kankar* and gravel *mooram*. And the mileage of roads maintained by the Public Works Department or the Government is only 6,890 miles or about 1/3rd of the total mileage of roads in the Province. We made inquiries from Collectors and Presidents of District Local Boards on the subject of road transport facilities in the areas under their jurisdiction and we were shocked to learn that in a number of districts, as much as 40 per cent. to 75 per cent. of the total area is not served by roads, while large parts of the districts are totally cut off from communication with the urban areas during the monsoon months.

We have, therefore, been greatly impressed with the lack of adequate road transport facilities in the Province and we feel that this deficiency in the economic structure of the Province needs immediate attention. We revert to this subject in Chapter IX where we make our recommendations to Government regarding what should be done to promote the industrialisation of the Province.

25. *Power Resources.*—The Province is richly supplied with resources of hydro-electric power; though not all these are developed there is still considerable production of electric energy in this Province as compared to the other Provinces.

Thus there are 66 electric supply companies in the Province, of which 12 have been only recently started. The figures of the production of electric energy in the Province according to Divisions and Bombay City are :—

TABLE 2.

	(In millions of units).			
	Number of companies.	Units generated.	Units sold.	Units sold for industrial purposes.
Bombay City	4	586·0	503·0	284·0
Northern Division ..	18	24·6	23·9	17·7
Central Division	31	4·4	3·8	2·2
Southern Division ..	13	2·0	1·6	0·7
Total	66	617·0	532·3	304·6

(These figures were especially obtained by us from the various electricity companies).

Of these, eight companies take their supply from the Tata Hydro-Electric Supply Companies. The above figures show that excluding Bombay City which accounts for more than 93 per cent. of the energy utilised for industrial production, the Northern Division consumes the highest and the Southern Division the least electric power for industrial purposes. This is because while the Southern Division comprising the Karnatak and some of the Konkan districts is very backward in industrial progress, the Northern Division contains such industrially advanced districts like the Ahmedabad, Surat and the Bombay Suburban district. Taken as a whole, electricity as a motive power for industrial production does not seem to have been appreciably utilised, the high charges for electric supply being the main cause. It must be pointed out, however, that there are immense possibilities for increasing the supply of electricity in the Province. The report on the Hydro-electric survey of India mentions the following sites as worth further investigation :—

- (1) *Kalinadi River*.—Site near Kheda village in Supa *petha* of the Kanara district.
- (2) *Bedti River*.—Site near Magod in Yellapur *taluka* of the Kanara district.
- (3) *Bene Nala*.—On the Sirsi-Kumta Road in the Kanara district.
- (4) *Kaneri River*.—Site about ten miles from Kumbharwada in the Kanara district.
- (5) *Hiraryakshi River*.—Site about 38 miles from Belgaum.
- (6) *Mahadeo River*.—Site at 17 miles from Khanapur in the Belgaum district.
- (7) *Urmodi River*.—Site near the town of Satara.
- (8) *Venna River*.—Site near Mahableshtar.
- (9) *Pravara River*.—Site near Bhandardara storage work, Ahmednagar district.
- (10) *Damanganga River*.—Site near Umbrale in the Nasik district.
- (11) *Vaiterna River*.—Site near Wai and Dhargaon villages in Nasik district.
- (12) *Girna River*.—Site near Girmal village in Surat-Dangs.

Recently, Government realising the necessity of making available electricity in both urban and rural areas on an extended scale and at cheap rates, have directed the Electrical Engineer to Government and the Director of Industries to jointly make a survey of the entire power resources of the Province with special reference to the possibility of establishing big central thermal and hydro-power houses to generate electricity at cheap and economic rates and to put up a grid system interlinking the various power houses in the Province. It is understood that the report of this survey will be submitted shortly.

Besides electricity, gas, steam and oil are also used for power purposes. The use of gas is mainly confined to Bombay City; and according to the Bombay Gas Company, there are some 11,000 small concerns in

Bombay City which use gas for power purposes. In the mofussil, oil and steam engines play a prominent part. The number of steam boilers in the Province according to the latest report is 1910. As regards oil engines the latest statistics collected by the Department of Industries in respect of eighteen districts (excluding Bombay Suburban and Bombay City) revealed that there were about 1,600 engines working on oil.

26. *Minerals.*—There have been several geological surveys which have covered parts of the Bombay Province, and it appears that with the exception of building stones, salt and manganese ore, this Province does not possess any other minerals of commercial importance. It is true that traces of iron are reported at different places in the Province, particularly in Kaira, Panch Mahals, Surat, Belgaum, Bijapur, Dharwar, Kanara and Satara; and the district Gazetteers state that in the past, iron was manufactured in a number of these places on a small scale. The general reason given for the decline of this craft was either lack of availability or the high price of fuel and the consequent higher cost of producing iron in these places. It may also be stated that gold was reported to have been obtained on a considerable scale in the Dharwar district. Prospecting for this metal was also undertaken recently, but the results were said to be not very encouraging. Bauxite, so important in the manufacture of aluminium, is reported to be available in the Belgaum, Kaira and Thana districts. It may also be added that according to a survey undertaken by the Industrial Chemist of the Department of Industries possibilities of commercial exploitation exist in the bauxite deposits of Tungar Hill in the Thana district. Manganese ore is found in large quantities in the Panch Mahals and also to some extent in the districts of Dharwar, North Kanara, Ratnagiri, Belgaum and Satara. At these latter places, however, the ores are reported to belong to the laterite group which have not much commercial value and are also said to occur in a very irregular manner, which makes their exploitation even more uneconomic. Agates are reported to be found in small quantities in the Deccan and Gujarat. Gravel, limestone and *marum* occur in almost all the districts, but the best stones for building come from Kathiawar. We may also mention in this section the existence of hot springs with medicinal properties in the districts of Broach and Panch Mahals, Ratnagiri and Thana.

On the whole, it must be admitted that Bombay certainly is not rich in its mineral resources; and some basic minerals like coal are not found at all. But we have gathered the impression that a comprehensive geological survey of all parts of the Province from an industrial point of view still remains to be made; and we see no reason why this should not be undertaken by the Provincial Government.

27. *Forests.*—With the separation of Burma from India, Bombay has now become an important forest Province standing next only to the Central Provinces and Madras in the area under forests. In fact, if we judge by the quantity of outturn, Bombay is the most important Province as its forests produced during 1936-37 nearly 50 million cubic feet of timber,

and fuel, the nearest to this figure being 47 million cubic feet by the Central Provinces and Berar forests. Similarly, the value of minor forest produce of Bombay was Rs. 29·5 lakhs, the nearest to it being Rs. 20·2 lakhs of the Central Provinces and Berar. Thus, in terms of quantity of timber and fuel and the value of minor forest produce, Bombay Province stands foremost among the British Indian Provinces.

The total area under forests in this Province is 12,998 square miles or about 8·3 million acres. More than half of this area is concentrated in four districts, North Kanara, claiming 2 million acres, West Khandesh 1·3 million acres, and Thana and Nasik 0·8 million acres each. According to official information, about 60 per cent. of this total area can be regarded as commercial forests, yielding timber for trade; about 30 per cent. yields small timber, fuel, etc., for local supplies, while 10 per cent. is climatic forest, inaccessible hill tops along the Western Ghats, and evergreen forests mainly useful for regulating water supply for the fields and villages in the valleys below. The result is that not only is there no timber available for export, but actually the Province has to import supplies of timber both from Burma and from abroad.

The main produce of the forests of course is timber. The Chief Conservator of Forests estimates the average outturn of timber in the Bombay Province at 6,637,000 cubic feet of which the Northern circle claims 2,790,000 cubic feet, the Southern circle 2,493,000 cubic feet and the Central circle 1,354,000 cubic feet. Other kinds of wood form a valuable source of charcoal and firewood. Bombay has another important forest product, bamboo, the various manufactures of which give employment to a considerable number of persons. The Forest Department estimates the average annual extraction of bamboos in the Province at 2,788,300 culms of which the Southern circle claimed no less than 2,045,300 culms. Some sandalwood is also found in the Dharwar, Bijapur and the Belgaum Divisions of the Southern circle, the average output being estimated at 816 *khandies*. Soft woods of the varieties known as *sawar* blackwood, *anjan*, etc., are found in all circles particularly in the Kanara and Khandesh forests. A number of valuable trees such as *palas*, *khair*, *babul* and *ain* are found in the major forests and these trees are not only useful as timber but also yield other commercially valuable products such as tanning dyes, gums, catechu, etc. Among the minor products must be mentioned myrobalans, lac, bark (*turwad* and *babul*), leaves, grass, cinnamon, honey, *rosha* grass, economically utilisable fruits and seeds such as *shigekai*, tamarind, nux vomica, *karanj*, *mhowra* seed, etc. Myrobalan is the most important of these and is exported in large quantities to foreign countries. The annual average quantity collected of this important product is placed by the Forest Departments at 7,016 tons, of which 3,451 tons were collected from forest areas and the rest from non-forest areas. The forests also possess fibre plants of importance like agave and sago palm. The former is found in the Nasik, Satara, Ahmednagar and Poona districts, while the latter is found in plenty in the forests of Thana and Kanara. Large supplies of cane are available in the Kanara forests. Mention may also be made of the *tad* palm which

yields leaves from which fans, umbrellas, etc., are prepared, and the *apta* and *temburni*, the leaves of which are used for *bidi*-making. The total value of the forest produce in this Province was Rs.42·5 lakhs in 1937-38. Details are as under :—

TABLE 3.

Rs. (000 s.)

	Northern Circle.	Central Circle.	Southern Circle.	Total.
Timber	1,447·4	345·6	1,284·3	3,077·3
Firewood and Charcoal ..	22·5	86·4	187·0	295·9
Bamboos	18·8	13·7	65·9	98·4
Sandalwood .. ..	....	0·3	200·1	200·4
Grazing and Fodder grass ..	126·3	304·2	40·6	471·1
Minor forest produce ..	30·8	40·9	37·0	108·7
Total ..	1,645·8	791·1	1,814·9	4,251·8

(Annual Forest Administration Report of the Province of Bombay)

Many of these forest products are capable of more extensive commercial utilisation, but we shall say more about this matter in Chapter VIII where we discuss the industrial possibilities of the Province.

28. *Agriculture*.—Of the total area of 48·7 million acres which the Bombay Province comprises, no statistical returns are available for 3·7 million acres ; some estimates are, however, found in the annual Season and Crop report of the Province. Of this total of 48·7 million acres in the Province, 8·3 million acres are under forests and 5·7 million acres consist of land which is not available for cultivation. 5·1 million acres are reported to be under current fallows, while there are only 9 million acres in the whole Province which consist of culturable waste land unoccupied and unassessed. The most important districts from the point of view of their possession of this culturable waste are West Khandesh 164,601 acres, Broach and Panch Mahals 104,891 acres, Ahmedabad 75,544 acres, East Khandesh 62,615 acres, Kanara 58,025 acres, Belgaum 53,075 acres and Thana 52,489 acres. The area actually under cultivation was 29·7 million acres of which 1 million acres bore more than one crop. The important districts from the point of view of their possession of double cropped area are Poona 181,936 acres, Satara 130,524 acres, West Khandesh 115,790 acres, Ahmednagar 80,155 acres, Broach and Panch Mahals 74,265 acres and Surat 68,599 acres. Details of the acreage under different crops for the total cropped area (including the area cropped

more than once) as given in the Season and Crop Report of the Province for the year 1937-38 are shown below :—

TABLE 4.

		(Figures in thousands.)	
Food crops	.. <i>Jowari</i>	..	8,073
	<i>Bajri</i>	..	4,030
	Rice	..	2,037
	Wheat	..	1,831
	Gram	..	674
	Ragi	..	646
	Maize	..	164
	Other food grains includ- ing pulses	..	2,727
	Fruits and Vegetables	..	203
	Sugarcane	..	71
	Other Sugars	..	1
	Miscellaneous	..	2
Non-food crops	.. Cotton	..	3,862
	Groundnut	..	1,344
	Condiments and Spices	..	201
	Tobacco	..	170
	Sesame	..	166
	Linseed	..	112
	Castor seed	..	42
	Cocoanut	..	28
	Rape and Mustard	..	20
	Other oil-seeds	..	678
	Fibres other than cotton.		78
	Drugs and Narcotics other than tobacco	..	27
	Miscellaneous	..	7
			2,490
			29,684
	Total	..	29,684

It will be seen that the important food crops of the Province are *jowari*, *bajri*, wheat and rice, while the important commercial crops are cotton, groundnut, linseed and tobacco. The following detailed notes on some of the important crops may prove of use in getting a correct appreciation of the background against which the economic activity of the people of this Province is being carried on.

29. *Jowari* (8,073,000 acres).—This Province is the most important producer of *jowari* in the whole of the country, the other important Provinces being Madras (4·6 million acres), the Central Provinces and Berar (4·2 million acres), and the United Provinces (2·2 million acres).

Bombay's share in the total acreage under *jowari* in British India comes to 39 per cent. As a food crop, it is better than rice as the grain contains more proteins while it has also more starch in it. It is important as a fodder crop being capable, under a great variety of conditions, of producing a very large quantity of palatable fodder in the minimum of time and under fairly dry conditions. It is a dry crop and is found more as one moves towards the east of the Province, where it is an indispensable food. There is, therefore, no cultivation of *jowari* in the Konkan, while in the Deccan and in the Karnatak the area under *jowari* is 4·8 million and 2·6 million acres, respectively. Gujarat follows at a long distance with only 0·6 million acres under this crop. The important *jowari* districts in the Province are Bijapur (1·5 million acres), Sholapur (1·4 million acres), Poona (1·0 million acres) and Ahmednagar (0·9 million acres). The average yield of *jowari* per acre is placed at 670 lbs. for the dry or *jirayat* crop. The average yield of fodder per acre in addition to grain is placed at 1,700 lbs., the proportion of grain to fodder being about 1 to 2·5.

30. *Bajri* (4,030,000 acres).—Here again, Bombay claims the largest area under *bajri* in British India, its share being 32 per cent. The other important Provinces for *bajri* are the Punjab (2·6 million acres), Madras (2·6 million acres), the United Provinces (2·0 million acres). Like *jowari*, *bajri* is the food of large classes of people, but it is grown only where it gives better results than *jowari*, and this is usually when the soil is light, while *jowari* is preferred on the heavier soils. *Bajri* is superior to *jowari* from the point of view of its dietetic properties, but its straw compares very unfavourably with that of *jowari* from the point of view of its fodder value. Like *jowari*, *bajri* is not grown in the Konkan, but it is a second major crop of the Deccan. The important *bajri* districts are Nasik (0·9 million acres), Ahmednagar (0·8 million acres), Poona (0·5 million acres), Satara (0·4 million acres) and Bijapur (0·3 million acres). The average outturn of *bajri* is placed at 400 lbs. of grain per acre. The proportion of grain to straw is generally the same as *jowari* being about 1 to 2·5.

31. *Rice* (2,037,000 acres).—Though rice is the most important staple crop of India, the same cannot be said of this Province. In fact, among the British Indian Provinces, Bombay takes almost the last place from the point of view of its acreage under rice. Its share has been less than 3 per cent. The important rice growing Provinces are Bengal (22·2 million acres), Madras (10·1 million acres) and Bihar (9·5 million acres). As a food crop rice is not equal either to *jowari* or *bajri*, and as a fodder crop also it is inferior. A good and constant supply of water is essential for successful rice cultivation and we find consequently that hardly any rice is grown in the eastern parts of the Province, while it is a staple crop of the Konkan. The important rice districts of the Province are Thana (336,000 acres), Ratnagiri (301,000 acres), Kolaba (277,000 acres), and Dharwar (138,000 acres). The districts of Surat, Kaira and Broach and Panch Mahals also grow considerable quantities of rice. The average outturn per acre comes to about 1,200 lbs. of grain and 1,600 lbs. of straw which means a proportion of grain to straw of about 1 to 1·25.

32. *Wheat* (1,831,000 acres).—Bombay is the fourth important wheat growing Province in India, its share being nearly 7 per cent. of the area under wheat in British India. The first three wheat-growing Provinces are the Punjab (9·9 million acres), the United Provinces (7·8 million acres), and the Central Provinces and Berar (3·4 million acres). Wheat is, of course, superior to the other cereals from the point of view of its nutritive properties. But wheat straw is a poor fodder and the straw of spelt wheat is practically inedible. Wheat can be grown as a dry-crop on deep black soil, while lighter soil is preferable when the crop is irrigated. Generally speaking, wheat is a rotation crop and is rotated with cotton and *jowari* in the cotton districts and with linseed and gram along the Tapti. As is to be expected, no wheat is grown in the Konkan. The important wheat growing districts of the Province are Dharwar (284,000 acres), Nasik (281,000 acres), Ahmedabad (273,000 acres), Bijapur (226,000 acres), Ahmednagar (184,000 acres), Belgaum (140,000 acres) and West Khandesh (125,000 acres). The average outturn of wheat is placed at 575 lbs. of grain, the proportion of grain to straw being generally between 1 to 1·6.

33. *Gram* (674,000 acres).—As compared with the United Provinces and the Punjab, Bombay is not such an important Province from the point of view of the area under gram. It ranks only fifth, the four important Provinces being the United Provinces (5·7 million acres) the Punjab (3·7 million acres) Bihar (1·3 million acres) and the Central Provinces and Berar (1·2 million acres). Except in the Southern Konkan, it is grown all over the province as a *rabi* crop. The grain plant is used when green as a vegetable—both foliage and grain. The ripe grain is used for *dal* or is eaten parched. It is also the commonest food of horses and sheep. A kind of acid *amb* is collected from the leaves by spreading a wet cloth over the foliage and bringing out the absorbed substance. The important gram-growing districts are Ahmednagar (100,000 acres), Satara (79,000 acres), Poona (77,000 acres) and Nasik (72,000 acres). The average outturn of gram per acre is estimated to be 500 to 600 lbs.

34. *Ragi* (646,000 acres).—Bombay comes only next to Madras in the acreage it has under ragi. Its share in the British Indian total is 18 per cent. Ragi is entirely a rain crop and is generally grown in districts of heavy rainfall, on land which is too light for rice or too steep to be converted into rice fields. Ragi straw has poor nutritive value as fodder. The important ragi districts are Ratnagiri (193,000 acres) and Nasik (108,000 acres). The yield is very variable, depending mainly on regular and moderate rainfall at the time of transplanting.

35. *Maize* (164,000 acres).—The area under maize crop in this Province is small in comparison to other maize-growing Provinces like the United Provinces (1·9 million acres), Bihar (1·5 million acres), and the Punjab (1·1 million acres). As a producer of fodder, maize is only second to *jowari*. It is usually sown alone and gives on an average a yield of 1,200 to 1,500 lbs of grain per acre. In Bombay, it is extensively grown in the Broach and Panch Mahals district (108,000 acres) which alone

accounts for about two-thirds of the total area under this crop. It is grown on a much smaller scale in districts like Belgaum (13,000 acres), West Khandesh (10,000 acres) and Satara (9,500 acres).

36. *Pulses*.—The important pulses of the Province besides gram, are *tur* (395,000 acres), *Kulthi* or horse gram (638,000 acres), *math* or kidney bean (225,000 acres), *mug* or green gram (174,000 acres) and *Udid* or black gram (291,000 acres).

Tur in this Province is rarely grown independently. It is always grown subordinate to or mixed with other crops. It is a favourite plant with cultivators as it stands in the forefront among pulses as a restorative rotation crop. It is grown throughout the Presidency excepting in the Konkan.

Kulthi is essentially a light soil crop and is grown extensively in the districts of Khandesh, Nasik, Ahmednagar and Satara. It is also found in the Kanarese districts of Belgaum, Dharwar and Bijapur. The *bhusa* or chaff obtained from *kulthi* is of a very fine quality and if the fodder is cut when the plant is in flower, it is excellent for the farm animals.

Math is essentially a rain crop and is seldom sown alone. It is grown to a considerable extent in all districts except in the Konkan.

The *mug* or green gram is usually sown with *jowari* and is grown extensively in the Dharwar and Bijapur districts. The other important centres of cultivation are Ahmedabad, Ahmednagar, Khandesh, Satara and Belgaum. It is also grown as a plant subordinate to *jowari* and is an important pulse in the black soil of Khandesh. It is also found in Nasik and Thana.

37. *Fruits and Vegetables* (203,000 acres).—Compared with some other Provinces, Bombay has not got a large area under this important and essential element in vegetarian diet. Thus, Bengal, Madras, the United Provinces, Assam, Bihar and the Punjab have all much larger areas under fruits and vegetables, viz., 787,000 acres, 739,000 acres, 555,000 acres, 462,000 acres, 418,000 acres, and 254,000 acres respectively; and Bombay's share in the all India total is only 5·2 per cent.

There are only nine districts in the whole Province which have more than 10,000 acres under fruits and vegetables, viz., Poona (35,669 acres), Nasik (23,817 acres), Satara (14,626 acres), Ahmednagar (13,766 acres), East Khandesh (13,647 acres), Ratnagiri (12,167 acres), Dharwar (11,012 acres), Belgaum (10,426 acres) and Surat (10,142 acres.) A larger portion of this combined area is under vegetables, the area under fruits being only 62,019 acres. The following details of the acreage

under different kinds of fruits for the latest year 1938-39, were supplied to the Committee by the Department of Agriculture :—

TABLE 5.
Area (in acres) under Fruit Trees, 1938-39.

Fruit.	Gujarat.	Deccan.	Karnatak.	Konkan.	Total.	Principal Centres.
Banana ..	771	9,235	2,517	7,193	19,716	East Khandesh, Kanara, Thana, Satara and Poona.
Mango ..	6,776	2,151	2,734	12,630	24,291	Ratnagiri, Surat, Bombay Suburban district, Dharwar and Kanara.
Lime ..	729	1,810	238	9	2,786	Ahmednagar, Poona, Ahmedabad and Kaira.
Mosambi (Sweet-lime).	77	10,907	10	2	10,996	Ahmednagar, Poona and East Khandesh.
Orange ..	..	2,582	16	1	2,599	Poona and Ahmednagar.
Pomegranate ..	327	1,108	83	..	1,518	Poona, Satara and Ahmedabad.
Guava ..	1,214	4,982	1,163	28	7,387	East Khandesh, Nasik and Poona.
Custard Apple ..	..	55	68	..	123	Bijapur and Khandesh.
Pineapple ..	16	..	..	41	57	Kanara and Surat.
Fig ..	..	529	1	..	530	Poona.
Jack Fruit ..	..	..	4	439	443	Kanara and Ratnagiri.
Papaya ..	606	625	4	2	1,237	Ahmedabad, Poona, Ahmednagar and Kaira.
Cashew nut ..	..	..	..	3,353	3,353	Ratnagiri and Kanara.
Grapes ..	1	879	5	..	885	Nasik.
Others ..	2,328	875	146	380	3,729	
Total ..	12,845	35,738	6,989	24,078	79,650	

It will be noticed that the most important fruit crops of the Province are mango, banana, sweet lime and guava. The important fruit districts of the Province, from the point of view of the area under cultivation are, Ratnagiri, Poona, East Khandesh, Kanara and Ahmednagar. The districts of Broach and Panch Mahals and Kolaba have a negligible area under fruit cultivation.

Besides these fruits, there are "forest fruits" such as cashew nut, *jamboul*, *karavanda*, and cocam, of which with the exception of cashew nut perhaps, no sufficient use has been made so far.

As for vegetables we furnish below classified statistics for 1938-39, supplied by the Department of Agriculture :—

TABLE 6.

Area (in acres) under Orchard and Garden Products, 1938-39.

	Gujarat.	Deccan.	Karnatak.	Konkan.	Total	Principal Centres.
<i>A. Vegetables.</i>						
Potatoes ..	1,005	21,583	811	44	23,443	Poona, Satara, Ahmednagar, Kaira and Dharwar.
Sweet Potatoes ..	636	7,748	4,808	1,091	14,283	Belgaum, Satara, Poona and Sholapur.
Onions ..	1,268	17,096	3,124	796	22,284	Nasik, Poona, Satara, Dharwar and Belgaum.
Yam ..	161	94	..	28	283	Poona, Broach, Panch Mahals and Surat.
Elephant foot ..	368	11	..	3	382	Surat.
Carrot ..	32	4,030	1,293	..	5,355	Satara and Poona.
Radish ..	174	1,862	204	265	2,505	Nasik and Poona.
Others ..	106	1,382	1,530	452	3,470	
Total ..	3,750	53,806	11,770	2,679	72,005	
<i>B. Green Vegetables.</i>						
Tomato ..	409	1,106	30	30	1,575	Nasik, Surat and Poona.
Musk Melon ..	265	1,613	50	62	1,990	East and West Khandesh, Ahmedabad and Ahmednagar.
Water Melon ..	252	1,199	144	1,143	2,738	Kolaba, West Khandesh, Thana and Ratnagiri.
Edible Hibiscus ..	1,528	4,051	884	247	6,710	East Khandesh, Poona, West Khandesh, Ahmedabad and Surat.
Fenugreek ..	144	7,843	167	21	8,175	Nasik, Ahmednagar and Poona.
Others ..	9,959	12,821	8,546	3,644	34,970	
Total ..	12,557	28,633	9,821	5,147	56,158	
Grand Total ..	16,307	82,439	21,591	7,826	128,163	

It will be seen that the important vegetables in the Province are potatoes, onions, sweet potatoes, fenugreek, edible hibiscus, carrot, etc. The important vegetable districts of the Province are Poona, Nasik, Belgaum, Khandesh and Dharwar. Kanara, Ratnagiri and the Bombay Suburban district are least important, from the point of view of the acreage under vegetables.

38. *Sugarcane* (72,000 acres).—Bombay Presidency, as compared to the rest of British India has an almost negligible area under sugarcane, its share being less than 2 per cent. The important sugar provinces are the United Provinces (2·1 million acres) and Bihar (0·5 million acres).

Sugarcane is always an irrigated crop of Bombay. The most important sugarcane districts of the Province are Ahmednagar (15,767 acres), Belgaum (13,006 acres), and Poona (10,952 acres). The outturn of sugar per acre in Bombay is higher than in some other Provinces, the quality of the sugarcane is also reported to be better.

39. *Cotton* (3,862,000 acres).—With the separation of Sind, Bombay has now lost its pride of place among the cotton-growing Provinces of India, as far as the acreage under cotton is concerned. Nevertheless, Bombay with its 3·9 million acres under cotton, comes as a very close second to the Central Provinces which has 4·0 million acres under the same crop. The share of Bombay in the British Indian total is 25 per cent. The other main cotton growing Provinces are Punjab (3·1 million acres) and Madras (2·6 million acres). Cotton is unquestionably the most important, from the financial point of view, of all the crops of the Bombay Province. The important cotton growing districts of the Province are, East Khandesh (703,000 acres), Dharwar (574,000 acres), West Khandesh (536,000 acres), Bijapur (473,000 acres), Ahmedabad (388,000 acres), Broach and Panch Mahals (350,000 acres), Ahmednagar (202,000 acres) and Surat (198,000 acres). It will be noticed that the two Khandesh districts between them account for 1·2 million acres. Deccan as a whole has 1·6 million acres under cotton, as compared to 1·2 million acres for Karnatak and 1 million acres for Gujarat. It will be seen that cotton is an important crop from the point of view of all the three linguistic divisions of the Province. It must be added that it is not at all grown in the Konkan.

40. Of the cotton-growing tracts of the Province, the South Gujarat tract or the districts of Surat and Broach grow the best cotton, followed by the Karnatak tract, North Gujarat tract and the Deccan tract in that order. It may also be noted that cotton as a *jirayat* or dry crop is rotated with *jowari* in heavy soils and with *bajri* in light soils. The outturn of the crop per acre varies according to the variety of the soil, rainfall and care bestowed on the crop, but on an average it may be stated that this Presidency produces 300 lbs. of seed cotton per acre, or 100 lbs. of lint and 200 lbs. of seed. About 60 per cent. of the area under cotton is grown with short staple cotton ($\frac{1}{2}$ " to $\frac{5}{8}$ "), the rest being long staple varieties $\frac{5}{8}$ " to 1". The following table gives the commercial type varieties, the

lengths of fibre (staple), and the ginning percentages of the varieties of cotton grown in the Province:—

TABLE 7.

Variety.	Tract where chiefly grown.	Sub-class.	Staple in inches.	Ginning per cent.
Dholleras ..	North Gujarat	Wagad ..	6-8 to 7-8 ..	33
		Lalio ..	5-8 to 6-8 ..	33
	Kathiawar ..	Goghari ..	4-8 to 5-8 ..	40
		Mathio ..	4-8 to 5-8 ..	40
Broach ..	South Gujarat	Navsari ..	7-8 to 1 ..	31
		Surat ..	7-8 ..	32
		Broach ..	5-8 to 6-8 ..	32
		Kanvi ..	4-8 to 6-8 ..	35
Kumta-Dharwar ..	Karnatak ..	Kumta-Dharwar	7-8	26
		American.	6-8 to 7-8 ..	30
Oomras ..	Deccan and parts of Bijapur.	Khandesh ..	4-8 to 5-8 ..	38

(Source : Statistical Atlas, Bombay Presidency, 1925).

The importance of this crop to the industrial life of the Province needs hardly any emphasis.

41. *Groundnuts* (1,344,000 acres).—The groundnut has recently come to occupy a very important place in the export trade of India, and Bombay is only next to Madras from the point of view of the area under this crop, Bombay's share in the British Indian total being 22 per cent. This crop has been steadily growing in importance in this Province. It is both a dry crop as well as an irrigated crop, and it grows well on light and medium varieties. The principal foreign varieties grown in the Province are "Big Japanese", "Pondicherry", "Spanish pea-nut", and "Small Japanese". Groundnut oil is an important raw material for such industries as soap making and vegetable ghee. It is also used on a large scale in cookery. It is valuable for soap and margarine manufacture while groundnut cake is a highly concentrated variety of food and is excellent both as cattle feed and manure. The cake when finely ground and sieved, constitutes a preparation called nutramine, from which large number of articles of food can be manufactured, the most successful being

the nutramine biscuits. The important groundnut districts are East Khandesh (326,000 acres), Satara (219,000 acres), Sholapur (109,000 acres) and West Khandesh (104,000 acres), Belgaum, Broach and Panch Mahals, and Bijapur have 96,000, 90,000 and 89,000 acres respectively under this crop. The average outturn of groundnut varies from 800 to 1,600 lbs. of unhusked seeds per acre, the kernel constituting 65 to 75 per cent. of the same. The percentage of oil in the kernel comes to 42 to 50 per cent. In addition, 800 lbs. of very good fodder is obtained from each acre under groundnuts.

42. *Condiments and Spices* (201,000 acres).—Bombay is only next to Madras in point of its area under condiments and spices. Its share of the British Indian total is about 13 per cent. The important condiments and spices grown in the Province are chillies, tamarind, garlic, turmeric, ginger, black pepper, cardamoms, coriander, fennel (*variali*), *cumin (jiru)* and *ajwan* seed (*ajmo*), the last named of which is used in England and Germany for the manufacture of Thymol.

The most important of these is chillies which cover 150,474 acres. Nearly half of this area is to be found in the Dharwar district. The other important districts are Belgaum, Khandesh, Satara, Poona, Sholapur, Nasik and Ahmednagar. Garlic (9,900 acres) is an important crop in the Sinnar and Niphad *talukas* of the Nasik district, while for turmeric (9,700 acres) Satara is the most important centre of cultivation, claiming nearly 80 per cent. of the total acreage in the Province. For ginger the chief centres of cultivation are Ahmedabad, Kaira, Surat, Satara and Thana, while the cultivation of black pepper (2,900 acres) is confined to the districts of Kanara, half the total area being claimed by the *taluka* of Siddapur and over one-third by Sirsi alone. Cardamom (558 acres) again is confined to the Kanara district, where it is grown mainly in the Siddapur, Sirsi and Yellapur *talukas*. Funnel (2,941 acres) is grown in some districts of Gujarat and Konkan. *Cumin* (417 acres) is almost entirely confined to Kaira, while *ajwan* (147 acres) seed is chiefly cultivated in the Khandesh district. No separate statistics could be had of the area under tamarind. The condiments and spices taken together constitute a valuable crop.

43. *Tobacco* (170,000 acres).—Bombay is one of the important tobacco growing Provinces in the country and claims 16 per cent. of the total area under tobacco in British India. The other important tobacco growing Provinces are Bengal (307,000 acres) and Madras (253,000 acres). The districts of Kaira and Belgaum claim more than 80 per cent. of the total Provincial area, Kaira having 79,000 acres, and Belgaum 58,000 acres. The only other district is Satara with 15,000 acres.

The cultivation of tobacco is mainly on black soil near villages and in riverside fields in the Belgaum district, while in the Kaira district, the cultivation is helped by particular wells which contain water specially valuable for irrigating tobacco on account of its high manurial value. Thus, in Gujarat, tobacco is largely an irrigated crop, while in the Deccan

it is a dry crop. The tobacco grown is not of a high grade quality and is reported to be unsuitable for the manufacture of cigars and cigarettes. Attempts are, however, being made by the Department of Agriculture to introduce the Virginian variety of tobacco in the Gujarat tract. Some of the cigarette manufacturing concerns have also interested themselves in the cultivation of higher grade tobacco in the Kolhapur tracts. Similarly the Baroda Government are encouraging the production of cigarette tobacco in their territories. The total area under Virginian tobacco in the Bombay Province including Baroda State is estimated to be about 150 acres in 1938-39 and the quantity of dry leaf produced is estimated at about 65,000 to 75,000 lbs.

44. *Sesamum* (166,000 acres).—Bombay is completely overshadowed by Madras as far as the area under sesamum is concerned, the latter Province having 795,000 acres under this crop. Bombay's share in the British Indian total comes only to 7 per cent. Within the Province, sesamum is found in every district excepting Kanara, while the important districts are Ahmedabad (31,324 acres), Broach and Panch Mahals (27,758 acres), Ahmednagar (19,015 acres), Ratnagiri (13,597 acres) and West Khandesh (13,336 acres). Sesamum forms an important oilseed from the dietetic point of view as its oil is largely used for cooking. The cakes make very good food for cattle, but the stalks are not eaten by them.

45. *Linseed* (112,000 acres).—From the point of view of British India, Bombay comes fifth in the area it has got under linseed, the others being the Central Provinces and Berar (1,243,000 acres), Bihar (587,000 acres), the United Provinces (316,000 acres) and Bengal (137,000 acres). Linseed is a very important crop as the oil is used not only in cookery, but also in paints and varnishes, while the oil-cake is one of the best cattle feeds and also constitutes a very rich manure. The cultivation of linseed is practically confined to the Deccan and the Karnatak, the most important districts being Bijapur (36,829 acres), Ahmednagar (25,019 acres), Nasik (21,857 acres) and Dharwar (10,491 acres).

46. *Castor seed* (42,000 acres).—From the point of view of the area under castor seed, Bombay is next to Madras, which has 247,000 acres under this crop. Bombay's share in the total of British India comes to 11 per cent. Castor oil is largely used for lighting purposes and it is also valuable as a lubricating oil. In addition, the oil is in demand for medicinal uses. The cake is not edible but constitutes a highly concentrated manure and is, therefore, useful in garden and sugarcane cultivation. Stalks and husk of the castor nuts are only used as fuel. The average outturn of the seed per acre may be taken at about 500 lbs.

47. *Cocoanut* (28,000 acres).—Considering the long coastline that Bombay has got and the considerable area which its southern neighbour has under cocoanut on its west coast, Bombay has a very small acreage under cocoanut. The share of Bombay in the total for British India comes only to 4.1 per cent. Madras with its 584,613 acres claims more than 89 per cent.

Cocoanut is an extremely valuable crop from the point of view of fibre. Fresh cocoanuts are used as food and copra is used for making oil. As its cultivation is practically limited to the coast and the banks of salt water creeks, we find that in Bombay the coastal districts of the Konkan account practically for the entire cocoanut area. The important districts are Ratnagiri (13,242 acres) and Kanara (11,646 acres). The average annual yield per tree is 75 to 100 nuts and is gathered in three or four pickings.

48. *Rape and mustard* (20,000 acres).—In this Presidency, mustard is utilised more as a condiment than as an oilseed, and the area under these two oilseeds is naturally very small as compared to Bengal (771,000 acres), Punjab (740,000 acres) and Bihar (518,000 acres) where its oil is largely used for edible purposes. In Bombay itself, in fact, the cultivation of these two seeds is practically confined to the districts of Ahmedabad (17,033 acres) while the only other important district is Nasik which has 1,253 acres under this crop. Between these two districts, they account for nearly 90 per cent of the Provincial total.

49. *Fibres other than cotton* (78,000 acres).—The important fibres in the Province other than cotton are sann hemp (Bombay hemp), *ambadi* (Deccan hemp) and agave fibres. *Ambadi* occupies a larger area and is a well known crop in practically all districts, though it is particularly important in the Deccan and the Karnatak. The fibre is largely used by the cultivators for their home requirements such as well and cart ropes, plough shaft ropes, halters for cattle, etc.

The sann hemp is grown, though sparingly, in all the districts. But the most important districts of cultivation are Ahmedabad, Panch Mahals, Surat, Khandesh, Nasik, Satara, Belgaum, Thana and Ratnagiri. The fibre obtained from the plant is exported from the Ratnagiri district to Europe and is known in the trade as "Dewguddi" hemp which is considered to be finest sann hemp in India. The other grade of sann hemp from Panch Mahals, Belgaum and Khandesh is known in the trade as "Godhra" or "Salsi" sann hemp. Fishermen in coastal villages make fishing nets from it and cultivators make it into ropes for farm use. It is also grown for green manure. It may be added that the area under these two fibre crops has been declining recently, the figure for 1937-38 being only 78,500 acres as compared with 131,000 acres in 1914-15.

Agave is grown as a hedge plant in the Deccan and a fibre is extracted from it by water-retting which affords occupation to a large number of members of the depressed classes. Fibre and rope is made on a commercial scale in Nasik, Poona, Ahmednagar, Satara and Sholapur districts.

50. *Fishing*.—The extent of fisheries of the Bombay Province bears no relation to its extensive coast line. The great length of the littoral would tend to the belief that the fisheries of the Province occupy an important place in its economic structure, but this is not so, for the

annual catch is quite trivial, when regard is had to the teeming fish life characteristic of tropical seas. The marine fisheries are undeveloped and do not contribute as they ought to, to the general welfare of the country. This view is confirmed by the results of an enquiry (1931) conducted by Mr. H. T. Sorley, I.C.S., who after a survey computed that the total quantity of marine fish, including shell fish annually landed in the Province, exclusive of Sind, was about 50,000 tons, worth approximately Rs. 73 lakhs. These fishing activities provided a means of livelihood to about 145,000 people.

Fishing in the Bombay Province is almost entirely confined to an area in the immediate proximity to the coastline. This is due to the frail, deckless fishing craft and the small sized fishing gear used. The coastline is mostly frequented by the small varieties of fishes and those in immature stages of development. These mixed small types in which *bumla* (Bombay Duck), *shingali* (Cat fish), *wagti*, *mandli*, *dhoma*, *wam* and prawns predominate provide the bulk of the catch and furnish the mainstay of the fishing industry.

Pomfrets and mackerel are, however, an exception. They do not fall under the category of mixed small varieties. They are the only fishes of their size and kind that approach the shore in shoals so that they are captured with comparative ease by the fishermen. Had not the two species which are in great demand struck the shore so near and so regularly, the fishing industry of this Province would be in an increasingly languishing condition. Pomfrets, mackerel and Bombay duck provide the greatest and most remunerative turnover to the fishermen of this Province.

Shell fisheries, except for prawns, have been entirely neglected in this Province. Shell beds, where they occur naturally, are depleted on account of extensive and indiscriminate exploitation. The value of the shell fisheries is quite negligible. Fresh water fisheries, as a source of supply to the market, do not exist at all in the Province.

51. *Livestock*.—Information regarding the number and classification of livestock in the Bombay Province is obtained by means of a quinquennial census. The latest figures available relate to 1935 and are as under :—

TABLE 8.

Bulls and bullocks	..	..	3,324,280
Cows	..	..	2,028,729
Calves (young stock)	..	..	2,094,916
Male buffaloes	..	..	229,434
Cow buffaloes	..	..	1,270,311
Buffalo calves (young stock)	..	..	1,013,824
Sheep	..	..	1,681,205
Goats	..	..	2,108,918
Horses and ponies	..	..	116,590
Mules, donkeys, camels, etc.	..	..	73,561
			<hr/>
			13,941,768

Per head of bulls and bullocks in the Province there are 8·6 acres of net cultivated land and per head of cow buffaloes and cows in the Province there are 5·4 persons. These figures compare well with 6·8 and 5·8 for the Punjab, but not so well with the Madras Presidency where the corresponding figures are 4·4 and 5·2 respectively.

From the point of view of the number of cows, the important districts in the Province are, Ahmednagar (206,681), Nasik (189,591), Poona (165,441), Ratnagiri (152,054), Satara (137,655), Thana (127,416), East Khandesh (111,481), Sholapur (106,369), Dharwar (106,321) and Ahmedabad (102,835). The number of cow buffaloes in the Province is smaller than that of cows. From the point of view of the distribution of this number, the important districts are Kaira (128,868), Belgaum (119,749), Satara (115,861), and Ahmedabad (113,331), Dharwar has nearly 100,000 cow buffaloes, the exact number being 98,597. The districts of Ahmednagar, Kanara, Kolaba, Nasik and Thana have less than 40,000 cow buffaloes each, while the districts of Bijapur, Broach and Panch Mahals and East Khandesh have more than 70,000 each.

It must be pointed out, however, that the quality of the cattle shows considerable variation, being poorest in Poona, Ahmednagar, East and West Khandesh, Thana, Kolaba, Ratnagiri, and Kanara, while the quality shows considerable improvement in Gujarat, Dharwar and parts of Sholapur and of Belgaum. Our cattle mature very late and are irregularly breeders producing young ones once in two years as against the better known breed which calves once a year. It is estimated that 50 per cent. are maintained purely for their manure, while 50 per cent. of their males are so small that they are not fit for draught. The main burden of milk supplies, therefore, falls on the buffalo. It is estimated that the average annual production of milk in the Province is 1,250 million lbs. of which buffalo milk forms 80 per cent. As for hides and skins, it is estimated that the average annual output of the Province is about 1,441,001 buffalo hides, 1,124,302 cow and bullock hides and 2,000,000 goat and sheep skins. The wool furnished by the sheep of the Province is of a poor quality and could easily stand improvement.

52. Altogether, therefore, Nature cannot be described as having been niggardly with regard to this Province. It is true that the Province is deficient in mineral products, but it has a long coastline, with good facilities for fishing as well as salt making, a large variety of useful forest products, a considerable number of different types of livestock and the possession of such important raw materials as cotton, groundnut, linseed, cocoanuts, *ambadi* and sann fibres, and tobacco. Food grains of various kinds as also fruits and vegetables are available in good measure. The Province, therefore, has resources of food products, forest products, dairy products, leather products, fibre products and oilseeds, all of which should form a sound basis for a good industrial structure.

CHAPTER IV.
THE HUMAN ELEMENT.

53. *The importance of studying the human element.*—In the previous chapter, we gave a brief account of the economic background against which industrial activity is carried on in the Province. But industrial as well as other production does not depend merely on the possession of economic resources. It is the human element which, acting on the environment and the resources provided therein, produces wealth and determines the extent and pace of industrial development. From this point of view, it is necessary to know the size and sex classification of the population of the Province, their dispersion in urban and rural areas, their health condition, the extent of their literacy and technical training, the distribution of their economic activity in different occupations and their possession of capital resources. All these factors taken together account for their general economic condition, which in turn merits a brief description in this chapter. After we have done this, we will be in a position to proceed to a detailed analysis of our population with a view to finding out what difficulties come in the way of the industrial development of the Province and suggesting what measures should be taken to remove these difficulties. We shall begin our description of the human element, therefore, with an account of the size and distribution of the population of the Bombay Province.

54. *Distribution of population.*—The Census returns of 1931 place the total population of the Province at nearly 18 millions. Of these 9·4 millions were males and 8·6 millions females. The density of population per square mile comes to 233. It may be pointed out that by size of population Bombay forms the sixth Province in India, the first five being, Bengal (50·1 millions), United Provinces (48·4 millions), Madras (46·7 millions), Bihar (25·7 millions) and Punjab (23·6 millions); but it is of interest to note that the density of population in this Province is smaller than in any of the other Provinces mentioned above.

This population of 18 millions is distributed as under in the following administrative Divisions of the Province :—

TABLE 9.

	(in millions).		
	Males.	Females.	Total.
Bombay City	0·8	0·4	1·2
Northern Division	2·1	1·9	4·0
Central Division	3·8	3·6	7·4
Southern Division	2·7	2·7	5·4
Total	9·4	8·6	18·0

Taking the Province as a whole, the population of 18 million lives in 184 towns and 21,484 villages. The urban population comes to 4·2 millions, the remaining 13·8 millions being classed as rural residents. The proportion of urban to total population is 23·3 as against the British Indian average of 10·9 per cent. The corresponding percentages of urban to total population for the other major Provinces of the country are: Bengal (7·3), Madras (13·3), United Provinces (11·2), Bihar (4·4), Punjab (13·1) and the Central Provinces and Berar (10·8). Bombay's higher percentage may be considered an indication of its more developed economy. It must be pointed out, however, that partially at any rate, it is the inclusion of the City of Bombay which accounts for the higher figure. Further details regarding the distribution of the total population between cities, towns and villages is given below:—

TABLE 10.

—	No. of units.	Population. (in 000s)
Under 500	12,284	2,988
500—1,000	5,459	3,848
1,000—2,000	2,696	3,670
2,000—5,000	979	2,846
5,000—10,000	171	1,112
10,000—20,000	47	662
20,000—50,000	26	859
50,000—100,000	2	189
100,000—and over	4	1,826
Total ..	21,668	18,000

(Source: Census of India, 1931—Vol. VIII—Pt. II—Imperial Table III).

It will be seen that nearly 3 millions or one-sixth of the total population are resident in very small villages.

55. It is found in the Bombay Province that the mean ratio of births and deaths per thousand during the quinquennium ending 1937 was 40·11 and 27·25, giving an annual survival rate of 12·86 per thousand. By way of comparison, the corresponding figures for the other major Provinces of British India are given below :—

TABLE 11.

Provinces.	Birth rate.	Death rate.	Survival rate.
United Provinces	37·13	23·01	14·12
Punjab	44·40	25·90	18·50
Madras	36·93	23·75	13·18
Central Provinces and Berar .. .	44·33	31·98	12·35
Bihar	34·40	22·10	12·30
Bombay	40·11	27·25	12·86

It will be seen that conditions in Bombay do not compare very favourably with those in the rest of British India. The following statement gives a classified account of the causes of deaths in the Province during the same quinquennium :—

TABLE 12.

	Ratio per thousand.
Fevers	9·18
Respiratory diseases	5·51
Dysentery and Diarrhoea	1·39
Pleague	0·62
Cholera	0·48
Injuries	0·40
Small-pox	0·34
Other causes	9·33
Total death rate	27·25

Fevers account for the largest toll. In fact, it is estimated by Lieutenant-Colonel Sinton that taking the direct and indirect causes into account, malaria accounts for a mortality of as much as 8 per thousand. To make things worse, it is essentially a rural disease and about 40 to 50 times as many "fever deaths" occur in rural areas as in urban areas. It is estimated that the average annual economic loss to this Province as a result of the ravages of this disease is not less than Rs. 50 lakhs.

56. *Infant mortality.*—As regards infant mortality, the percentage for the Province as a whole is 16·1 for 1937. This figure can be further classified into 21·7 per cent. for urban areas and 14·9 per cent. for rural areas. Among the urban areas the towns of Pandharpur (42·7 per cent.), Viramgam (36·1 per cent.), Poona City (34·4 per cent.) and Dakor (31·7 per cent.) recorded the highest infant death-rate while in the rural areas Kanara (19·1 per cent.) had the unenviable distinction of having the largest rate of infant mortality. Taking the districts as a whole, the highest infant death rate was recorded in the Ahmedabad district (22·2 per cent.) while the Ratnagiri district (9·1 per cent.) had the lowest rate of infant mortality.

57. *Medical Facilities.*—The statistics given above emphasise the low health condition of the people of the Province. It also indicates the absence of adequate arrangements for sanitation and drainage in the Province. The provision of medical facilities is also inadequate, as can be seen from the statement given below :—

TABLE 13.

Districts.	Hospitals.	Dispensaries.	Other medical institutions.	Number of doctors in the district including head quarters.	Average number of persons to each Doctor in Head Quarter towns.	Average number of persons to each doctor in the whole district.
1. Ahmedabad	9	24	5	270	1,615	18,697
2. Katra	6	12	..	66	2,178	11,647
3. Broach	2	15	2	52	2,173	9,375
4. Panch Mahala	1	10	..	28	2,736	24,966
5. Surat	10	20	2	145	1,796	8,897
6. Thana and Bombay Suburban.	2	18	1	191	808	6,063
7. Ahmednagar	1	20	..	57	1,400	33,797
8. East Khandesh	3	17	..	77	1,714	20,557
9. West Khandesh	2	10	1	43	1,724	36,607
10. Nasik	5	23	8	85	1,235	20,000
11. Poona	12	23	2	No information available.		
12. Satara	6	16	3	90	1,140	17,474
13. Sholapur	7	31	2	82	2,884	21,198
14. Belgaum	5	9	2	92	748	25,330
15. Bijapur	1	12	3	42	2,092	37,368
16. Dharwar	6	12	1	88	1,460	17,406
17. Kanara	1	13	..	36	1,768	14,417
18. Kolaba	1	15	5	45	1,293	15,556
19. Ratnagiri	1	9	1	61	1,443	26,228
Total	81	309	38	1,550	1,681	20,310

(Source : " Notes on Medical Provision in Districts and rural Areas " 1936).

According to the latest report on hospitals and dispensaries for 1937 there are 423 medical institutions in the Province including the City of Bombay. Of these 44 are maintained by the Provincial Government, and 42 are maintained by the railways. Special medical organisations for the police and Government staff specially engaged for work in the irrigation canals and other areas are nine in number. Of the remaining, 275 institutions are maintained by local and municipal funds while 14 private institutions are aided by Government. The rest are private institutions. Practically all the private doctors practising in rural areas are seen in the larger towns or villages where there is already a dispensary. This of course is a phenomenon common to all countries, but its effects are much more serious in India. The Government of Bombay are conscious of the necessity of furnishing more adequate medical relief for the rural areas as also of co-ordinating the medical and health departments; and a scheme of Government subsidised rural medical practitioners is at present being worked in certain areas. The field left uncovered, however, is still large and the remedying of this defect is of great importance in making possible efficient economic development of the Province.

58. *Literacy*.—Almost as important as health is literacy for promoting the efficiency of labour. According to the Census of 1931, 1,773,666 persons were returned as literate, thus constituting a proportion of 99 per thousand. Of these 244,016 were females, the proportion of literates to the total population thus coming to 164 per thousand for males and 28 per 1,000 for females. The corresponding figures for the other Provinces and some of the States in India are given below :—

TABLE 14.

Literates per thousand of population.

	Male.	Female.	Total.
<i>British Provinces</i>			
Bombay	164	28	99
Bengal	155	27	94
Madras	161	26	92
Assam	130	18	77
Orissa	131	9	64
Central Provinces and Berar	102	10	56
Punjab	85	14	53
United Provinces	80	9	47
Bihar	80	6	43

				Male.	Female.	Total.
<i>States</i>						
Cochin	..	..	..	384	184	281
Travancore	..	..	..	348	178	239
Baroda	..	..	..	282	67	178
Mysore	..	..	..	150	28	91

Although it is a matter for satisfaction that the highest proportion of literacy among British Provinces is to be found in this Province, the extent of literacy is not a matter for satisfaction, 901 people out of every thousand in the Province not being in a position to read or write.

Analysing the figures of literacy by administrative Divisions of the Province, we get the following interesting information :—

TABLE 15.

				Literates per thousand.		
				Males.	Females.	Total.
Bombay City	..	..	..	293	154	241
Northern Division	..	..	..	201	36	119
Central Division	..	..	..	141	19	81
Southern Division	..	..	..	134	16	74

It will be noticed that the Central and Southern Divisions of the Province are relatively backward in the matter of literacy of the population.

Apart from this difference in respect of literacy among the different Divisions, it must also be pointed out that literacy is much greater in the urban areas than in the rural areas of the Province. This is true not only of the adult population, but also of the children of school-going age, as can be seen from the fact that in the year 1937-38 there were 656,161 children attending primary, special, middle and high schools in urban areas as against which the corresponding number for the much larger rural areas was only 747,240.

59. *Educational facilities.*—The facilities available in the Province for education can be summarised in the following table:—

TABLE 16.

Institution.	Males.		Females.		Total.	
	Number of Institutions.	Pupils.	Number of Institutions.	Pupils.	Number of Institutions.	Pupils.
<i>Recognised.</i>						
Universities	1	105	..	..	1	105
Arts Colleges	17	10,349	..	..	17	10,349
Professional Colleges ..	12	3,597	..	..	12	3,597
High Schools	249	94,420	65	18,475	314	112,895
Middle Schools	328	21,490	39	4,011	362	25,501
Primary Schools	11,751	1,005,910	1,493	185,599	13,244	1,191,509
Special Schools	359	18,484	57	2,985	416	21,469
Total	12,712	1,154,855	1,654	211,070	14,366	1,365,925
<i>Unrecognised.</i>						
Total	617	34,237	57	3,739	674	37,976
	13,329	1,189,092	1,711	214,809	15,040	1,403,901

(Source: Report on Public Instruction in the Province of Bombay, 1937-38.)

Of these, there were located in the rural areas 10,646 primary schools, 177 middle schools and 23 high schools. As some of the larger villages had more than one primary school, the actual number of villages having schools was only 9,180; 12,304 villages were thus without primary schools.

From the point of view of promoting the efficiency of labour not only is literacy necessary, but it is also desirable that there should be ample facilities for industrial and commercial training. The extent of such facilities available in this Province is summarised in the following table :—

TABLE 17.
Professional Schools and Classes.
(1937-38).

	No. of Institutions.	Number of pupils.
Art Schools	3	685
Medical Schools	3	813
Engineering School	1	256
Technical and Industrial Schools	63	4,176
Commercial Schools	27	1,981
Agricultural Schools	3	84

For a province of the size of Bombay having a commercial and industrial structure of the magnitude which it has, it will be obvious that the facilities available for commercial and industrial training in the Province are not adequate. Moreover, even the limited number of these institutions is not well distributed in the Province as can be seen from the following table :—

TABLE 18.
Distribution of professional schools over different Divisions.

	Art Schools.	Medical Schools.	Engineering Schools.	Technical and Industrial Schools.	Commercial Schools.	Agricultural Schools.
Bombay City	1	1	..	22	16	..
Northern Division	2	1	..	17	6	..
Central Division .. .. .	..	1	1	22	4	1
Southern Division .. .. .	..	..	..	2	1	2
Total	3	3	1	63	27	3

It will be noticed that the Southern Division of the Province is the poorest equipped in the matter of schools imparting vocational training. Nor do the other Divisions possess adequate facilities in this regard. It is clear, therefore, that from the strictly economic point of view, the Province requires not only a considerable increase in the facilities it has for imparting literacy, but also a substantial increase in the facilities available for technical and commercial training.

Occupation.

60. According to the Census of 1931, there were within the Province 71·8 lakhs of persons who were workers and 108·2 lakhs who were dependants, the percentage of workers to total population thus coming to about 40. The number returned as workers consists partly of what the Census terms "principal workers" and partly of "working dependants". These working dependants are distinguished from the principal workers in so far as the former assist the latter and are not themselves in control of the remuneration accruing to their labour. In addition, 4 lakhs of principal workers were following a subsidiary occupation over and above their principal occupation. The principal workers, subsidiary workers, working dependants and non-working dependants in the Province are distributed in the different administrative Divisions as under :—

TABLE 19.

(Figures in thousands.)

	Principal workers.		Working dependants	Non-working dependants.
	Having subsidiary occupation.	Having no subsidiary occupation.		
Bombay City .. .. .	..	560	3	6,10
Northern Division	53	11,88	5,14	22,59
Central Division	155	24,05	2,78	45,58
Southern Division	186	15,39	2,05	34,87
Total	3,94	56,92	10,00	109,14

It will be noticed that the proportion of non-working dependants to total population is largest in the Southern Division and lowest in Bombay City. Excluding the City of Bombay, the average proportion

of non-working dependants to the total population comes to 60 for the whole of the Province, and the districts whose corresponding individual figures are higher than this Provincial average are :—

			per cent.
Kanara .. .. .	..	..	70·5
Belgaum .. .. .	..	..	68·9
Dharwar .. .. .	..	..	65·8
Satara .. .. .	..	..	65·8
Bijapur .. .. .	..	..	65·2
Poona .. .. .	..	..	63·4
West Khandesh ..	..	..	62·6
Ahmedabad .. ..	..	..	61·8

The higher proportion of non-working dependants to total population in the districts mentioned above may perhaps indicate a larger incidence of unemployment in those areas.

The seven million principal workers and working dependants are returned in the Census of 1931 as following the occupations mentioned below :—

TABLE 20.
(Figures in thousands.)

(1)	Principal workers (2)	Working dependants (3)	Total No. of workers (4)	Total No. of persons following this as subsidiary occupation in addition to their principal occupation (included in col. 2) (5)
1. Exploitation of animals and vegetation.	3,969	794	4,763	244
2. Exploitation of minerals ..	9	1	10	3
3. Industry	803	74	877	50
4. Transport	138	4	142	11
5. Trade	329	24	353	29
6. Public Force	50	1	51	3
7. Public Administration ..	114	4	118	14
8. Professions and liberal arts ..	104	5	109	7
9. Persons living on their income ..	20	1	21	2
10. Domestic service	116	24	140	8
11. Insufficiently described ..	358	44	402	17
12. Un-productive	76	24	100	6
Total	60,86	10,00	70,86	3,94

61. *Occupational Distribution.*—Leaving aside the subsidiary workers, if we compare the occupational statistics of this Province with those of the other Provinces, we get the following percentages under four broad occupations :—

TABLE 21.

	Bombay.	Madras.	Bengal.	U. P.	Punjab.	Bihar and Orissa.	C. P.
1. Production of raw materials ..	67·3	46·1	67·9	74·4	60·6	75·3	79·4
2. Transformation and employment of raw materials :—	19·4	14·5	17·7	17·8	27·4	13·2	14·4
(a) <i>Industry</i>	12·4	8·8	8·9	11·8	18·5	7·9	8·4
(b) <i>Transport</i>	2·0	1·4	2·0	0·9	2·3	0·9	1·3
(c) <i>Trade</i>	5·0	4·3	6·8	5·1	6·6	4·4	4·7
3. Public Administration and Liberal Arts.	3·9	2·2	2·9	2·0	4·2	1·7	2·1
4. Miscellaneous	9·4	37·2	11·5	5·8	7·8	9·8	4·1

The figures for Madras are not comparable with those of other Provinces due to the fact that certain mistakes in classification led to a large number of persons being returned under "domestic service" which should have been returned as under "agriculture". If we restrict, therefore, the comparison to the other Provinces mentioned in the table, we find that the differences between Bombay and the other Provinces are not so striking as one would have expected from the much larger proportion of urban population which we found in Bombay. Thus, for example, though Bombay has 12·4 per cent. of its total workers engaged in industry, the United Provinces comes fairly near, having 11·8 per cent. while the Punjab has a larger figure of 18·5 per cent.; while in the dominant occupation of agriculture, Bombay has 67·3 per cent. of its total workers, the corresponding figure for Bengal is 67·9 and that for the Punjab is considerably less, being only 60·6 per cent. As for trade, the proportion of Bombay's total workers engaged therein is 5, which similar percentage is also found in the United Provinces, Bihar and Orissa and the Central Provinces, while in the Punjab and Bengal it is larger being 6·6 and 6·8 respectively. Yet, the proportion of Bombay's total number of persons who stay in urban areas is much larger than in these other Provinces. This may perhaps partially be due to the fact that the Bombay Census figures under-estimate the total population engaged

in industries. Analysing the occupational statistics by Divisions we find the following distribution :—

TABLE 22.

Principal workers plus working dependants, in thousands.

Occupation.	Bombay City.	Northern Division.	Central Division.	Southern Division.	Total.
1. Exploitation of animals and vegetation.	11	12,63	20,29	14,60	47,63
2. Exploitation of minerals	1	7	1	1	10
3. Industry	1,76	1,94	3,30	1,77	8,77
4. Transport	51	31	37	23	1,42
5. Trade	87	64	1,19	83	3,53
6. Public Force ..	9	8	25	9	51
7. Public Administration ..	32	15	52	19	1,18
8. Professions and Liberal Arts.	20	26	40	23	1,09
9. Persons living on their income.	2	9	6	4	21
10. Domestic service ..	40	24	55	21	1,40
11. Insufficiently described.	1,26	96	95	85	4,02
12. Unproductive ..	8	18	49	25	1,00
Total ..	5,63	17,55	28,38	19,30	70,86

It will be seen that the Southern Division has a larger proportion of its total workers engaged in agriculture (75 per cent.) than the other two Divisions (71 per cent.) ; while for industry the proportions for the three Divisions are 11·1 for Northern Division, 11·6 for Central Division and 9·1 for Southern Division. Excluding the City of Bombay, the Provincial average of workers engaged in industry to total workers comes to 10·6. The districts, the proportion of whose workers engaged in industry to total workers is larger than the Provincial average, are, Ahmedabad (26 per cent.), Sholapur (20 per cent.), Dharwar (14 per cent.) and Bijapur (13 per cent.) ; while the districts, the corresponding figures of which are lower than the Provincial figure are, Belgaum (10 per cent.), Poona (10 per cent.), Nasik (10 per cent.), Ahmednagar (10 per cent.), Kaira (9 per cent.), Surat (9 per cent.), Satara (9 per cent.),

Kanara (9 per cent.), Thana (7 per cent.), West Khandesh (7 per cent.), Broach (6 per cent.), Ratnagiri (5 per cent.), Kolaba (4 per cent.) and Panch Mahals (4 per cent.).

62. *General Economic condition.*—We have now completed our brief survey of the condition of the population of the Bombay Province from the point of view of their health, literacy, and occupation. To complete the picture, it is only necessary to add a brief account of their general economic condition. No official statistics of income of the people of Bombay are available for recent years. The Committee, however, were able to obtain estimates of the value of agricultural output of this and other Provinces from Dr. V. K. R. V. Rao's study of the Income of British India for 1931-32* and the following table is based on his work :—

TABLE 23.

					Value of agricultural output (Rs. in millions).	Total agricultural income per worker engaged in agriculture (Rs.)
Assam	..	..	..	..	218	67
Bengal	..	..	..	..	1,317	134
Bihar and Orissa	..	..	..	..	1,051	87
Bombay	..	..	..	..	773	173
Central Provinces	..	..	..	..	447	67
Madras	..	..	..	..	1,357	108
United Provinces	..	..	..	..	1,337	74
Punjab	..	..	..	..	421	84

It will be seen that the economic condition of the Bombay agriculturists compares favourably with that of agriculturists in the other Provinces. An indication of the extent to which the Bombay agriculturists are organised is given by the statistics of the number of

* MacMillan and Company, 1940.

primary agricultural credit societies and the value of their working capital per 1,000 workers engaged in agriculture :

TABLE 24.

				No. of Societies (1936-37)	Working Capital (i.e., share capital and Reserve) (Rs. in lakhs)	Working capital per 1,000 workers.
						Rs.
Madras	..	..	..	11,068	166·8	1,283
Bombay	..	..	..	4,037	124·3	2,492
Sind	..	..	..	1,024	29·0	3,581
Bengal	..	..	..	21,255	254·8	2,462
United Provinces	..	..	..	7,788	64·0	326
Punjab	..	..	..	18,846	405·7	7,487
Bihar and Orissa	..	..	..	9,174	55·9	442
Central Provinces and Berar	..	..	..	3,792	32·4	469
Assam	..	..	..	1,296	13·2	377

It may be added that though Bombay is a Province of peasant proprietors, the number of absentee landlords is considerable and a good part of the agricultural land of the Province is being cultivated by tenants. In fact, according to the latest quinquennial statement of holdings published in the Bombay Land Revenue Administration Report of 1936-37, no less than 18·4 million acres or 65 per cent. of the total agricultural land of the Province was being cultivated by tenants.

From the point of view of non-agricultural pursuits, the pre-eminence of the Province of Bombay in India's economy needs hardly any proving. The largest number of income-tax payers is to be found in this Province. The following table gives some relevant income-tax statistics both for this Province and the other major Provinces :

TABLE 25.
1936-37.

Province	Total Income Assessed. Rs. (000)	Net total income-tax collected Rs. (000)	Number of assesseees.
Bombay	4,21,103	33,169	83,523
Bengal	3,29,302	24,938	48,533
Madras	1,73,488	10,708	40,670
United Provinces	1,23,680	7,967	26,259
Punjab	1,21,365	7,161	34,737
Bihar	61,416	4,001	17,381
Central Provinces	43,877	2,568	10,790
Assam	41,948	2,541	6,834
Sind	35,332	2,227	10,364
Orissa	8,820	497	2,325

It may also be pointed out in addition that nearly 38 per cent. of the income-tax on securities is realised from Bombay while of the income-tax on property as well as on professional earnings, Bombay has the larger share of the total Indian collections.

From the point of view of joint-stock enterprise, postal savings per head of population, and the number of factory workers, Bombay takes a leading place as can be seen from the figures given below :—

TABLE 26.

	Number of Joint Stock companies. (1935-36).	Paid up capital Rs. (000) (1935-36).	Postal Savings Bank deposits per head of population (1937-38).	Cash certificates sold per head of population (1937-38).	Number of factory workers (1936-37).
Assam ..	192	96,17	Rs. 3	Rs. 0-4	47,069
Bengal ..	4,916	1,33,42,23	3	0-4	5,31,235
Bihar and Orissa ..	137	2,47,47	1-3	0-1	90,022
Bombay ..	1,419 (including Sind).	97,08,30 (including Sind).	6	2-1	391,771 Bombay. 25,289 Sind.
Central Provinces and Berar.	78	92,93	3	0-8	63,186
Madras ..	1,262	13,84,77	1-2	0-1	170,800
North West Frontier Province.	20	13,60	6	1-0	1,149
Punjab ..	786	3,75,32	6	1-0	63,962
United Provinces ..	406	9,17,90	3	0-4	1,47,502
Sind and Baluchistan ..	1 (Baluchistan only).	....	6	0-4	1,750 (Baluchistan only).

63. In addition to its possession of capital and industrial enterprises, Bombay is also a leading commercial centre, the volume of its exports and imports totalling 33·3 crores and 73·7 crores of rupees respectively in 1937-38 which meant 30 per cent. of the total foreign trade of India. Though Bombay is thus a little better off than other Provinces, taken by itself, its economic condition can hardly be termed as satisfactory, when only one in 271 persons has an annual income exceeding Rs. 2,000. It is true that the income-tax does not cover agricultural income, but even if it did, the number of those having an income of Rs. 2,000 will not be increased by more than 30 or 40 per cent. The analysis of the occupational distribution of the people has also shown that Bombay is heavily dependent on agriculture and that industrialisation in the Province has not reached to anything like the extent which it has in the other industrial countries of the world. In the next chapter, we proceed to give a brief description of the more important industries existing to-day in this Province.

CHAPTER V.

A GENERAL SURVEY OF INDUSTRIES IN THE PROVINCE.

64. *Decline in the number of Cottage workers.*—We have already seen that Bombay is industrially perhaps the most advanced Province in India. According to the Census of 1931, there were 877,000 persons, engaged in industrial occupations in Bombay Province; of this number 73,000 were returned as working dependants. The number of industrially occupied persons in the Province was 972,000 according to the Census of 1921 and 954,000 according to that of 1911. It is no use carrying the figures any further back, as differences in classification are too great to permit any useful comparison. All the same it is a matter deserving of serious attention that in what is considered to be the most industrial Province of India, the population engaged in industrial occupations appears to have fallen both absolutely and relatively to other occupations. As against this fall, the number of persons working in registered factories rose from 226,000 in 1911 to 351,000 in 1931. In 1938 it had risen to 479,000.* There is no doubt that the smaller factories which do not come within the scope of the Factories' Act must also have increased in number and with it also the number of men employed therein. During the same period the paid-up capital of joint stock companies registered in the Province (including Sind) rose from Rs. 2,276 lakhs in 1910-11 to Rs. 9,774 lakhs in 1930-31. In 1935-36 this had reached Rs. 9,708 lakhs. It is obvious, therefore, that the decline in the total number of industrial workers can only be due to a decline in the number of workers engaged in cottage industries. Thus cottage industries have not only been unable to maintain their place in the Provincial economy, but have not even managed to maintain in employment their original number of workers. In addition, the economic condition of those who still maintain themselves by cottage industries has deteriorated very considerably.

Decline in part-time Cottage Industries.—This decline in the number and importance of whole-time cottage workers in the Province is not the end of the story. Another feature of the industrial evolution of the Province is the steep fall which has occurred in the subsidiary occupations of the agricultural classes. It is not possible to give statistical data regarding this decline, but there is enough evidence to substantiate this conclusion. Among the subsidiary occupations thus lost by the cultivating class may be mentioned spinning, ginning of cotton by hand, paddy husking, flour grinding and handloom weaving. This in turn has meant a fall in their average income. The decline in the number of whole-time cottage workers has meant also an increased pressure on land and a consequent increase in the sub-division of holdings. Thus, the industrial evolution and modernisation of the Province has seen the agricultural community suffering in two ways, namely, increasing pressure on land

*It must be pointed out, however, that a part of this increase was due to the change in classification in 1934, when certain factories employing persons less than 20 and more than 10 persons were brought under the scope of the Indian Factories' Act.

and increase in under-employment due to loss of subsidiary occupations. Both these have meant a decline in income. As against this must be mentioned the rise in income that the cultivating community has obtained by the greater vicinity to urban markets which modern methods of transport have provided them with, the distinctly larger urban markets available to them now and the cheapening of a number of industrial commodities consumed by them. On balance, however, it is not at all certain that the agricultural community has gained by industrialisation. But one thing is certain that even where industrialisation has helped, the help has not been uniform over the different areas, and the areas, which have gained the most have not always been the areas which have suffered the greatest by the decline of their whole-time and part-time cottage industries.

65. *Classified statistics of industrial workers.*—Having indicated briefly the general trend of industrial evolution in this Province, we shall now proceed to analyse the statistics of industrial workers as given in the Census of 1931.

The 877,000 industrial workers dealt with in the Census of 1931 are classified under 13 major occupational heads; these heads in turn are divided into sub-heads and the total number of sub-heads comes to 59. The Census distribution under the major occupational heads is as under :—

TABLE 27.

Industry.	Number of persons (000s).
Textiles	381
Toilet and dress	152.
Wood	84
Building	49
Ceramics	40
Metals	30
Chemical products	20
<u>Food industries</u>	<u>30</u>
Hides, skins, etc.	16
Furniture industries	4
Production and Transmission of physical force	4
Construction of means of transport	2
Miscellaneous and undefined industries	65

Details of the distribution of these workers under factories or cottage establishments are not available in the Census Report. The Census Commissioner, Mr. Sorley, has, however, made an attempt to locate the number of artisans in the Bombay Province. This he has done by regarding the workers returned under sub-heads* 51, 54, 55, 56, 59, 60, 61, 63, 64, 65, 68, 70, 71, 72, 73, 74, 75, 76, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90 and 100 as artisans; the total number returned under these heads comes to 379,000.

During the Census year the number of workers in registered factories was 351,000. Excluding 28,000 persons employed in factories connected with transport like railway workshops, shipyards, etc., the number of persons employed in registered factories engaged in industrial production was 323,000. One could, therefore, infer that the remaining workers who are neither artisans nor employed in registered factories could be regarded as employed in small scale and cottage establishments. On this basis it is possible to arrive at the following classification of the industrial workers of the Province:—

Registered factory industries	..	323,000
Small scale and cottage industries	..	175,000
Artisans	.. ..	379,000
		<hr/>
Total	..	877,000

This classification, however, does not serve the purpose we have in view. Thus, for example, the 379,000 persons classed as artisans include such distinctly different types as scavengers, who could be regarded as suppliers of pure services and brass and copper workers or workers in leather who would come under the category of small independent manufacturers. Moreover, some of the persons regarded as artisans according to this classification such as turners and joiners may be actually employed in small factories. We would like, therefore, to attempt another kind of classification of these 877,000 workers. Thus, it is necessary to distinguish the industrial workers who are suppliers of pure services from those who are engaged in manufacturing operations in a more material sense, as the economic problems pertaining to the former are different from those of interest to the latter. Such suppliers of pure services would include sawyers, butchers, toddy drawers, tailors, milliners and dress makers, darners, washers and cleaners, barbers, hair-dressers and wig makers and scavengers. The total number of such suppliers of pure-services was 146,000 in 1931. That leaves 380,000 as the number of workers in cottage and small scale industries. In spite of our best efforts, we have not found it possible to further classify this head into cottage industries and small scale industries, but from the evidence we have been

* Workers in leather, sawyers, carpenters, turners and joiners, basket makers, etc. blacksmiths, brass and copperware workers, other metal workers, potters, brick makers other workers in ceramics, vegetable oil workers, other oils, grain parchers, butchers, sweetmeat, etc., toddy drawers, other food industries, tailors, etc. embroiders, hat makers etc. washing, cleaning, barbers, others (dress and toilet), cabinet makers, etc.

able to gather, it seems that much the larger proportion of this number pertains to cottage workers.*

Details are, however, available for the registered factories; and the following table gives a classified statement of the Province both for the Census year 1931 and for the latest year for which information is available viz. 1938:—

TABLE 28.

	Nc. of factories.		No. of workers.	
	1931.	1938.	1931,	1938.
Government and Local Fund factories ..	57	56	21,449	20,686
Textiles	227	489	245,479	339,792
Engineering	129	360	20,581	28,629
Minerals and Metals	16	34	719	1,220
Food, Drink and Tobacco	48	142	2,565	5,766
Chemicals, Dyes, etc.,	106	204	12,942	17,825
Paper and Printing	92	291	6,709	11,536
Processes relating to wood, stone and glass.	27	106	2,078	6,563
Processes relating to skins and hides ..	3	24	249	1,410
Miscellaneous	27	64	961	3,859
Seasonal Factories	625	725	36,142	41,817
Total ..	1,357	2,495	349,874	479,103

*We made an elaborate attempt to obtain the statistics of those small scale industries which consist of factories not coming under the Indian Factories Act and which use power. An attempt was, therefore, made to obtain a list of all establishments using power in the Province from which it was thought the Committee could get statistics of at least the number of small scale industrial establishments. The sources of power used in the Province are mainly 4, viz., electricity, gas, oil and steam. Of these gas is used only in the City of Bombay. We addressed all the Electricity Companies in the Province requesting them to furnish us with lists of persons or establishments to whom they were supplying electricity for industrial purposes and we are happy to state that all the Electricity Companies in the Province complied with our request. We thus found that there were 5,061 individuals and establishments in the Province using electricity for power purposes. These lists, however, did not indicate in most cases the nature of the occupation followed by the individual or establishment in question and none of them contained any statistics of the number employed.

The Collectors of the various districts were, therefore, sent lists of the concerns run by electricity within their areas and they were also supplied with copies of the questionnaire which the Committee had prepared for factories. The Collectors were requested to get these forms filled up by the owners of these factories. Of the 5,061 concerns, 2,735 were located in the City of Bombay and 1,566 in Surat. The Commissioner of Police for Bombay and the Collector of Surat were both unable to undertake the extensive enquiry that would have been necessary to get so many forms filled up. For the remaining districts we got the forms returned duly filled up except for 135 forms which were returned blank. Some of the forms received were in respect of registered factories, water pumps, etc. Excluding these, the number of factories came to 275 and the number of persons employed to 780. But these figures take no account of Bombay City and Surat which account for more than 85 per cent. of the number of concerns run by electricity in the Province.

As regards other sources of power there were reported to be more than 11,000 concerns run by gas in Bombay City; obviously not all of these were industrial establishments. As regards steam, there were in 1938-39, 1,910 steam boilers registered in the Province. As the number of registered factories run on steam was 470, it can be inferred that the small scale concerns were 1,440 in number. As regards oil, the statistics collected by the Department of Industries for 18 districts excluding the City of Bombay and its suburbs showed the number of concerns run on oil to be about 1,600. If Bombay City and suburbs are to be included, the number will be much larger.

The data thus collected is not enough to justify us in estimating either the number of small scale concerns or the number of workers employed in them. We have given the result of our investigations in detail only because we hope it will induce Government to fill up this grave lacuna in the industrial statistics of the Province.

Among the seasonal factories in 1938 are 634 cotton gins and presses and 79 gur factories as against 585 gins and presses and 36 gur factories in 1931. It will be noticed that the largest number of workers are returned under textiles. Engineering occupies the next place while chemicals and dyes come third. The concentration of factory industries in certain centres is seen from the following statements of the territorial locations of these factories and the number employed :—

TABLE 29.

	No. of factories.		No. of workers.	
	1931.	1938.	1931.	1938.
Bombay City	381	824	167,024	230,513
Ahmedabad	201	342	79,583	124,789
Broach and Panch Mahals	60	87	8,445	10,204
Kaira	23	45	3,063	4,123
Surat	52	133	4,028	6,921
Thana	10	50	1,720	4,283
Bombay Suburban	30	57	11,082	9,998
East Khandesh	149	144	15,527	15,405
West Khandesh	75	90	7,011	8,564
Nasik	34	48	3,194	4,374
Poona	41	97	8,464	10,543
Sholapur	47	181	21,409	25,436
Ahmednagar	62	119	1,976	4,277
Satara	2	9	74	463
Belgaum	35	54	4,531	3,763
Bijapur	48	51	2,233	1,722
Dharwar	96	136	10,006	11,288
Kolaba	5	16	328	868
Kanara	4	6	134	184
Ratnagiri	2	6	42	1,385
Total	1,357	2,495	349,874	479,103

It is unfortunate that similar details are not available for the small scale and cottage industries of the Province which after all form the main subject of our inquiry. But we have already pointed out that such information can be obtained only by an industrial census and we would like to emphasise once again the necessity for Government undertaking the same in the near future. In the meanwhile, we have to make the best use of whatever data we have been able to collect within our limitations; and the following brief notes on some of the individual industries of the Province will be found to be useful in getting a general idea of the industries of the Province.

66. The following are the industries we have dealt with in this chapter. For obvious reasons, the list has had to be brief; but a more detailed treatment of these and of other industries not mentioned here will be found in Volume II of our Report :

1. Textiles—Cotton weaving.
2. Textiles—Printing and Dyeing.
3. Textiles—Wool weaving.
4. Textiles—Silk weaving.
5. Textiles—Rope, twine, string and other fibres.
6. Textiles—Hosiery.
7. Industries connected with dress and toilet.
8. Industries connected with wood.
9. Industries connected with bamboo and basket making.
10. Industries connected with ceramics.
11. Industries connected with metals other than brass and copper.
- 11A. Industries connected with brass and copperware.
12. Industries connected with food.
13. Industries connected with tobacco.
14. Industries connected with chemicals and allied products.
15. Industries connected with match industry.
16. Industries connected with hides and skins.
17. Industries connected with furniture.
18. Dairy industry.
19. Soap industry.
20. Fruit canning.
21. Aerated waters and fresh fruit drinks.
22. Gold and silver thread industry.
23. Sandalwood and ivory carving.
24. Glass works.
25. Fishing and fish curing.
26. Poultry farming.
27. Other industries.

67. *The Cotton textile industry.*—The most important industry of the Province is of course the cotton textile industry. According to the Census of 1931 the number of workers engaged in spinning, weaving and other allied occupations like twine, rope-making, lace-making, etc., was 312,000 while according to the Factory Report for the same year the number of persons engaged in spinning and weaving in the registered factories of the Province was 242,000. The inference may, therefore, be drawn that only about 70,000 persons or less than 25 per cent. of the total number were engaged in hand spinning and handloom weaving and in unregistered powerloom factories. In addition, there were about 6,000 persons who followed these occupations as subsidiary to their main occupations. The textile industry of this Province can therefore be described as of three kinds.—(1) the big spinning and weaving mills where the number of looms and spindles runs into thousands, (2) the smaller powerloom factories where the number of looms vary from 10 to 20 to a few hundreds and (3) the handloom weaving industry.

68. *The large scale textile industry.*—It is not necessary for us to discuss at any length this section of the textile industry. The position of this industry in the Bombay Province proper, as it was in the Census years 1921, 1931 and as it is to-day is briefly summed up in the following statement :—

TABLE 30.

Description.	1921.	1931.	1938.
Number of spindles	4,753,900	5,990,600	5,631,024
Number of looms	96,600	133,400	130,582
Quantity of yarn spun (lbs.) ..	469,945,000	475,944,000	647,663,000
Quantity of cloth woven (Yds.) ..	1,304,807,000	1,829,793,000	2,782,990,000
Number of persons employed ..	231,436	240,838	236,595

(Annual Reports of the Bombay Millowners' Association and Statistics of cotton spinning and weaving in Indian mills.)

It will be seen that both the quantity of yarn and the quantity of cloth manufactured in the textile industry of Bombay are progressively on the increase. As regards the comparative position of the Bombay organised textile industry vis-a-vis the rest of India, the following statement sums up the relevant statistics:—

TABLE 31.
(For the year 1938.)

Description. (1)	All-India (including States). (2)	Bombay Province. (3)	Percentage of figures in column 3 to figures in column 2. (4)
Number of spindles	10,020,275	5,631,024	56
Number of looms	200,286	130,582	65
Number of men employed ..	437,690	236,595	54
Quantity of yarn spun (Lbs.) ..	1,303,246,000	647,663,000	49
Quantity of cloth woven (Yards) ..	4,269,269,500	2,782,990,000	65

The industry is, as is well known, concentrated in the two centres of Bombay City and Ahmedabad. Details of its territorial distribution in the Bombay Province are given below:—

TABLE 32.

	Number of spindles.	Number of looms.	Number of men employed.
Bombay City	2,906,202	67,294	118,993
Ahmedabad City	1,942,286	47,147	74,279
Sholapur district	317,368	6,806	20,368
East Khandesh	100,340	2,463	5,842
Belgaum	74,328	....	2,759
Kaira	59,028	1,128	2,311
Broach	51,828	1,174	2,144
Viramgaon	49,508	1,187	2,160
Dharwar	49,444	800	2,753
West Khandesh	46,136	1,058	2,572
Poona	15,592	552	814
Thana .. ..	....	271	323
Others	18,964	702	1,277
Total ..	5,631,024	130,582	236,595

(Annual Report of the Bombay Millowners' Association, 1938, and monthly Statistics of cotton spinning, and weaving in Indian Mills, March 1938.)

69. *Small power-loom factories.*—In addition to these large mills, there are a number of small factories some of which specialise in the production of artificial silk cloth and others in that of hosiery articles. There are also a number of still smaller concerns having a small number of powerlooms and weaving *dhotis*, *sarees*, shirtings, etc. No statistics are available of the number or other details of such concerns. We called for information from the *Mamlatdars* of the different *talukas* in the Province on the number of such looms in their respective areas and found that for the Province as a whole, this number was in the region of 2,500. Details of distribution by areas are given below :—

TABLE 33.

District.				Number of power-looms.
Ahmedabad	..	..	..	10
Broach and Panch Mahals	..	..	..	10
Surat	..	..	..	1,081
Thana	..	..	..	950
Bombay Suburban	..	..	..	26
East Khandesh	..	..	..	14
Nasik	..	..	..	239
Poona	..	..	..	5
Satara	..	..	..	7
Sholapur	..	..	..	39
Belgaum	..	..	..	12
Dharwar	..	..	..	168
Ratnagiri	..	..	..	7
			Total ..	<u>2,568</u>

70. *Handloom weaving, size of industry.*—Regarding the handloom weaving industry, it is very difficult to get any accurate figures regarding the number of looms, value of output, etc. Generally speaking, it appears that there has been a decline in the number of looms, but even this impression is not warranted for all the districts, it being stated that in places like Guledgud in the Bijapur district, the number of looms is actually on the increase. The information supplied to the Tariff Board by the Department of Industries to the Government of Bombay in 1932 and 1935 places the number of looms in the Province at 100,000 and 110,183 respectively. In Mr. Telang's report on the handloom weaving industry in the Bombay Presidency, submitted to the Bombay Government in 1928, there is a statement showing the approximate number of handlooms working at different centres in the Bombay Presidency. The information given is of the number of centres and the average size distribution of the number of looms in these centres; from this table, the total number of looms in the Province can be estimated at 85,796. The Committee's investigators were able to get estimates of the number of handlooms in several of the important centres but obviously it was not possible for them to collect anything like complete information in this regard; it was, therefore, not possible to build up an estimate of the total number of handlooms in the Province on the basis of the investigators' reports. Another estimate is found in a statement prepared by the Marketing Officer for handloom products under the Department of Industries where the total number of looms is placed at 72,000. Another way of calculating the number of looms is to take the estimated production of handloom woven cloth in the Province and divide it by the estimated output per loom. Calculations made on this basis give an estimate of looms which is more than 100 thousand. Taking all these estimates together, there is no doubt that the number of looms in the Province cannot be less than the Department's estimate of 72,000. It also seems clear that the number cannot be much in excess of 100,000.

71. *Handloom weaving, Regional distribution.*—More information is available regarding the regional distribution of the handloom weaving industry of the Province. The industry is largely confined to the Central and the Southern Divisions, the important weaving centres being Bijapur Dharwar, Ahmednagar, Sholapur, Belgaum, Nasik and Poona. Surat, of course, comes in with its automatic looms. The following are the

weaving centres at which Mr. Telang estimated the number of looms to be more than 1,000. Mr. Telang's figures are for 1928 :

TABLE 34.

Name of weaving centre.	Number of throw shuttle looms.	Number of fly shuttle looms.	Total Number of looms.
Sangamner	800	1,200	2,000
Yeola	2,800	200	3,000
Malegaon	200	3,800	4,000
Dhulia	100	1,500	1,600
Dharangaon	2,000	200	2,200
Parola	1,200	500	1,700
Surat	1,800	200	2,000
Sholapur	200	6,000	6,200
Ilkal	3,000	25	3,025
Guledgud	2,000	1,500	3,500
Gadag	3,200	50	3,250
Gajendraga	2,000	50	2,050
Ranibennur	2,000	60	2,060
Hubli	3,500	12	3,512
Bhiwandi	300	1,700	2,000
Total ..	25,100	16,997	42,097

It will be seen that a good proportion of the looms are of the fly-shuttle type excepting in the weaving centres of the Karnatak where the throw-shuttle is predominant.

72. *Estimate of production of cloth on handlooms.*—For estimating the quantity of cloth produced on these handlooms, we have resorted to the method of calculating the available supply of yarn in the Province and multiplying it by four which we take as representing the average yardage of cloth that is being manufactured out of one pound of yarn on the handloom. In order to calculate the available supply of yarn, we have added to the figures of the production of yarn within the Province that of the imports of yarn by sea, by coast and by rail. From this total we deduct the exports of yarn from the Province by sea, by coast and by

rail. The resultant figure represents the total supply of yarn available for use in the Province. From this we deduct the figure of yarn used by mills and that gives the supply of yarn available for handlooms and for other purposes. From this we deduct 10 per cent. to cover other uses of yarn for twines, ropes, etc. ; the remaining quantity of yarn is available for use on handlooms. Proceeding on the assumption that out of one pound of yarn four yards of cloth could be woven on the handloom, we get our estimate of the total quantity of cloth woven on handlooms and in small powerloom factories in the Province. This figure comes to 199 million yards for the year 1937-38, the latest year for which these statistics were available. Details are given below :—

TABLE 35.

		1937-38.	Lbs.	
<i>Foreign</i>	<i>Overseas</i> ..	Imports of yarn ..	10,848,762	
		Exports (re-exports) of yarn ..	—57,166	
	<i>Coastwise</i> ..	Imports of yarn ..	69,380	
		Exports of yarn ..	—661,086	
	<i>Rail and Riverborne.</i>	Imports of yarn ..	4,859,074	
		Exports of yarn ..	—8,237,966	
			Total foreign yarn ..	6,820,998
	<i>Indian</i>	<i>Overseas</i> ..	Exports of yarn ..	—28,092,900
			<i>Coastwise</i> ..	Imports of yarn ..	4,179,899
		Exports of yarn ..		—13,672,870
<i>Rail and Riverborne.</i>		Imports of yarn ..	17,001,884	
		Exports of yarn ..	—52,180,864	
		Total Indian yarn	—72,764,851	
Production in mills in the Bombay Province			592,126,414	
Total yarn available in the Province			526,182,561	
Yarn consumed in mills in the Province			—470,963,400	
Balance available for extra-mill consumption			55,219,161	
Less 10 per cent., for fishing nets, small hoisery, waste, etc. ..			—5,521,916	
Net balance available for handloom and powerloom industry ..			49,697,245 lbs.	
Production of cloth on hand and powerlooms (on the basis of 4 yards per lb.)			198,788,980 Yards.	

If we assume that the average production of a powerloom is 3 times that of a handloom, the total output of cloth in the powerloom concerns will come to 12 million yards. That will give 187 million yards as our estimate of the output of cloth woven on handlooms in the Bombay Province in 1937-38:

73. *Handloom Weaving, Quality of output and income of weaver.*—It will be seen further that of the total supply of 55 million lbs. of yarn that is available, only 27 million lbs. were obtained from within the Province. Of the remaining 28 million lbs., 7 million lbs. came from abroad and the rest from other parts of India. The counts of yarn in use varied from below 10 to more than 100. From the analysis contained in Mr. Telang's report as also the impressions gathered by our investigators, it appears that yarn of counts higher than 20 are used a great deal; in fact, in many places where *saris* and *khans* were being manufactured, yarn of counts 40 and above were more the rule than an exception. This feature of the Bombay handloom weaving industry is directly contradictory to the opinion expressed by the Textile Tariff Board in 1932 that the handloom weaving industry in India specialises in the production of coarse cloth. Even if that be true of the handloom weaving industry of the country as a whole, it does not appear to be true of the Bombay branch of the industry. The articles manufactured on the handlooms are mainly *saris*, *khans*, *paithanies* and *pitambers*. There is also a certain amount of weaving of *dhoties* and towels. In certain places weaving of shirtings, coatings, bed-spreads, table cloths, etc., is begun. It is difficult to estimate the total value of the handloom woven cloth in the Bombay Province but if we assume an average value of 4 annas per yard, the total value could be estimated at about Rs. 5 crores. This includes, however, the value of cloth woven on powerlooms; the value of the cloth woven is, therefore, less than Rs. 5 crores. The income of weavers varies from place to place and seems to work out on an average of 6 to 8 annas per day on the days the weavers get work. According to the information received on the subject from the various Weaver's Co-operative Societies, it appears that the monthly income of a weaver varies from Rs. 4 to Rs. 16. The average figure seems to be Rs. 7. The information collected by the Committee's investigators would place the average income of a weaver at Rs. 8 per month. If we assume the income at Rs. 8 per month, then the income of the weavers of the Province would come to Rs. 96 lakhs on the basis of there being 100,000 handloom weavers in the Province. That would give weavers' wages a proportion of 20 per cent. of the total value of handloom cloth woven in the Province. This appears to be a reasonable estimate because from information collected in the Nasik district the proportion of value of yarn to value of cloth came to 64 per cent., the remaining 36 per cent. should cover the value of processes preliminary to weaving and the value of middlemen's services and the wage bill; if the wages were to be

placed at about 21 or 22 per cent. the value of the other services would come to 15 or 14 per cent. These proportions are reasonable and lend support to our estimate of the income of the weavers. We will consider in detail in the next chapter the various difficulties which this industry is being confronted with. It is enough to point out here that it is the biggest cottage industry in the Province and gives employment to more than a lakh of persons.

Textiles.

74. *Printing and Dyeing of cloth.*—According to the Census of 1931, there were 4,306 persons who were engaged in dyeing and printing cloth and in other occupations connected with the preparatory processes of textile manufactures. Of these, the Calico printers are to be found mostly in the City of Bombay and the districts of Ahmedabad, Khandesh, Nasik, etc. The industry is run on cottage basis mostly on a *karkhandari* system, though there are a few places where the independent artisans carry on the industry. At Ahmedabad there are at present estimated to be 125 karkhanas engaging nearly 1,500 artisans who are paid wages at the rate of 10 to 12 annas per piece for printing and 2 to 3 annas per piece for border. The equipment consists of wooden stands and dies of various designs. The cost of these dies varies from Rs. 5 to Rs. 30 according to the type of the design. The cloth used for printing is obtained locally and the printed cloth is sold either to mills or to dealers. The smaller *karkhandars* are estimated to earn on an average about Rs. 100 to Rs. 120 per mensem, while earnings are naturally greater in the case of *karkhanas* employing a larger number of workers. In Khandesh, the artisans work independently or work on a contract basis for dealers who supply them the cloth. The rates for contract work are usually one anna for printing and one anna for washing a piece of 10 yards. A family can prepare about 32 pieces in a week and the income of an average family of three members engaged in this work can be estimated at Rs. 15 to Rs. 20 per month. The earnings of the independent artisans are much less and average only Rs. 8 to Rs. 10 per month with the result that more and more independent artisans are taking to either the contract or wage systems.

Calico printing is carried on a large-scale basis in some of the textile mills. Besides, there are large imports of foreign printed cloth and chintz. During 1937-38 alone imports of such cloth into the Province were worth more than Rs. 9 lakhs.

Dyeing of thread gave employment to a large number of artisans when vegetable dyes were used and mill dyed yarn had not captured the market. Now this industry has declined, though a few families of dyers still struggle for existence at some of the handloom weaving centres, e.g., in Bijapur district where handloom weaving is the main industry, there are still a few families of dyers who sell dyed yarn to the local weavers and earn about Rs. 8 to Rs. 10 per month.

75. *Wool weaving*.—According to the Census of 1931, 17,139 workers were engaged in wool spinning and weaving in this Province. The more important areas where this industry is followed are as under :—

TABLE 36.

District.	Number of workers.	District.	Number of workers.
Dharwar	4,464	Belgaum	3,507
Kaira	1,379	Bijapur	1,282
Poona	1,109		

Generally speaking the wool weaving industry is a cottage industry, excepting for three factories in Bombay City and one factory at Thana which together employ about 1,690 persons. During 1937, the production of yarn in three of these mills was nearly 6 lakhs of lbs. and the total output of all woollen goods including yarn during the same year was worth more than Rs. 27 lakhs. Similar figures are not available for the cottage section of the industry. The main products of the cottage wool weaving industry are *kambliis* or blankets. Coatings and shirtings are not made to any appreciable extent; in fact, the quality of the wool available to the *kurbars* or the shepherds is not good enough for the purpose, even assuming that they had the necessary skill, as the wool used by them is obtained locally. The industry is not organised on a capitalistic basis, the independent artisans either selling their output to the trader or taking them to weekly bazaars. They work on old fashioned looms on which they can weave at the most about three *kambliis* a week per loom. The Department of Industries has,

however, been trying to introduce new types of looms and also new designs at some of the wool weaving centres. At Medleri which is an important centre in the Dharwar district there are about 150 looms and all the weavers are independent artisans, with one loom each. There are also many other small centres in the Dharwar district. The total output of *kambli*s at Medleri and the surrounding villages is estimated by the artisans to be about 700 to 800 *kambli*s a week. The traders buy most of these at prices varying from Rs. 1-2-0 to Rs. 1-12-0 each according to quality and sell them in the neighbouring districts at a profit of 3 to 4 annas per *kambli*. In the Satara district, Mhaswad is an important centre of wool-weaving and was visited by the investigator. The annual output of *kambli*s at this centre is estimated at 30 to 40 thousand. The prices vary from Rs. 1-8-0 to Rs. 2-8-0 and the weavers earn about 3 to 6 annas a day. The blankets are bought mostly by the cultivators who do not mind the roughness in view of the warmth and durability of these products. It appears from the inquiries made by the Committee's investigators that these wool-weavers earn about Rs. 6 to 8 per month. Spinning is done by their womenfolk. Though most of the women spin for their own family, there are others who maintain themselves by selling the woollen yarn. It is estimated that a woman can spin about 30 to 40 tolas of yarn a day and earn about 1½ to 2 annas per day. These women get work for 2 to 3 months during each of the two wool shearing seasons.

It may be added that the cottage wool-weaving industry of the Province does not cater to the demands of the urban population; and in consequence the Province imports woollen articles in large quantities from abroad and from other Provinces. In 1937-38 the total value of imports into the Province from abroad excluding yarn and knitted wool, was about Rs. 133 lakhs.

76. *Silk weaving*.—Silk rearing as a cottage industry is practically non-existent in the Province, and our cultivators have not so far taken to it as a subsidiary occupation. Real silk is imported from Mysore or Kashmir or from abroad, and now artificial silk is also imported in large quantities due to its cheapness in spite of an import duty of 25 per cent. *ad valorem* on yarn and thread and 50 per cent. *ad valorem* (30 per cent. on British manufactures) duty on fabrics. In 1937-38 artificial yarn worth more than Rs. 136 lakhs was imported into the Province and most of it was purchased from Japan.

The organisation of the silk weaving industry is not dissimilar to that of the cotton weaving industry, the only difference being that the higher cost of silk yarn leads to an even greater dependence on the middleman. Meanwhile a large factory industry has sprung up in Bombay for weaving cloth from artificial silk yarn, in addition to which the Province imports a large quantity of artificial silk cloth. During 1937-38 the value of such imports exceeded Rs. 219 lakhs. The cottage silk weaving industry, excepting in Surat, is catering only for the steadily declining demand for *parithamies* and *pagotas* and the earnings of silk weavers in Nasik and Poona are not higher than those

of the cotton weavers. In fact a number of silk weavers in Nasik have taken to cotton weaving being unable to face the competition of factory-made artificial silk cloth. The average earnings of silk weavers in Nasik district are estimated at 2 to 3 annas per day. According to the artisans engaged in silk weaving, the number of looms at Nasik engaged in silk weaving proper is between 400 to 900 while the number of persons engaged in *pagota* making is placed at about 1,500. The value of output of silk goods produced at Nasik is estimated at Rs. 10 lakhs.

77. *Rope, Twine, String and other fibres.*—The Census of 1931 places the number of people engaged in making these products at 25,175, the important centres for this trade being as under:—

TABLE 37.

Satara	..	..	..	5,889
Sholapur	..	..	..	4,744
Poona	..	..	..	3,535
Ahmednagar	..	..	..	3,228
Ahmedabad	..	..	..	966

The making of ropes is very largely a rural industry. Villages nearer to the big towns cater to the demand of the towns and villages distant from the towns cater for their own requirements. The fibres used for yarn are mostly local and consist of cotton, *ambadi*, *tag*, sisal hemp and cocoanut fibre. The workers in *ambadi* and sisal hemp are found mainly in the districts of Ahmednagar, Ratnagiri and Poona, the best quality of sisal hemp known as "Devguddi" coming from Ratnagiri. The fibre is obtained by water-retting. It is then separated by hand and it is reported that one person produces about 4 to 5 lbs. per day. The water retting leaves the fibre rather inferior in quality and the primitive appliances used for spinning do not give enough strength to the ropes. The work is done mostly by the backward classes who use the fibre in making ropes, strings, etc., with the help of primitive wooden appliances. The weaving of the fibre yarn into canvas cloth or fishing nets is practically unknown. The average earning of those engaged in these extractions of fibre and preparing of ropes, etc., is not more than about 2 as. a day and the work is performed not by cultivators so much as by the members of the backward classes. The output is sold either direct by these workers at fairs or by middlemen who finance these workers. At Bhamburda, near Poona, there are 400 to 500 *Mangs* who get their livelihood from this industry, and their total production of ropes is said to be worth Rs. 200 per day, except during the rainy season when business is slack. The ropes are sold either to the local dealers or by street hawking.

Cocoanut coir is available to the cottage workers of the coastal areas of Kolaba, Ratnagiri and Kanara. The total area under cocoanuts was

27,606 acres in 1937-38, of which more than 13,000 were in Ratnagiri district. Here again coir is obtained by the water-retting method. The fibre is very coarse and is spun into ordinary ropes and thick ropes required by agriculturists and factories. The appliances used are primitive. At Kanara, where the investigator studied the industry in detail, the coir rope making industry serves as a subsidiary industry to those engaged in agriculture, fishing and plying of country boats. The price of fresh husks varies from Rs. 4 to 5 per thousand cocconut husks. Though a few of them get their supply locally from the villagers, most of the rope makers depend upon the dealers in ropes to supply them the husk on credit. The dealers in turn see that the rope-makers sell their ropes to them at a price slightly lower than the usual market prices. The monthly income of a rope-maker does not exceed Rs. 4. Moreover, this income is not uniform throughout the year, as in the rainy season the demand falls considerably. Recently at Honavar in the Kanara district and at Ratnagiri, attempts are being made to train artisans in better methods of cleaning coir and spinning finer yarn. It may be added that the Province imports at present large quantities of ropes, fishing nets, cords, etc. Other fibre products such as suit cases, bags, belts, etc., are also imported in large quantities. It may be noted in this connection that experiments have been made in Ahmednagar by missionary enterprise in the direction of further utilisation of sisal hemp and it is reported that hand bags, purses, belts, etc., prepared under the supervision of the local missionary organisation are finding a ready foreign market. On the whole we can sum up the position of the fibre industry of the Province by stating that it is mainly organised on a cottage industry basis and that it is not meeting the major part of the Province's demands for fibre and fibre products.

78. *Hosiery*.—Another important industry under "Textiles" group is hosiery. Only a few years back most of our requirements in hosiery were supplied by imports, notably from Japan. Recently, however, substantial progress has been achieved in home production and in 1938 there were in the Province 14 factories employing nearly 1,780 workers. In addition there were a few other establishments producing similar goods but not coming under the Factory Act. The territorial distribution of the 14 factories is as under :

TABLE 38.

District.	Number of factories.	Number of works employed.
Bombay City	3	65
Ahmedabad	8	1,497
Bombay Suburban	1	72
Poona	2	146

That there is still more room for the production of hosiery goods in the Presidency is evident from the fact that we imported hosiery goods worth about Rs. 18 lakhs in 1937-38.

Production of hosiery goods can be both a cottage and a small scale industry. Mufflers, socks, hoses, etc., are produced from cotton, silk and woollen yarn. Of these only the cotton yarn is Indian and the rest is foreign. The brisk time for cotton goods is summer while woollen goods are in great demand in the cold and rainy seasons. On an average a *karkhana* employing 15 persons produces goods worth about Rs. 1,500 a month with the aid of equipment worth Rs. 30,000. The smaller establishments generally own a few knitting machines and produce mainly for the local demand. Both types of establishments are said to be feeling keen competition from Japanese imports.

79. *Industries connected with dress and toilet.*—These industries give employment to 152,000 people, according to the Census of 1931, and they are found in every district. The largest number of workers are found in the districts of East Khandesh (14,576 persons), Poona (11,159 persons), Ahmedabad (10,194 persons), Satara (9,240 persons), Dharwar (9,092 persons) and Sholapur (8,811 persons). The important sub-heads included under this major head are as follows :—

TABLE 39.

Boot, shoe and sandal makers	..	..	37,783
Tailors, milliners and dress makers	..	..	48,487
Washing and cleaning	..	..	25,069
Embroidery	..	..	1,226
Barbers and hair dressers	..	..	37,140

It is obvious that some of these heads cannot be called industries proper and do not, therefore, really fall within the scope of the Committee's work. The only important item of an industrial kind is boot and shoe making. Boot and shoe making is found in all the districts of the Province though according to the Census returns, it appears to be concentrated more in the Central and Southern Divisions. The important districts where this trade is followed are as follows :—

TABLE 40.

			Number of workers
Ahmednagar	..	..	4,528
East Khandesh	..	..	4,450
Poona	..	..	3,879
Satara	..	..	3,172
Nasik	..	..	3,157
Sholapur	..	..	2,492
Belgaum	..	..	1,954
West Khandesh	..	..	1,828
Bijapur	..	..	1,618
Dharwar	..	..	1,570

The Bombay City has 3,672 persons engaged in this occupation.

Boot, shoe and sandal makers are found both in towns and villages. Some of them are also tanners and supply their own leather requirements. The articles prepared are mainly shoes, sandals, *champals*, and water bags. In the larger towns of course suit cases, leather trunks, bags, etc., are also prepared but on a factory basis. The manufacture of shoes and *champals* is carried on both on factory and cottage bases, though in this Province the latter is more predominant than the former. In the cottage industry, there are two types of organisations, one where a master workman engages artisans on wages and the other where an independent artisan makes and markets his own products. The equipment required by the master workman consists of a sewing machine and other simple tools and their cost does not usually exceed Rs. 200. The artisans working under him are paid wages on piece work basis. At Sholapur these wages were reported to be annas 10 per pair of boots, 8 annas per pair of slippers and 2 annas for a pair of *champals*. On an average a workshop employing three boot makers and one *champal* maker can prepare 80 pairs of *champals* and 60 pairs of boots, shoes or slippers. The usual selling rates are Rs. 2-4-0 to Rs. 2-8-0 for boots, Rs. 2-0-0 to Rs. 2-4-0 for slippers and 8-10 annas for *champals*. The average income of the master workman is stated to be between Rs. 15 to Rs. 20 a month. As for the independent artisan, his equipment does not cost more than Rs. 10. It is reported that not more than three pairs of *champals* can be prepared by him in a day and his earnings are placed at Rs. 8 to Rs. 10 per month. It should be added that there are large imports into this Province of various kinds of leather products. During 1937-38 the imports of all-leather boots and shoes were worth about Rs. 4.7 lakhs and of leather belting machinery were worth Rs. 19.5 lakhs and that of other leather manufactures were worth Rs. 28.6 lakhs.

80. *Industries connected with wood.*—The total number of those engaged in the industries connected with wood are placed by the Census of 1931 at 84,000. The main heads under which this number is distributed are carpenters (58,228), basket makers and other industries of woody materials (20,559), and sawyers (4,858).

Of these, sawyers do not really constitute an industry. They are wage-earners who are engaged by contractors and are mostly found in the forest districts.

Carpenters of course form the most important artisan class of the Province and carpentry is both an urban and rural occupation. Generally speaking, carpentry as such is a cottage industry but carpenters can also be found employed in engineering workshops and large textile mills which form a part of large scale industry. The rural carpenter's main function is to prepare the agriculturists' implements and keep them in a state of repair. He has also to prepare cart wheels and to do repair work. Further he is engaged for the purpose of preparing doors, windows, etc. Formerly it was also a part of his function to prepare tools

required by other rural artisans. Thus for example *charkhās*, etc., used to be manufactured by him. At present his position is being seriously threatened because of the decline in cottage industries. Bullock transport has fallen a great deal in the last 30 years and cart making is no longer in such a demand. The other handicrafts whose machinery and implements the carpenters used to manufacture are also in a state of decline. Moreover, specialised carpenters in the coastal districts who used to make *machwas* or sailing boats are also in a bad way, as sailing ships are largely giving way to other more efficient means of transport. The carpenters engaged in building houses have been able to maintain their position and earn good wages but recently they are also being threatened by the imports of ready made doors and windows which are being manufactured on a large scale. It is rather difficult to estimate the earnings of an independent artisan—carpenter, but from enquiries made it appears that their earnings vary between Rs. 10 to Rs. 20 per month. The earnings of carpenters engaged in a larger organised industry or in the urban building industry are of course much higher. Carpenters in urban areas are also finding new scope in the furniture industry, but the position of the rural carpenter is getting worse and unless some new opportunities are found for him, his position in the rural economy appears to be in danger.

81. *Industries connected with bamboos such as basket making, etc.*—The chief centres of the industry according to the 1931 Census are as under :—

TABLE 41.

East Khandesh	2,979	Bijapur	1,250
Dharwar	1,733	Kaira	1,243
Belgaum	1,566	Ratnagiri	1,211
Surat	1,410	Poona	1,191
Thana	1,408	Sholapur	1,176

Basket making is almost wholly a rural industry and it is a cottage industry. Further, it is a family occupation and the workers mostly belong to the backward classes. In the northern part of the Thana district, basket making is very largely the work of women, the men getting employment as butlers and servants in Bombay. The bamboos are obtained from neighbouring forests. Usually they are purchased from middlemen but in some cases, particularly where the basket maker owns a cart, they are brought direct from the forests in order to benefit from the concession which is given by Government to professional basket makers by way of a smaller royalty fee on the bamboos directly removed by them. The articles made out of these bamboos are baskets, screens,

sieves, mats, etc. They are sold by the basket makers either direct in the neighbouring fairs or they are bought by the middlemen who advance them money for the purpose of purchasing bamboos. In some places, as in the Thana district, baskets are bought by the owners of betel vine plantations, fruit farms or flower farms. The work involved in basket making is very simple and a worker's average earnings come to between 1 anna and 2 annas a day. There are serious complaints of a decline in the demand for articles made out of bamboos, e.g., the replacement of bamboo or cane made waste paper baskets by iron made baskets; and the basket makers wanted the Government to do something to keep their trade alive. In this connection, it may be pointed out that the value of the annual output of bamboos in the Province is placed by the Forest Department at Rs. 1,52,000; and the volume of output can be increased if systematic efforts are made for the purpose. It is also relevant to note that this Province imports at present mats and other articles made of bamboos in good number. Further, there is a large urban demand for fancy articles made of bamboos, even though our basket makers have not at present the knowledge that will enable them to meet this demand.

82. *Industries connected with Building.*—The number of workers engaged in the building industry is placed by the Census at 49,000. These miscellaneous groups include lime burners, cement workers, stone cutters, brick layers, plumbers, etc. It will be seen that most of the workers mentioned in the list are not engaged in manufacturing operations with the exception of the workers in lime and cement. Lime burning is an industry which was once found in almost every district, but recently it has been retreating in several areas. It is interesting to note in this connection that there are no cement factories in Bombay Province, though the financial and marketing control of a good part of the cement production in the country is in Bombay City.

Lime burning is a fairly simple occupation depending upon the vicinity of sand, clay, etc. It is also largely a seasonal occupation. Further, it is not so much the calling of an independent artisan as that of a middleman; and the actual lime burners are usually employed on wages by these middlemen. From the information collected by the investigators who visited some of the districts, the average wage of the lime workers seems to be Rs. 4 to 5 per month. A few villagers also follow this industry as independent artisans but their production is very limited and their earnings are also very low. It may be noted that the progressively increasing use of cement in urban areas is driving the lime burning industry almost exclusively into the rural parts of the Province.

83. *Industries connected with ceramics.*—The total number of workers in ceramics according to the Census of 1931 is 39,974. Of these, 35,909 were described as potters and makers of earthenware, 3,062 as brick and tile makers, and the remaining as workers in other kinds of ceramics.

Pottery essentially is a cottage industry and in addition primarily a rural occupation. It will be found, therefore, that practically every district has a considerable number of potters. From the investigations

carried out into the numbers of artisans in villages of the Province it was found that out of 1,212 villages examined, 631 had potters resident within that area. The potter is an independent artisan who makes pots and other articles of earthenware in household use. The essentials of a potter's trade are a *bhatti* and a wheel. In many of the villages of the Presidency the potters use the silt of the local tank. The silt is either brought to the potter's cottage by the family members or on occasions, the potter takes the help of the cart of his brother agriculturist and pays him in return something either in cash or in kind. After the silt is brought, the clay is prepared and the potter's traditional wheel helps him to prepare the pots required. The potter's wife also works, her speciality being the smaller utensils required for household purposes. The wood required for *bhatti* purposes is generally collected by the children and the wife of the potter from the forests or by street collections. In many of the villages the potters exchange their products for some of their household necessities. In some of the areas the potters are themselves agriculturists and pottery gives them a good subsidiary income. The income of potters is said to range from Rs. 2 to Rs. 10 per month, expenses being almost nil. In the urban areas, however, the potter is worse off, for he has to pay for the wood that is required for his *bhatti*; and his goods have to be sold in the bazar for cash with which he has to purchase the grain and other necessities that he requires.

On the whole, there is no doubt that pottery as at present practised in the Province is a distressed trade, the traditional demand for the Indian potter's ware having fallen tremendously before the competition of cheap and durable aluminium articles. But it must also be pointed out that there is a great and growing demand in the Province for glazed earthenware and crockery which is being met at present by imports from abroad and from other Provinces. It may be noted that recently a factory has been started in Bombay for manufacturing glazed earthenware but no attempts have been made to get the urban and rural potter to take to the new technique.

The other important commodities manufactured by the potter are bricks and tiles. The raw materials required are clay, mud, etc. The brick and tile making season begins in November and ends by the middle of May. To prepare 15,000 country tiles, a *kumbhar* requires 30 cart-load of saline earth from the creek. The earth is generally brought to the brick-maker's door by the village cartman, the *zamindar* owning the creek or the land from which the earth is taken being paid in cash. Five persons can prepare 1,000 unbaked tiles a day. About 15 days are required to prepare the kiln for firing and the filling of the *bhatti*; and another 15 days are required for the baking of tiles. The tiles are generally sold at Rs. 1-8-0 to Rs. 1-12-0 per 1,000 to the dealer or the *sowcar* who has financed the potter. As for bricks, 10 cart-loads of earth are required for making 1,000 bricks and the husk required for mixing is worth about 4 annas; 4 men can prepare 1,000 unbaked bricks in a day and a *bhatti* can hold 10,000 to 12,000 bricks. The *bhatti*

takes 15 days for filling and an equal amount of time for baking. The coal, coke and wood required in the trade are generally purchased from the local fuel depot. The potter's products are rough and the prices realised by their sale are very low. His average income comes to about Rs. 5 per month. Unlike the occupation of the potter, the brick and tile making trade requires a certain amount of capital and this is usually obtained from the *sowcar* or the dealer with the consequence that the middleman gets control over the industry. Even allowing for this factor it would be correct to describe brick and tile making as a cottage occupation. Here, again, modernisation is exacting its toll from the rural artisan. Factory made bricks and tiles are getting increasingly popular and in the coastal areas, at any rate, tile making by the potters has practically ceased. But there is one natural advantage which brick and tile making by cottage methods enjoys and that is the bulky character of the final product and its low value per unit. Given, therefore, some improvement in the type of product turned out in the rural and urban kilns, there is scope for the wide dispersion of this industry over the Province; and it should furnish a good seasonal occupation to the rural potters who are residing in the vicinity of urban centres.

84. *Industries connected with metal.*—The total number of workers in metals has been placed at about 30,000 in the Census of 1931. This number is further classified under the following main heads :—

TABLE 42.

	Number of Workers.
Blacksmiths	20,128
Workers in brass and bell metal ..	6,329
Workers in other metals	3,630
Workers in smelting and forging, rolling of metal etc.	245

Workers in metal are spread over the whole Province and a large number is to be found in practically each district. The districts of East Khandesh, Nasik and Dharwar are, however, notable for each having more than 2,000 persons working in metals.

The blacksmith's trade is mainly a handicraft and he is particularly to be found in the rural areas. From enquiries made by us, it seems that out of 1,212 villages, no less than 783 had blacksmiths resident in them. The main occupation of the rural blacksmith is to help in preparing and repairing the agricultural implements of the cultivator and to help in making axles for carts, iron bands for cart wheels and also the tools required by artisans in other crafts. In some places the blacksmith manufactures locks and knives. The rural blacksmith's position is becoming unsafe because of the gradual advent of factory-made agricultural implements and because of the decline in bullock cart transport and other rural trades for which he used to manufacture the implements.

His main function has now become that of a repairer, and for this there is not work enough in the village. The result is that some blacksmiths have already begun to leave their hereditary calling. But it must be pointed out that while the old demand for the blacksmith's products is falling new demands for his services are arising from public requirements of cutlery, iron furniture, etc. To meet this demand, however, the rural blacksmith requires new training.

Blacksmiths are also to be found in towns but not as cottage workers. Moreover, their economic condition is distinctly better than that of their rural brethren. Thus the blacksmiths in urban areas who manufactured locks, crude knives and did repairing work have now become wage earners in engineering workshops and other factories and earn a substantial income. In addition, there are a few bigger concerns where iron articles of modern type are being made; such as safes, cots, chairs, etc.; a large number of such concerns is to be found in the City of Bombay. Even in the mofussil, a number of districts have establishments which produce steel furniture and other household requirements. The work is organised on a small scale and generally 8 to 10 people are employed. Wages of the urban blacksmiths in the mofussil average from Rs. 20 to Rs. 30. It must be pointed out, however, that the Presidency still imports a good part of its requirements of articles made of iron and steel such as, locks, knives, etc., these imports totalling a value of Rs. 11 lakhs in 1937-38.

In addition, there are the Province's requirements of machinery of various types. Our supplies of machinery are mostly obtained from abroad, the value of the imports of all kinds of machinery being Rs. 5½ crores, in 1937-38. But lately a few enterprising industrialists have started manufacturing within the Province machinery of a simple kind; thus, e.g., rice and flour mills machinery or spare parts for cotton ginning and pressing mills and sugar cane mills, and water pumps and ploughs are manufactured in the Province. The skilled labour employed is both Indian and foreign. The market for these goods is spread not only over the whole Province but in some cases extends to the neighbouring Provinces as well. But these concerns are not cottage industries. They have to be described as small scale or large industries according to the number of men employed.

85. *Brass and Copperware.*—According to the 1931 Census, 6,329 persons are returned as workers in brass and copperware in the Province. The brass and copperware industry is both a factory and a cottage industry; but it is almost exclusively located in the urban areas. The factory section of the industry consists of three big and nine small factories in Bombay City, one in Poona and six in the territories of the Bombay States; between them these factories supply more than 50 per cent. of the brass and copperware requirements of the Province. The cottage section of the industry is to be found chiefly in Hubli, Poona, Nasik, Ahmednagar, Surat, Kaira, Visnagar, Nadiad, Ahmedabad, Kolaba and to some extent in Bombay City, the largest single centre being Hubli.

The brass and copper sheets used in the manufacture are imported mostly from abroad, though the Bombay factories obtain from Bengal a large quantity of copper which together with zinc constitutes brass. The factories specialise in the production of the lighter and more polished articles like *thalis*, and *tats*. Usually these factories in addition to making brass and copperware also produce German silver or aluminium ware. In the fully mechanised *karkhanas* which are found in Bombay City and Poona, articles are manufactured by means of die processes and then planed, joined and polished. The machine operators in Poona are generally paid from Rs. 15 to Rs. 20 a month. The semi-mechanised *karkhanas* are to be found in different districts and in these the majority of processes are of the handicraft kind. Here mostly cast-ware is produced, the raw material for the casting being purchased locally. The price of *bhangar*, scrappings, etc., varies from Rs. 6-4-0 to Rs. 7-8-0 per 16 seers. Wages are on an average 10 annas per day for the man who looks after the furnace, the caster gets one rupee while the turner and filer get 12 annas to Rs. 1-8-0 and 10 annas to Re. 1 respectively. By far the most widely used processes are the non-mechanised processes and these constitute a pure cottage industry. Here the products consist almost exclusively of beaten ware from indigenous cast plates of foreign brass and copper sheets and articles like *handas* are made mainly by cottage workers. In this field, the middleman dominates the picture and distributes brass and copper sheets to artisans who work in their own homes and employ, when necessary, hired labour to assist them. The usual procedure is for the out-worker to return the cuttings to the dealer and wages are to be paid to him per maund of metal work done by him, the rate of payment varying according to the article manufactured. By way of illustration, we give below the rates of wages in this industry that are prevalent in the Satara district :—

TABLE 43.

	Wage per 16 seers.	
	Copperware.	Brassware.
	Rs. a. p.	Rs. a. p.
<i>Tapeli</i>	2 4 0	3 4 0
<i>Ghager</i>	4 0 0	5 4 0
<i>Handa</i>	3 12 0	5 0 0
<i>Tat</i>	1 4 0	1 4 0

Here again, modernisation is on the side of mechanisation and demand is swinging in favour of the better polished and more attractive looking factory-made articles. The result is that the cottage section of the brass and copperware industry is in a bad way and out-workers do not now-a-days get enough work. In fact, in the city of Hubli hardly three days' work in a week is said to be available to the out-worker even in the brisk season. As the brass and copperware industry is only next to handloom weaving in its importance among the urban handicrafts, its present state of decline is a matter of serious concern to all who are interested in the upkeep of urban handicraft economy. A

86. *Food Industries.*—The total number of persons employed in food industries is placed by the Census of 1931, at 29,664. As is to be expected, this number is to be found fairly evenly distributed in all the districts, West Khandesh and Poona, however, claiming a large number than the others. The principal food industries of the Province are rice grinding and husking and flour grinding (4,054 workers), grain parching (3,209 workers), making of sugar (1,013 workers), sweetmeat and condiments etc., (5,229 workers). As is to be expected, female workers are more in evidence in the food industries than they are in the other industries.

Rice grinding, rice husking and flour grinding are both rural and urban industries and originally they constituted a very important subsidiary occupation to the cultivators of this Province. The advent of the rice mill and the flour mill has resulted in the practical elimination of these handicrafts and to-day most of the rice husking is done by machines. And rice mills and flour mills are to be found in a large number in the Province. Flour mills are more in number than rice mills, as rice does not play the same important part in this Province as it does in some other Provinces. In 1931, there were 14 registered factories which were working as flour mills and the number of workers employed was 728, the corresponding figures for rice being 2 and 40 respectively. In 1938 the number of registered factories working as flour mills and rice mills was 11 and 25 respectively, while the number of workers employed by them was 782 and 307 respectively. These registered factories do not, however, give any adequate idea of the size of the industry. The Committee found that, taking only the unregistered factories run by electricity and excluding the city of Bombay and suburbs, there were in 1938 no less than 153 flour mills and 30 rice mills in the Province. If we include the unregistered factories that are run on oil, the number must be still larger. Amongst these mills there is very keen competition, the level of earnings in small mills is certainly not high and some of them do not get enough work to keep them running throughout the year. Thus, for example, it is stated that in Kanara these mills work from November to April and that too only for three days in a week. Rice mills are also found in large numbers in Kolaba where the manual labourers earn wages of 3 to 6 annas per day while the technical staff are paid at Rs. 15 to Rs. 50 per month. In fact, the cost involved in storing grain, the risk of fluctuation in prices

and the seasonal character of the supply have made these rice and flour mills an unremunerative and risky proposition, and it is only when they combine with it oil-crushing or some similar additional work that there is enough to do for the year.

Out of 3,209 persons returned as grain parchers in 1931, 2,050 are found in 5 centres namely East Khandesh (1,122), Dharwar (371), West Khandesh (388), Bombay City (286) and Sholapur (168). The making of parched rice and other grains is traditionally a cottage industry in most towns and villages. Even here the machine has made its appearance and in one important district in the Province a factory has been producing 1,500 maunds of parched rice in a year and selling them at rates of Rs. 3 to Rs. 3/8 a maund. As yet, however, the industry still continues to retain its cottage character.

Gur making and sugar making is not a very important industry in the Province of Bombay, as the area under sugarcane is only 72,000 acres. In fact Bombay imports about 20 per cent. of its requirements of *gur* and nearly 80 per cent. of its requirements of sugar. Incidentally it is worth noticing that the per capita consumption of sugar among different Provinces is the highest in Bombay. *Gur* making was a traditional cottage industry in the Province. It used to furnish a valuable subsidiary occupation to the cultivator in the sugarcane areas. The advent of the factory, however, has nearly destroyed this industry. There were in 1931, 36 *gur* factories in the Province employing 781 workers and one sugar factory employing 330 workers. By 1938 the number of *gur* factories had increased to 79 and the number of persons employed to 1,924, while the number of sugar factories had increased to 8 and the number of workers employed to 2,231. These factories are mainly located in the districts of Ahmednagar and Poona, Ahmednagar claiming the lion's share with 71 *gur* factories and 4 sugar factories in 1938. The sugar factories expanded at the expense of the foreign product, while the progress of *gur* factories was at the expense of the handicraft section of that industry.

Along with rice husking and flour grinding, *gur* making formed an important subsidiary occupation of the cultivator which has now suffered elimination at the hands of the factory.

87. *Tobacco*.—The tobacco habit is as popular in this Province as it is elsewhere in this country and abroad. Tobacco is consumed in the form of an addition to *pan* and in that of snuff, *bidis* and cigarettes. The making of *bidis* and cigarettes is an important occupation in the Bombay Province.

Bidi-making can be described as a cottage industry in so far as no machinery or power is employed. But it is a cottage industry of a type which is also carried on under workshop conditions and as the number employed exceeds 9 in some cases, those concerns will come under our definition of "small scale factories". Thus for example in Nipani—the big tobacco growing *taluka* of the Province—there are two manufacturers of *bidis*, one of whom employs 125 workers and the other 135 workers, the total value of their output being Rs. 5 lakhs and Rs. 6

lakhs respectively. The *karkhandars* supply powdered tobacco to the workers as also the "tumri" leaves which are required for the preparation of *bidis*. The workers work at the shops of the *karkhandars* and are paid at the rate of 10 annas for 1,000 *bidis*. As a worker can, on an average, prepare 600 to 700 *bidis* a day, his average daily earnings amount to about 6 to 7 annas. The Nipani *bidis* have a wide market throughout the Province. In other urban centres, *bid*i-making is usually for local consumption and is very often followed either as a family occupation or as an occupation carried out under workshop conditions. *Bidi* workers are seated either in the gangway or in the backyard of a shop or a wooden loft is constructed for them in the shop itself. The workers are supplied with powdered tobacco by the *kharkandars* but the "tumri" leaves have, in many places, to be purchased by the workers themselves. For fear of adulteration, no out-work is allowed. Women as well as men work in this trade. The work is tedious and owing to the generally unhealthy conditions under which it is carried on, it has an adverse effect on the health and eye-sight of the workers.

Cigarette making is mainly a factory industry and it requires skilled labour and a large amount of capital. In this Province, there were 6 factories in 1931 manufacturing cigarettes and they employed 330 workers. The number of factories rose to 12 in 1932. In 1938 the number had come down to 8 and the workers employed were only 420 in number. Six of these 8 factories are located in the Bombay Suburban district, one in the City of Bombay, and one in Poona. The tobacco consumed is almost wholly of Indian origin and comes from Madras and Mysore, the tobacco grown in Nipani and Kaira not being of good enough quality for cigarette making. The relevant statistics relating to 1936-37 regarding the production and consumption of cigarettes in the Province is as under :—

TABLE 44.

	Lbs.
Production in the factories in the Bombay Province	10,51,890
Imports of cigarettes by sea	3,84,606
Imports of cigarettes by rail	17,29,858
Exports of cigarettes by sea	7,322
Exports of cigarettes by rail	6,73,960
Net consumption of cigarettes in the Province .. .	24,85,072

The small imports of cigarettes from abroad are mainly due to the prohibitive duty which is imposed on the imports of foreign cigarettes. Cigarettes imported by rail are the products mainly of two foreign owned and managed concerns, namely, the Imperial Tobacco Company and Messrs. Carreras (India) Ltd. Cigarettes manufactured by these concerns are of a superior quality as compared with the Bombay products mainly because of the better curing and storing of tobacco by these concerns and their employment of expert blenders. The local concerns had a number of complaints to make which we discuss later. It will be sufficient to note here that cigarettes imported by rail constitute nearly 70 per cent. of the local consumption.

88. *Industries dealing with chemicals and allied products.*—The main sub-groups into which this head is divided are manufacture and refining of vegetable oils, manufacture of matches and the manufacture of aerated waters.

The most important of these is the manufacture and refining of vegetable oils. This industry is practically spread over the whole of the Province and it is both a cottage and a factory industry, for oil is crushed today both by *ghanis* and by power driven mills. Oil crushing by *ghanis* is one of the most ancient cottage industries of India and used to furnish a valuable subsidiary occupation to the cultivators in the regions where oil-seed was grown. The manufacture of oil by *ghani* process is a simple operation, the wooden *ghani* being prepared by the local carpenter and the power being supplied by a pair of bullocks. The percentage of oil expelled from the seeds by this method is lower than in mills and the consequent larger proportion of oil that is left in the cake is alleged to detract its value for manurial purposes. This ancient cottage industry is now in a very bad way owing to the advent of oil mills in the Province itself and also because of the import of large quantities of mill crushed oil. The Committee's investigators reported from practically every district that the decline in the oil *ghani* industry was steep and precipitate. Groundnut seed is now very rarely pressed by *ghanis*. In Sholapur, Bijapur and Belgaum districts, the *ghanis* confine themselves to pressing *kardi* oil, about 2 maunds of *kardi* seed yielding about 18 seers of oil, and even these oil pressings are undertaken only when the prices of oil and oil cake go up. In Broach and Panch Mahals the *ghanis* press sesame oil and occasionally groundnut oil as well. In Ahmedabad *mhowra* oil is also pressed. A *ghani* worker can press about 50 to 60 maunds of seed in a day and during the whole pressing season his income averages to no more than Rs. 7-8-0 a month. Most of those who work on these *ghanis* have to supplement their income by working on the fields or by plying carts for hire.

The factory section of the oil crushing industry is an important unit in the industrial economy of the Province. Thus in 1938 there were

84 mills which gave employment to 4,571 persons. The distribution of this number in the various districts of the Province is as under :—

TABLE 45.

—	Mill.	Workers.		Mill.	Workers.
Bombay City ..	13	1,391	Satara ..	1	75
Broach and Panch Mahals ..	15	500	Dharwar ..	3	100
East Khandesh ..	17	723	Nasik ..	4	97
West Khandesh ..	12	420	Surat ..	1	267
Kaira ..	5	362	Belgaum ..	1	70
Ahmedabad ..	4	276	Bijapur ..	1	72
Sholapur ..	7	218			
			Total ..	84	4,571

The larger number found in some of the districts is due to the greater availability of oil-seeds in their areas. Groundnut is the chief oil-seed which is pressed in these mills. East Khandesh which has the largest area under groundnut has also the greatest number of oil mills. At Broach and Panch Mahals, both groundnut and sesame seeds are crushed. Most of the mills use expeller machines and a few use the rotary *ghani*. The output of oil and oil-cake is marketed both in the Province and abroad though the latter has recently suffered a decline due to lack of properly cleaned drums for storing oil. Some of the mills also undertake the manufacture of varnish and paints. The workers are paid daily wages, males getting 7 to 8 annas a day and females $3\frac{1}{2}$ to 4 annas a day. There is reported to exist very keen competition among the different oil mills just as there is among the rice mills and flour mills; this leads to a cutting of rates which not only injures the interests of the oil mills but reacts even more unfavourably on the *ghani* or cottage section of the oil industry. It may be added that in 1937-38 the Province imported about 700,000 gallons of oil costing nearly Rs. $9\frac{1}{2}$ lakhs. As against this, exports of vegetable oil from Bombay totalled 20 lakhs of gallons valued at nearly Rs. 33 lakhs.

89. *Match industry.*—The 'growth of the match industry' in the Province followed the doubling of the import duty on matches in 1921. By 1935, the number of match factories in the Province had increased to 14 and the number of persons employed to 5,950. In 1938, however, the number had fallen to 5 and the total number employed to 2,404. The reduction is mainly due to the growth of one of the larger match factories which has been able to eliminate a number of small concerns from the field. The five match factories in the Province produce in all 4·2 million gross of match boxes, of which 3·6 million gross boxes contain 40 sticks each, 0·3 million gross boxes contain 60 sticks each and 0·3 million gross boxes contain 80 sticks each. The Western India Match Factory claims 78 per cent. of the total output. In addition to these large scale concerns, recently two match factories on a cottage basis have been started, one in Belgaum which is a registered concern, manufacturing 5,125 gross boxes of 40 sticks, 200 gross boxes of 60 sticks and 200 gross boxes of 80 sticks and the other at Sinnar manufacturing 120 gross boxes of 40 sticks and 417 gross boxes of 60 sticks. It will be seen that match making is almost wholly a factory industry in our Province and also that production is largely concentrated in the hands of one factory. As the forest areas of the Bombay Province are reported to contain large quantities of the wood which is suitable for making splints and veneers we made inquiries from the match factories and were informed by them that this wood is not suitable, as splints made from the Bombay variety do not retain their natural whiteness but go red or black after some time. The match factories, therefore, get their supplies some from the Central Provinces and some from the Andaman Islands. It may be added that match making is an important cottage industry in the Province of Madras and the possibilities of its development in a cottage form in the Province of Bombay remains to be investigated. If it could be introduced in a cottage form, considerable employment could be provided in the districts of Kanara, Thana, Belgaum, and some areas near Surat.

90. *Confectioneries.*—There are a large number of bakeries scattered all over the Province. In the districts bakery is a small affair and the raw materials are usually purchased on credit from the local shopkeeper. Production is carried on a family basis, only the bigger bakeries going in for hired labour. Bread, biscuits, buns, etc., are produced and sold in the locality by house to house visits. Some of the bakery owners have arrangements with hotel and restaurant keepers to supply their regular requirements. Generally speaking each town produces its own requirements of bread. Biscuits are, however, imported on a large scale both from the big cities and from abroad. In big cities like Bombay, there are a number of bakeries which are run on a comparatively large scale. Thus the Bombay Labour Office found during the course of their investigation that out of 13 bakeries visited by them in Bombay, 2 were using electrical power and one mechanical power. Most of these big bakeries are either attached to big restaurants or are regular suppliers to the restaurants of Bombay. Even here, however, the

demand for biscuits is met to a large extent by the imported article. It may be added that biscuits and cakes to the value of about Rs. 27·2 lakhs were imported into India in 1937-38 and confectionery to the value of Rs. 18·8 lakhs, the share of Bombay in these being Rs. 7·9 lakhs and Rs. 7·2 lakhs respectively.

91) *Industries connected with hides and skins.*—According to the 1931 Census, there were 15,299 workers engaged in industries connected with hides and skins and hard materials from the animal kingdom. These were further classified as follows :—

TABLE 46.

Workers in leather	..	..	15,390
Furriers, brush makers, etc.	..	..	597
Bone, ivory, horn, shell, etc., workers	..	..	212

It will be noticed that the artisans following the two latter occupations are negligible in number. The really important class under this head consists of the workers in leather or tanners.

Tanners are found all over the Province, but the important tanning centres, besides Bombay City, are to be found in the following districts :—

TABLE 47.

				Number of workers.
Ahmedabad	..	..	..	3,593
Satara	..	..	..	1,756
Kaira	..	..	..	1,576
Bijapur	..	..	..	1,379
Surat	..	..	..	976
Dharwar	..	..	..	846

The scope for the tanning industry in our Province is considerable. The estimated raw hides and skins available every year for tanning, are cow and bullock hides 1,124,302, buffalo hides 1,441,001, and goat and sheep skins 2,000,000. Ninety per cent. of the raw hides are of dead animals and only 10 per cent. from slaughtered stock, whereas skins are almost wholly of slaughtered stock. The tanning of skins is, therefore, mainly an urban industry while the tanning of hides is both a rural and an urban occupation. The tanning materials used are largely vegetable materials found within the Province such as *turwad*

bark, *babul* bark, myrobalan, *Ain* bark, *Acala*, *Jambul* and *divi-divi*. The collection and distribution of the tanning materials is a trade in itself, the rights for the collection of such barks being auctioned by the Forest Department. These materials are thus mostly obtained from the Government forests.

Tanning in the Bombay Province is both a cottage industry and a factory industry. In fact there are three types of organisations : (1) the cottage industry as it is carried on in villages, (2) small tanneries as they are found in a number of towns and (3) the big tanneries found in cities which are classified as factories. The rural cottage industry is not run on an organised basis. Every *taluka* town and nearly all villages have such tanneries. These tanneries are sometimes only a few large pots buried in the ground without even a roof over them in which the proprietor turns out a few tanned hides per month. The cost of a pit is estimated to be Rs. 7 and the village tanner on an average hardly tans 5 hides a month. The pits are generally located on the outskirts of the villages, in fact the water which is used is often muddy, and during summer there is a dearth of even this muddy water. Both these factors have their inevitable effect on the quality of the tanned hides that are produced. The tanning is done by the crude bag processes and the tanning materials are not factory made but are collected from adjoining villages. In fact the tanning materials used vary from place to place according to their availability. The tanners of Dharwar use lime, *babul* bark, *harda* and *divi-divi*, while those of West Khandesh work with lime, *ghatbhor* and *turwad*. The finished product is sold to the local *chambers*. The village tanner usually works alone and combines with his tanning agricultural labour when he can get it.

Tanners of a more organised kind are to be found in urban areas. There are about 15 tanneries employing 937 workers in the Province. Of these ten are small concerns ; these tanneries are controlled by capitalists who use hired labour. Some of these tanners work the skins and hides for export and others cater to the local market. The capitalists generally enter into an agreement with butchers and dealers in raw hides and skins. In many cases they give advances to the dealers and thus ensure a regular supply of raw materials. Almost all these tanners employ the old methods of production. The hides and skins meant for the export market are tanned by the vat method and those for internal consumption by the bag process. The export product is known as "half tan" and it is estimated that "half-tans" to the value of more than Rs. 17 lakhs is exported every year from the Province. It is stated that nearly 4 to 5 thousand persons are depending on this industry for their livelihood.

Excluding the ten small tanneries which have been included as factories because of the extension of the Factory Act, there are five big tanneries in the Presidency which can be truly described as large scale concerns and they use power-driven machinery. Of these, two are in Bombay City and Suburbs, one in Ahmedabad, one in Ahmednagar and one in Sholapur. Locally available raw hides are used by these concerns and this supply is augmented by imports from other Provinces and from Iran,

Aden and South Africa. The skilled labour employed is mostly of Madrasis. One of the factories exports full chrome uppers to London while some others prepare finished sole leather and finished bark-tanned uppers for export. The total number of men employed in these tanneries is 350. The leather which is not exported is locally consumed for the manufacture of shoes, *champals*, water bags, leather bags, etc. There is a good pickers industry in Ahmedabad where it is reported that pickers to the extent of Rs. 3½ lakhs are being manufactured every year. There are also a few leather workers in Ahmedabad who prepare roller skins for the local mills. In Kaira there are workers engaged in the manufacture of leather washers for the local ginning factories. It may be pointed out that the textile industry requires large quantities of articles like pickers, roller skins, etc., the manufacture of which requires a fine quality of leather and considerable quantities of these are being imported from abroad. It seems, however, that the quality of the leather still requires improvement, as large quantities of pickers, roller skins, etc., which require fine leather for their manufacture are still being imported from abroad. When it is recalled that in 1937-38 this Province imported tanned hides and skins worth more than Rs. 9 lakhs and leather articles other than boots and shoes worth about Rs. 33 lakhs, it will be seen that there is a great scope in the Province for the manufacture of leather goods, other than those which form part of toilet and dress articles.

Of the 598 furriers, brush makers, etc., 507 are in Bombay City. Theirs is, therefore, primarily an urban industry. The bone, ivory, horn, etc., workers are, according to the Census, found mainly in Ahmedabad. The investigator came across 3 families at Amalner who were engaged in making combs not from horns but from the black sisal wood of East Khandesh. From Ratnagiri it is reported that the making of fancy articles from the bison's horn has practically ceased to exist. There is no doubt, however, that there is considerable room for articles made from bones, horns, etc., as in fact the Province is now importing substantial quantities of such articles.

92. *Furniture Industry.*—According to the 1931 Census, 4,051 persons were working as cabinet workers, carriage painters and upholsterers. The two latter of these groups numbered only 481 persons.

The furniture industry is largely an urban industry. Apart from one mechanised *karkhana* organised on a big scale in the City of Bombay, most of the other furniture shops are run on a handicraft basis. The Bombay factory employs daily nearly 325 workers and has power driven machinery of the value of Rs. 1,25,000. Its annual turnover is estimated at Rs. 3.7 lakhs. The other establishments both in the city and the mofussil are small in size and are owned and managed by *karkhandars*. Workers are engaged mostly on a contract basis and own the tools and instruments which are simple and give slow work. The finished product is marketed by the *karkhandars* either by maintaining a show room or by personal canvassing. Furniture is not only sold outright but is also given on hire. Furniture making requires a good deal of capital as the

teak wood has to be purchased a year or two earlier for seasoning purposes. Hence it is that the industry is organised on a *karkhandari* basis and little scope is left to the independent small artisan.

93. *Dairy industry*.—According to the cattle Census of 1934-35 the milch cattle in the Province consists of 2·0 million cows, 1·2 million cow buffaloes and 1·7 million sheep. The Deccan districts which have large areas of fodder have the highest number of milch cattle, but the Kaira district has the highest number of cow buffaloes in the Province.

The total annual production of milk in the Province is estimated by the Live-stock Expert to be about 12,500 lakhs lbs. According to his estimates about 40 per cent. of this goes to the manufacture of ghee and the remaining 60 per cent. is distributed roughly as follows :—

Manufacture of table butter	..	7·5	per cent.
Manufacture of desiccated milk	..	26·0	per cent.
Tea in rural and urban areas	..	13·5	per cent.
Consumed as milk	..	13·0	per cent.

Milk products are mainly produced on a small scale but there are a few big dairies, some of which also manufacture table butter and casein. The average production of butter in the principal centres of Ahmedabad, Anand, Bombay and Poona is estimated at 12,000 lbs. per day. At present the whole of the skimmed milk is stated to be turned into casein by a crude process. From about 110,000 lbs. of milk, 8,500 lbs. of cream, 6,800 lbs. of butter and 35 maunds of casein are reported to be obtained. The casein is mostly exported but it fetches a low price as it cannot stand competition against the more scientifically produced casein of Argentine and France. As casein is used in veneer and plywood mills, match works, leather industry, textile industry, etc., there should be ample scope for the development of a casein industry in the Province. Alternatively the possibility of converting the available skimmed milk, which forms, it is understood, the basis for most of the infant and invalid foods now being imported into India to a considerable and ever increasing extent, should be seriously examined. The advantage of converting an agricultural waste into wholesome food for domestic consumption in preference to exporting it from the country as relatively cheap industrial raw material cannot be certainly gainsaid.

Ghee is produced for export mainly in the districts of Kaira, Khandesh and Belgaum. From Mehmedabad *taluka* alone about 15,000 tins of ghee each tin containing 38 seers are sent out annually to Surat, Broach and Baroda. Local dealers at Mehmedabad purchase ghee from village merchants, who, in turn, obtain it from shepherds and cultivators. On the whole, looking to the important part ghee plays in Indian diet and the low consumption of milk in India to-day, there should be ample room for the expansion of the dairy industry in this Province.

94. *Soap industry.*—Soap-making is both a cottage and a factory industry. The cottage section of the industry is to be found in villages and small towns and it specialises in the production of laundry soap. The manufacture of laundry soap on a crude basis does not require any technical skill and the villagers prepare soap either for their own use or for the local market. This is particularly so in the districts of Ahmedabad, Poona, Satara, Broach and Panch Mahals. The raw materials used are lime, vegetable oils, washing soda and silicate of soda. Soap-making on a cottage basis is a seasonal occupation which is not carried in the monsoon. There are also a few cottage factories which employ hired labour and pay daily wages at the rate of 4 to 6 annas a day. In the Ahmedabad district Prantij is a big centre for this type of soap industry, where five big *karkhandars* are reported to manufacture soaps worth more than Rs. 2 lakhs a year. Besides these, there are also many small cottage workers. Prantij is well situated for the soap industry, as it gets *Mhowra* oil from Modasa and has such an important market like Ahmedabad within easy reach by road. At Ahmedabad itself, there is considerable local manufacture of laundry soap. Poona is another important centre of the cottage section of the soap industry, where there are both big *karkhandars* and cottage workers. The soaps from Poona find a ready market in Sholapur, Belgaum and Kolhapur. The production at Satara is on a small scale while in the Broach and Panch Mahals district there are a few manufacturers producing on a large scale. Even in the City of Bombay there are not a few small *karkhandars* who chiefly prepare washing soaps. The cottage industry of soap-making thus appears to be wide spread in the Province. It is interesting to note that the efforts of these cottage workers and *karkhandars* to prepare and market toilet soaps have not proved successful.

The big soap factories are located in the City of Bombay and manufacture both toilet and laundry soaps. Some of these factories also undertake the production of other toilet preparations like scented oils, pomades, face powders, etc. No statistics regarding their production are available but it would seem that a good proportion of the fall in the foreign imports of soaps is traceable to the production of these factories. It may be noted that as in case of other factories, here too, a considerable part of the indigenous output is due to the establishment within the Province of foreign owned and foreign managed concerns. It may be added that in 1937-38, India still imported soap worth Rs. 24·5 lakhs. Of this, the share of Bombay Province was Rs. 7·4 lakhs, being made up of toilet soap worth Rs. 6·5 lakhs, laundry soap worth Rs. 0·4 lakhs and soap of other sorts worth Rs. 0·5 lakhs.

95. *Fruit Canning.*—In spite of the considerable area that there is under fruits in the Province, there is no well developed fruit canning industry in the Province. Most of the fruits are sold as fresh fruits and marketed either locally or as in the case of mangoes and bananas exported outside the relative districts. Of recent years mangoes are being exported to foreign markets as well. There are a few fruit canning

concerns in the Province but they are run more or less on a small scale basis, except one big factory which is situated at Bombay. This factory works for about six weeks in a year from May to June during the mango season and gives employment to 150 persons. The mangoes are obtained from Ratnagiri, Thana and Bulsar. Tins are obtained from England. The products are mango pulp, slices, jam and squash. Recently the factory has taken to canning other fruits also like plums, pears, tomatoes, etc. The market is mostly foreign.

The canneries at other places in the districts are run by small *karkhandars*. In Poona, one of these *karkhandars* prepares jams and jellies from mango, guava and various other fruits. His total sales are reported by him to be worth not more than Rs. 2,000 a year. In Kanara where the mango crop is abundant there is a cannery at Karwar which specialises in canning mango pulp. Last year this cannery, where the processes are mostly by hand, is said to have manufactured about 36,000 tins of mango pulp and 250 tins of pine apple slices and to have utilised nearly 2½ lakhs of mangoes and 350 pine apples for the purpose. In the case of this concern also the market for the canned fruit was foreign. The cannery employs 30-35 workers in the mango season and they are paid wages varying from 4 to 6 annas. Considering the very large imports of tinned fruits into the country (imports into the Province were worth Rs. 3.5 lakhs in 1937-38), it is very surprising that our local producers have to turn to foreign markets for the disposal of their produce

96. *Drinks : (1) Aerated waters.*—Although there are scores of aerated water factories spread all over the Presidency, most of them have very small plants and employ only 1 or 2 workers each. As such they do not come under the Factories Act and it is extremely difficult to get an idea either of their number or of that of the workers engaged in the industry. The number of registered factories, however, was 12 in 1938 and of these 10 were in the Bombay City and 2 in the Ahmedabad district. These factories employed 414 workers.

The aerated water works in the mofussil are generally owned by restaurant keepers. They go in for a machine worth about Rs. 200 and employ a boy or two to fill in the bottles. The raw materials of the industry are soda bicarb, essences, sugar, colours, etc., and these are locally purchased. The aerated water bottles are sold either in the shop or hawked around in the urban areas. Naturally the demand is great in summer and lowest in winter when tea and coffee are more popular. It is stated that the average sales of a soda water shop in an ordinary town are worth from Rs. 20 to Rs. 35 per month.

Conditions are different in the City of Bombay. Here there are some big factories employing from 50 to 100 workers. The equipment of these factories is costly and one establishment employing 80 workers has an equipment worth Rs. 2 lakhs. Apart from the big demand for aerated water drinks in a city like Bombay, some of the factories are also regular suppliers to the big hotels and clubs in the City. Most of

them use saccharine instead of sugar in their preparations. The majority of the factories sell their products through dealers. Well known brands like Rogers or Dukes command a wide market over the Province.

97. (2) *Fresh Fruit Drinks*.—Recently there has been started in the City of Bombay a factory for the preparation of fresh fruit drinks without the use of chemical preservatives. The Company is run on a partnership basis and uses fruits like *mosambies*, grapes, lemons, etc. in their respective seasons. Each month about 1·25 lakhs of bottles are prepared and marketed throughout India. It is reported that there is a large demand for fresh fruit drinks and properly developed, it may afford an additional occupation to fruit growers in villages bordering on urban areas.

98. *The Gold and Silver Thread Industry*.—According to the Census of 1931, 3,872 people were engaged in this Province in the production of “laces, crepes, embroideries, gringes, etc. and insufficiently described textile industry”. Of these 3,215 people were in the Surat district, the two other prominent centres being Bombay City and the Nasik district. These latter had 445 and 68 persons respectively engaged in the industry. The Committee’s investigator, however, reports that the production of *kasab* at Surat alone gives employment to nearly 5,000 workers; *tiki* and *chalak* are produced by an additional 1,000 workers. Apart from this, there is the well known gold and silver thread industry of Surat which surprisingly enough, finds hardly any mention in the census returns. There is no doubt that this industry gives employment to not less than 10,000 persons, several estimates in fact placing this number above 15,000.

The gold and silver thread industry is both a cottage and a small scale industry. A dozen different kinds of workers help to make the final product. At a few places, electricity is used for power. Raw materials are generally supplied by the merchant and the work is done on a contract basis. Silver ingots are first drawn into thick wires of 20 feet per tola by factories with special wire drawing machines. The charges are Rs. 1-4-0 per 100 tolas of the finished silver thread. “The 20 feet per tola wire” is then handed over to another factory for drawing wire to the thinness of 2,400 feet per tola. From this it is sent to flattening prior to spinning. This is paid for at the rate of Rs. 3 per 100 tolas of silver wire of 1,200 feet per tola. The spinning of silver thread is then done in the merchant’s premises or the work is given to petty contractors who charge Rs. 25 per 100 tolas of thread which usually measures 200 yards per oz. The next stage is gold gilding, which is done by small factories who charge from Rs. 12 to 18 per 100 tolas of silver wire. The manufacture of *kangri*, *salima*, etc., is done by petty contractors with crude spinning wheels worked by hand at rates varying from Rs. 3 to Rs. 4 per tola. If, however, finer thread weighing 1,600 to 3,000 yards per oz. is required the usual practice is to send the silver and gold ingots to Benares and get the work done there.

The gold thread thus manufactured is used in the production of *kinkhabs*, caps, laces, embroidery, etc.,. It is estimated that the production of gold and silver thread at Surat alone is worth nearly Rs. 1 Crore. The finished product is mostly consumed in the U. P. Punjab, Bombay and the Indian States. The system of sales is such that long credits are given and it takes nearly 6 months for the manufacturer to get back his money ; hence the need of a comparatively large working capital. The wages of the labourers vary between 6 annas to Re. 1 per day, according to the nature of the work.

Allied to the gold and silver thread industry is the production of *tiki*, *chalak*, *kasab*, *kinkhab*, etc. All these are produced on a handicraft basis. Work is done mostly by outworkers for dealers. The gold and silver thread is supplied by the dealer and a wage of Rs. 5 per 100 tolas of the finished product is paid. The net income of the outworker comes to about Rs. 15 per month ; labourers employed by the outworkers obtain Rs. 10 per month. The total production of *tiki* at Surat is estimated to be about 20 lakhs of tolas, worth about Rs. 13 lakhs. The instruments required to produce *tiki* are all locally made.

In the production of *chalak*, about 500 people are engaged at Surat and about 50 establishments use 1,000,000 tolas of silver valued at Rs. 5 lakhs. The work is generally done with the help of $\frac{1}{2}$ H.P. rolling machine for pressing the wire and locally made *chalak* preparing machines. Production is generally to order.

In the *kasab* industry there are said to be 500 *karkhandars* at Surat employing 5,000 workers. The annual production of *kasab* products is estimated as follows :—

Pure <i>kasab</i>	..	..	..	Rs. 5 lakhs.
Imitation <i>kasab</i>	..	..	..	Rs. 5 to 7 Lakhs.
<i>Kingi</i> , <i>Giki</i> , etc.	..	..	..	Rs. 5 lakhs.
Imitation <i>Giki</i>	..	..	..	Rs. 10 lakhs.

The raw materials of this industry are silver, silk, *khotbar*, yarn and gold. All these are locally purchased.

As for *kinkhab*, there are nearly 300 workers in this branch of the industry. This trade is in a depressed condition and people are slowly leaving it as it has ceased to be remunerative. The work is mostly carried on on a family basis, even children helping their parents in preparing intricate designs. The main tool is a pit loom worth about Rs. 35. For preparing a piece of *kinkhab* (5 yards \times 27"), generally 10 days are required. On an average an independent worker weaves *kinkhabs* worth Rs. 500 a year. The finished product is mostly sold to the dealer, who then sends them to distant countries like Iraq, Egypt, Aden, etc., where they command a ready sale. As the raw materials required for this trade are costly, the working expenses become heavy with the result that most of the artisans are heavily in debt to the *sowcar*.

99. *The Sandalwood and Ivory Carving Industries.*—The Census returns do not separately state the numbers of people engaged in the sandalwood and ivory carving industries. The workmen engaged in the preparation of articles (except buttons) of ivory, bones, horns, shells, etc., however, are said to number 212. Of these Bombay City had 65, Ahmedabad 81 and Surat 18. As for the sandalwood carvers, information supplied to the Committee indicates that there are 104 sandalwood carvers in North Kanara and 18 in Surat. Roughly 30 per cent. of the Kanara sandalwood carvers also know ivory carving. At Surat there are 20 ivory carvers as distinct from sandalwood workers. Poona has 2 ivory carvers.

The sandalwood and ivory carving industries occupy an insignificant position, from the point of view of numbers employed. But they form a part of the great art-craft industries of the Province. The articles commonly produced are caskets, boxes, combs, fans, small images, ivory bangles, ivory handles of penknives, billiard balls, etc. The work is done on a cottage basis. The tools employed are primitive and are mostly all locally made. Excepting a few *gudigars*, almost all these workers follow the old methods of production. Even the designs are old-fashioned and out of date, in many instances products of the same kind being produced by most of the carvers. Thus there is no variety and for a long time past there has been practically no new developments in the art itself. In Kanara, there are no middlemen in this trade and the producer has to market his goods either by street to street hawking or by personally visiting urban centres like Poona or Bombay once in a year or two. Conditions are slightly different at Surat. There the artisans generally depend on dealers for the disposing of their products. On an average a Kanara artisan earns from Re. 0-10-0 to Re. 1-0-0 per day and the Surat artisan about 12 annas a day.

100. *Glass Works.*—There are not many glass works in the Presidency and much of the glass products consumed are imported from Belgium, Japan, Germany, Czechoslovakia, etc. Since the beginning of the last War, however, a few enterprising people have taken to this industry and by 1932, when the Indian Tariff Board reported on the industry, there were in the Presidency 3 factories producing bangles and false pearls and six more producing other types of glass products. According to the latest Factory Report for 1938, there are six glass factories in the Province employing about 700 workers. The biggest glass factory is, however, the Ogale Glass Works which is situated in the Aundh State, Satara district. This factory manufactures glassware, hurricane lanterns, stainless steel articles and enamel boards to the extent of Rs. 3·4 lakhs per annum. It has three departments, namely, glass, lantern and enamelling wherein are employed 333, 73 and 81 workers respectively. The raw materials used for glassware are sand, lime, saltpetre, dioxide, soda and borax, of which the last two are imported from abroad. Stainless steel sheets and chemicals have also to be imported from abroad.

Apart from this factory, there are a small number of glass works spread all over the Province. They prepare rough bangles, small pieces of glasses for decorative purposes, beads and glasses of various kinds. The articles are produced generally by crude hand processes and the finished product is of a very inferior type. The bangle making industry especially is now in a decadent condition though it is still carried on to some extent in the Satara, Thana and Bijapur districts.

A bangle making *karkhana* gives employment to some 6 to 8 persons. The tools employed are very cheap and cost about Rs. 4. All the processes are carried out by hand. The raw materials used are mostly broken soda water bottles, burny glass and coloured dyes. The broken pieces of soda water bottle are used to prepare cheap bangles which are sold at about Rs. 1-8-0 to Rs. 2 per thousand. The work in a bangle making concern is extremely arduous, hence such factories do not work for more than 20 to 22 days in a month. The artisans are paid from Re. 0-12-0 to Re. 1 per day and the bangles are sent to such distant places like Madras, Mysore, etc. It may, however, be stated that the bangles produced locally are rough and cannot compete with the imported ones as the latter have a superior finish and lustre. The *karkhandar* of a bangle factory earns from Rs. 20 to Rs. 25 per month; and the other workers from Rs. 6 to Rs. 10 a month.

101. *The fishing industry.*—According to the Census of 1931, 54,666 workers were engaged in fishing and pearling in the Presidency. As pearling is an insignificant industry, all these workers may be presumed to do fishing and allied work. The important areas in this Province where this industry is carried on are as follows:—

TABLE 48.

Ratnagiri	16,006
Thana	7,028
Kolaba	6,745
Bombay and Suburbs	6,616
North Kanara	6,507

The total quantity and value of fish caught in the Bombay Province were estimated by Mr. Sorley in 1932 at about 50,000 tons and Rs. 73 lakhs respectively.

Fishing is mainly a seasonal industry, the brisk season being from September to April. The industry is in the hands of both independent fishermen and rich traders in fish. The scope for the work of the latter has recently increased with the plying of a few launches between Bombay harbour and Kanara.

In the interior centres, which are at a distance from big consuming markets, the work is mainly in the hands of the independent fisherman. His nets are worth about Rs. 15 to Rs. 20 and are usually prepared by the fisherman himself from jute thread purchased locally at Rs. 4 to 6 per maund. At many places the fisherman works in co-operation with brother fishermen. Thus, five to six fisherman work on a boat and the owner of the boat is paid a share of the day's catch. The fish thus gathered is sold by the fisherman's wife in the local fish market. At many places the fish is bartered for grain. On an average a fisherman earns about Rs. 5 to Rs. 10 per month. In the farther interior, *bhils* and other tribes use crude methods of catching the river fish.

Conditions, however, are in many respects different in the urban centres. Due to either the existence of a fish curing yard or a large consumer's demand, there are opportunities of earning a good income by this trade; hence the appearance of the middlemen on the scene. Some of the middlemen even own the boats and nets. Many of them have invested Rs. 15,000 to Rs. 40,000 in the trade. Thirty to forty workers are bound by contract to work for the middleman during the fishing season and as an inducement an advance is made. During the working season each fisherman is given a ration which is enough for sustenance. The catch is the property of the middleman and is marketed or cured by him through a different set of people. At the end of the year a balance is struck. First, the expenses incurred on the repairs of boats and nets and the provisions supplied to the workers are deducted. The remainder is divided into equal shares, there being as many shares as the number of workers plus two more shares against the investment on boats and nets. At other places, the boat is owned jointly by the crew, and a share is set apart from the catch from which repairs and other requirements are financed. This admirable system is found at work in one of the villages near Satpathi in the Bassein *taluka*. It may be added that inland or tank fishing is not exploited to any considerable extent in the Province.

102. *Fish curing*.—Allied to fishing is fish curing. When in 1910 Mr. Lucas made his report on fishing in the Bombay Presidency there were 30 fish curing yards and the quantity of fish brought to be cured at these yards was 247,717 maunds. The number of yards had increased to 33 at the time of Mr. Sorley's report and the quantity of fish brought to the yard had gone up to 267,181 maunds. Last year there were 32 curing yards wherein 224,387 maunds of fish was taken for curing. Of these 18 were in the Ratnagiri district and 14 in the Kanara district. The amounts of salt issued in the two districts were 31,489 maunds and 31,475 maunds respectively. This salt is given at a concessional rate of Re. 1 per maund to help the industry.

Fish curing is only a seasonal industry, the working season being November to March. It requires a fairly big amount of capital and is in the hands of well-to-do fishermen or even ordinary merchants. At certain centres it is being dominated by outsiders. At Majali, in the North Kanara district, for instance, the investigator of the Committee

reports that out of the 23 curers of fish at the centre, 15 were *Moplahs* from Malabar. These foreigners regularly visit the curing yards at the beginning of the working season and return to their homes as soon as the season is over. Usually the fish caught is cured with the help of hired labour mostly consisting of fishermen and fisherwomen. The processes adopted are either the wet or the dry process. The bulk of the fish cured consists of sun dried and dry-cured salted fish. This is consumed within the Province, the sale being effected either through wholesale merchants or in the mofussil by the curers themselves hawking the product. The quantity of fish cured by wet salting is comparatively small and almost all of it is exported to either Madras or Colombo in ships mostly owned by the traders in fish. It may be added that the prices of the cured fish, wherever sold, are determined by market conditions at Colombo, as that centre takes a large supply of dried fish.

103. *Poultry farming*.—Though most of the villagers keep poultry, they maintain them for their own use. Poultry farming as an industry has not become very popular. The reason may be that the higher castes and the moneyed classes have a religious prejudice against keeping poultry. The farmers and the inferior castes, being largely illiterate, have no enterprise and are satisfied if their own wants are met. Thus keeping poultry has more or less remained only as an item of meeting family necessities and has not come to be looked upon as having the potentialities of an industry. Recently, however, due to the large profits earned by some of the more enterprising farmers, poultry farming is attracting more attention. The Agricultural Department has also of recent years been popularising poultry farming by grants of money and of pedigree poultry. The most popular breeds are reported to be the White Leghorns and the Rhode Island Reds. The hatching season for most parts of the Province commences from October and ends by March. At one of the farms recently started in Kolaba district there were about seven incubators and fifteen brooders costing Rs. 80 and Rs. 15 each respectively. It was stated that it took 21 days for the hen and 28 days for the duck for incubation of eggs in the artificial incubators. The eggs are usually sold at 6 annas a dozen and the birds at Rs. 6 a dozen. The village improvement committees in the different districts are doing good work in the popularisation and the supply of good breed of poultry to the villagers. The details supplied regarding the Yellow Egg Sale Society in the Satara district show encouraging reading. This Society had in 1928 supplied 22 pure breed cocks to its members. The total number of poultry maintained by the farmer—members of the Society was 1,490 hens, 470 cocks, 460 pullets and 1,333 chickens and the yield of eggs per week was reported to be 785. The average income of an agriculturist from poultry was stated to be about Rs. 5 per month. The establishment of this Society which was started in 1935 is also said to be responsible for better organising the local egg-market, and consequently assuring the agriculturists higher prices for their eggs. The Society has introduced new methods of grading and carried out improvements in the breeds of the poultry. Evidently, there is ample scope in the Province for many more societies of this

kind ; what is required is local organisation and ample State help. One important handicap which hinders the development of this industry on a large scale is the high death rate in the poultry. The Agricultural Department has been carrying on experiments for reducing this death rate and it is reported that by the serum method the death rate has now been reduced by nearly 75 per cent. It is also reported that in the case of some 20 villages, the death rate was reduced by rearing the hens in the open ground. The possibilities offered by this industry as a subsidiary occupation to our cultivators are immense and need careful developing.

104. Besides the industries mentioned above, there are a number of small industries such as paper making, envelope making, *udabatti* and scents preparation, *kumku* preparation, cap making, carpet weaving, preparation of ink, preparation of dyes, preparation of *tulsi* beads, ayurvedic medicines, preparation of wooden toys, etc., which we have not dealt with in this chapter for reasons of space.

105. Finally, we must repeat that the above survey is only a brief account of some of the existing industries of the Province. In the next chapter we proceed to examine the difficulties and handicaps under which the various industries are suffering.

CHAPTER VI.

HANDICAPS AND DIFFICULTIES SUFFERED BY THE INDUSTRIES OF THE PROVINCE.

106. *General.*—We have given in the preceding chapter a brief account of the state of the existing industrial structure of the Province, especially of that part which consists of cottage and small scale industries. We propose to discuss in this chapter the various difficulties and handicaps from which these industries are suffering to-day, our account being based largely on the information we have collected from those who are engaged in these occupations. It may be pointed out that the difficulties which are experienced by the different small industries are to a large extent common in character. We have, therefore, refrained from discussing separately the difficulties of each individual small industry but instead dealt with their difficulties collectively. We shall take the cottage industries first and then the small scale industries.

107. *Difficulties of Cottage Industries.*—The main difficulties experienced by our cottage industries can be conveniently dealt with under the following heads :—

- (1) Raw materials.
- (2) Technique of manufacture.
- (3) Finance.
- (4) Marketing.
- (5) Taxation.
- (6) Other difficulties.

108. *Raw materials—Difficulty of obtaining adequate supplies.*—One of the most common complaints we came across was about the difficulty of obtaining supplies of raw materials. Thus, it was stated by the artisans engaged in the tanning industry in a number of districts that good quality hides were bought up by rich middlemen on behalf of big city firms and exported, with the result that the local tanners were left with the poorest qualities of hides. At one place, for instance, the investigator was told that the big tanning factory had arrangements not only with most of the butchers in the cantonment for supply of all their hides but had also monopolised the supply at a neighbouring town. The local tanners thus only got what the factory did not require. This had naturally an adverse effect on the quality of the leather produced by these tanners; the result was that the local workers became dissatisfied with the leather obtained by them locally and started purchasing leather from outside or alternatively they beat down the prices to the detriment of the tanner. Similarly, the wool weavers of the Dharwar, Bijapur and Sholapur districts complained that the best part of the local supply of wool was bought up by agents of Indian woollen mills and sent out of their territory with the result that only the worst qualities of the local supplies were left for them. Thus, unless they are prepared to pay exorbitant rates, they are not

able to get good wool. Further, since the wool shearing season is twice a year, the wool has to be stocked and this means a considerable investment of finance which the small wool weavers are naturally not in a position to furnish. In fact in Bijapur some of the wool weavers who had taken to weaving on improved types of looms had been compelled to take up cotton weaving as they could not get adequate supplies of wool. Other wool weavers are naturally reluctant to go in for improved appliances when they are not able to get raw materials sufficient to keep them engaged for more than three months. Similarly the *ghani* owners find it very difficult to stock enough supplies of oil-seeds because of the financial and storage difficulties that are involved. The *ghani* workers of the Dharwar and Sholapur districts laid particular stress on this point. The oil mills had captured their trade in groundnut oil but in *kusbi* and *kardi* oil there remained a small market for them; but here also the difficulty of purchasing and storing oil-seeds at favourable prices came in their way. This difficulty of obtaining adequate supplies of raw materials was not felt to an equal extent in the case of the handloom weaving industry, but these were common to a number of the smaller cottage industries. For example, the sandalwood carvers of the North Kanara district were not given enough quantities of sandalwood per head till very recently by the Government Department in charge of the Kanara forests. Moreover, the present system of giving out the collection of forest products by contract and auction results in the artisans of forest areas not obtaining sufficient supplies of minor forest products which they can utilise for different industrial purposes. This difficulty is particularly noticeable in the village tanning industry. Previously the tanners used to collect free from the forests the different kinds of nuts and barks used for tanning purposes. This supply has now been lost to them, as the right to collect these nuts and barks are auctioned either by the Government or by the contractors who have purchased the standing trees. The system of disposing of the right to collect forest products by auctioning it to the highest bidder has also evoked criticism from the larger manufacturers on the ground that it makes for uncertainty about the continuity of supply. Thus, for instance, a prominent ship-building firm in the Ratnagiri district has suggested that it is desirable to fix a reasonable price and give the right to collect forest produce to a given customer rather than risk frequent changes in the personnel of the contractors by the system of auction. In addition it has been pointed out that contractors are not interested in the minor forest products to the same extent as the artisans; in order that our resources of these minor forest products may be utilised to the full, it is desirable that departmental arrangements should be made for their collection.

109. Taking our cottage industries as a whole, it seems clear that due to the competition of the larger producers as also because of the lack of financial resources our artisans and cottage workers do not get raw materials of good quality and in some cases they do not get enough supplies even of the inferior quality of the raw material.

110. *Raw materials—Higher prices paid by artisans.*—The second great difficulty which the artisan experiences and one which it may be stated is common to all the cottage industries is the comparatively high price he has to pay for the raw materials which he requires in his business. We have already seen that even where supplies of raw materials are locally available, the artisan finds difficulty in obtaining his requirements. Where they have got to be obtained from abroad or from the cities and large towns, the raw materials inevitably pass through the dealer and when this happens, the prices are invariably raised for the artisan. Thus the handloom weaver has to pay a higher price for cotton yarn because he has to meet the transport charges and the merchant's profit. For example, one pound of 40s grey yarn (Indian) which cost As. 9 and 3 ps. at Bombay was sold for As. 9 and 9 ps. at Belgaum, As. 10 at Gadag and As. 10 and 6 ps. at Yeola. In addition, in many handloom weaving centres the dealer imposes the onerous condition that the buyer of the raw material should dispose of his finished product only through him. Complaints to this effect were received from the handloom weavers of Guledgud, Kamatgi, Gokak, Sholapur, Valsang, and some centres in the Nasik district. Similar charges against dealers have also been put forward by the calico printers of Chirne and Malpur in the West Khandesh district and by the basket-makers in the Thana and Poona districts. It is also worth noting that in the Thana district whereas bamboos were sold by the middlemen at 4 annas each, the Masoli Rural Uplift Committee—a non-official organisation—were able to sell them at 3 annas each. It is clear, therefore, that where the artisan has no direct dealings with the producer of raw materials, the intervening middleman naturally takes his toll.

111. *Raw materials—Unreliable quality of goods.*—The third difficulty which the artisan meets with is the lack of reliability in the quality of the goods sold by the middleman. This is particularly in evidence in the handloom weaving trade where the artisan often gets yarn of counts actually inferior to what it is alleged to be by the seller. In fact, the Ahmednagar District Industrial Co-operative Association, pointed out in evidence that one of their contributions to the promotion of the handloom weaver's welfare is the sale of guaranteed yarn. Complaints of fraudulent practices in the sale of yarn were made at a number of centres. Thus in the case of dyed yarn, the weaver is often deceived and gets supplies of yarn dyed with loose colours with the result that the colouring fades quickly and leaves a bad name for the handloom weaver's products. The artisan has to put up with this bad quality as he has nowhere else to go to purchase his raw materials and moreover nobody else will give him credit.

112. *Raw materials—Poor quality.*—It is not only the middleman who is responsible for the poor quality of the artisan's output the original supplier of the raw material is himself to blame in a number of cases. Thus for example, the quality of hides available for the local tanner is very often affected by the branding of the cattle before slaughter and by the methods of slaughter which do not pay sufficient attention to the

need for preserving the quality of the hide. Sometimes, the artisans are to blame. Thus; the leather workers in a number of places complained that the quality of the leather supplied to them by the tanners was poor partly because of the defects of the hides mentioned above and partly on account of the poor tanning materials used and the crude methods employed by the local tanners. In many cases these defects lead to the diversion of local demand to outside centres. Thus, for example, in Ahmedabad where there is a good pickers industry, buffalo hides are imported from the Punjab and the United Provinces, partly because the local hides are dried on the ground and thus get heavy with mud while the United Provinces hides are dried on frames. Then again, in Nadiad, where leather washers for ginning factories are manufactured, American chrome leather on which there is an import duty is used in preference to local supplies. Foreign sources are tapped for silk yarn, not so much because of the poor quality of the local supplies as on account of the higher prices of the latter. In the case of woollen yarns the poor quality of the local raw wool leads to a preference for the foreign article which means that higher prices have to be paid by the wool weaver; where he depends on the local supply, the poor quality of the wool gets reflected in the quality of his output and is followed by a natural fall in demand. The imported wool has also given rise to a factory woollen industry which competes with the cottage worker.

113. To sum up the position in regard to raw materials, the artisan finds difficulty in getting adequate supplies of the same and what he gets is what remains after the demands of the export dealer and the big manufacturers are satisfied; this means that the supplies left to the cottage worker are of poor quality. In addition, some middlemen practice fraud and material of inferior quality is passed off as of superior quality. This may be true also of the larger industries but there the ability of the purchaser to make alternative arrangements is decidedly greater than in the case of the cottage industries. Even when the middleman is honest, the quality is poor because the producer's technique is crude and not enough attention has been paid to the problem of improvement in the quality of the raw materials required by the artisans at the primary stage. Often the poor quality of local suppliers leads to dependence on foreign substitutes and this necessarily brings in the middleman who not only charges higher prices but also imposes onerous conditions on the purchaser and thus reduces the artisan's earnings.

114. *Technique—Inefficiency of existing implements and technique.*—Another great handicap from which the artisan suffers is the persistence of methods of manufacture and of implements which are out of date and inefficient. Thus, even to-day, the throw-shuttle persists in many weaving centres and other improvements such as the use of beam warp, dobbies, etc., are not much in evidence. The wool weaver's handloom is still of the old crude type, while the oil *ghani* has not changed in size or mechanical efficiency. Apart from the fact that the implements used have not been improved, the methods of manufacture also remain

old-fashioned. Thus, in tanning, pottery, brick-making, etc., the same methods are being employed as of old with the result that the technical efficiency of the handicraft in India is at a distressingly low level. It is not quite fair to criticise the cottage worker for this state of affairs. It is certainly not possible for him to have his own research workshop ; while the middleman who has larger financial resources is not very much interested because after all he does not mind whether he sells cottage products or machine-made products as long as he is able to make a living by selling things. Inventors and other professional scientists are also not very much keen on this kind of work. It is true that the Provincial Department of Industries is interested in technical research for the handicrafts, but having started only very recently they have not been able to accomplish much in this field. The result has been that the implements and the technique of manufacture of our cottage industries have been almost at a standstill for many years and there is no doubt that this has stood in the way of their uplift. That there are possibilities of improvement once science and method are brought to bear on the technical aspects of the cottage industries, is evident even from the little work in this direction which has been done by the All-India Village Industries Association and the All-India Spinners' Association. The All-India Spinners' Association has succeeded in devising within the comparatively short period of its existence improved implements to assist the hand worker in ginning, carding, spinning, etc. The All-India Village Industries Association has, within an even shorter period of existence, devised a *ghani* that yields a larger percentage of oil than the *ghanis* previously in use. When we remember that these are more or less isolated attempts that have had no backing of the State behind them and without enough technical skill and financial support, it is evident that there are considerable possibilities for improvement in the tools used by the cottage worker.

115. *Technique—Difficulties in the way of introducing improved Implements and Technique.*—For improving the technique of manufacture followed by the Indian artisan it is not enough to devise better tools and implements. It is an even more difficult task to find him able to take up the improved implements. This has been seen from the experience of the Provincial Department of Industries which has not succeeded in eliminating the throw-shuttle from the handloom weaver's equipment in all cases where it is technically possible to do so. As for dobbies, beam warps, etc., only a very small proportion of the weaving population has taken to them. It is not the artisan's conservatism which is the main obstacle to his taking up these new implements. Partly it is his utter lack of financial resources which explains his behaviour, but even more important than that is the marketing difficulty. The artisan knows that improved tools mean a larger output and he is already in such difficulties about disposing of his existing output that he naturally shirks from taking to a course of action that will increase these difficulties. In fact the most frequent explanation given to the Committee's investigators by artisans for their not adopting improved implements was their fear of inability to dispose of the

increased output ; let the State, said the artisans, undertake to purchase our increased output and we might be more willing to go in for these new machines. It is also unhappily a fact that the middlemen, who largely control the running of these cottage industries, are nevertheless not interested in financing the introduction of new implements or in undertaking the marketing of the increased output. In fact the middlemen do not seem to have much confidence in the future of cottage industries and they are not prepared to put up a strenuous fight for their improvement. They seem to prefer the easier alternative of substituting the more readily saleable and cheaper machine-made goods in their shops for the more costly cottage products. The middlemen have also been resorting to sharp cuts in the wages and earnings of the artisans as one way of cheapening cottage products. The result has been a substantial decline in the income of handloom weavers and also that of the other classes of artisans. It is difficult to get reliable statistics for all classes of artisans, but we have been able to get data for the most important cottage industry, viz., handloom weaving and the following figures of wages per piece are illustrative of the general trend :—

TABLE 49.

Kind of sari.	1925.	1938.	Decline in percentage.
SHOLAPUR.			
	Rs. a. p.	Rs. a. p.	
<i>Pharaspeti</i> (8 yds. × 45") (30s) ..	1 8 0	0 7 0	70
<i>Ilkal</i> (8 yds. × 45") (30s) ..	0 14 0	0 5 9	59
<i>Nepani</i> (8 yds. × 45") (30s/24s) ..	0 14 0	0 7 0	50
<i>Maheshwari</i> (8 yds. × 45") (60s/40s) ..	1 2 0	0 9 6	48
NASIK.			
	1928.	1938.	
<i>Maheshwari border</i>	2 0 0	0 6 0	81
<i>Cotton with fancy border</i> ..	1 10 0	0 5 0	90
<i>Fancy silk border</i>	1 8 0	0 5 0	79
<i>Ilkal superior type</i>	2 4 0	0 10 0	72
SANGAMNER.			
	1920.	1938.	
<i>Outworker</i>	1 4 0	0 4 0	80
BIJAPUR.			
	1928.	1938.	
<i>Hustadi Jamadi</i> (80 pieces) ..	8 0 0	2 8 0	68
<i>Toda khan</i> (80 pieces)	{ 10 0 0 to { 12 0 0 }	5 0 0	50 to 58

The fall in the handloom weaver's earnings has been much greater than that in the mill-worker's wages, and this probably affords an important explanation of the apparent paradox of depression in the handloom industry co-existing with a continued sale of handloom products.

For another cottage industry, viz., manufacture of brass and copper vessels, we obtained the following figures of wage movements :—

TABLE 50.

	1928.	1938.	Decline in percentage.
	Per maund. Rs. a. p.	Per maund. Rs. a. p.	
AHMEDNAGAR.			
Brassware	6 0 0	4 0 0	33
Copper	4 8 0	3 0 0	33
Repair work	4 8 0	2 8 0	44
KOLABA.			
	1926.	1938.	
Wage for <i>kalashi</i>	8 0 0	{ 3 0 0 to 4 0 0 }	50 to 63
THANA.			
	1919.	1938.	
Repair work	10 0 0	4 0 0	60

For the other cottage industries, equally reliable figures are not readily available, but the data collected by the Committee's investigators warrants the conclusion that there has been great decline in the cottage worker's earnings.

In fact, it is this pathetic helplessness of the worker to resist the persistent reduction in his remuneration which has prevented elimination of the cottage industry. To sum up, it must be admitted that the artisan's implements and methods of manufacture remain old-fashioned. Not enough organised and State-aided effort has been made to tackle this problem, and even where improved implements have been devised, the difficulty of enabling the artisan to take them up has remained almost insuperable and the middleman is, to say the least, certainly not helpful. The problem of improved technique is thus seen to be intimately connected with the problems of marketing and finance. In the meanwhile, the products of the large-scale and machine-using industries show persistent improvement and reduction in cost, with consequential adverse results on the competitive position of cottage products and on the income of cottage workers.

116. *Finance.*—It has been seen that one of the essential requirements of the artisan is finance. He requires finance for purchasing his raw materials ; he must have enough staying power to wait for good prices before selling his output ; and in some cases, he has to be in a position

when he can give credit to his customer. Finally he needs money for purchasing new equipment. The artisan in this country is normally so poor that it is impossible for him to supply his own financial requirements. It is difficult for him to obtain it from banks or even co-operative credit societies, for his assets are practically nil and he cannot furnish sufficient security to entitle him to a loan. It is inevitable, therefore, that he has to fall back upon the *sowkar* for his finance. The handicaps attached to *sowkari* finance have been often described with reference to Indian agriculture; and it is not necessary to repeat that description. From the information collected by the Committee's investigators it appears that the rate of interest paid by the artisan ordinarily varies from 9 to 18 per cent., 12 per cent. being the most usual rate. But the rate of interest does not correctly describe the poor credit of the cottage worker. The cottage worker has no tangible assets and the only thing he has got is labour. It is inevitable, therefore, that in return for financing him the middleman demands that his products should be sold through him at rates fixed by him. The result is that in many cases, the artisan becomes an outworker; it was stated that in some centres, the price of the finished product is fixed for the whole year in advance and adverse fluctuations in the prices of yarn and other raw materials have to be borne by the worker. The dealers who supply the raw materials are also said to deduct from the price of the finished product usually high charges for the raw material supplied by them. Attempts have been made in some cases to organise co-operative finance for the handloom weavers but these cannot be said to have been successful. The artisan is thus almost exclusively dependent on the middleman for finance and this results in his having to be content with a lower price for his output than he may be able to obtain in the open market. It also precludes improvement, for as we have already stated successful introduction of improved technique is intimately linked with the marketing of the increased output, and as the middleman has neither the initiative or the incentive to undertake the latter, he is not willing to provide the former. The result is highly disadvantageous to the cottage worker.

117. *Marketing: the existing arrangements.*—We have already seen that marketing constitutes the fundamental problem of the cottage worker. "How can I dispose of the products?" "How can I get remunerative prices for them?"; these were the questions which were flung at the Committee's investigators by most of the artisans whom they interviewed. In fact many of them suggested that Government should buy up their output and pay them a decent wage for their labour in producing the output. Before we proceed to analyse the causes underlying this state of affairs, it is desirable to make a brief review of the existing arrangements for the marketing of the products of handicrafts in this Province. Generally speaking, there are two main methods of disposing off the artisan's products. One is for the artisan to go round himself hawking his products or to stock them in his house or in his shop and wait for the customer to come to him. A variant of the same method is for the artisan to take his products to weekly fairs. The other method

is for the artisan to sell to a dealer, the dealer in most cases being one to whom the artisan is in some kind of financial obligation. The first kind of method usually prevails in the case of commodities which are comparatively of little value and which have a local market. The making of earthen vessels, of baskets, mats, shoes and *champals* can all be said to come under this head. The other method is found in the case of the more easily portable and comparatively more valuable products of handicrafts, the most important illustration being furnished by the handloom woven cloth of various kinds including special types such as *paithanies*, *pitambers*, *pagotas*, etc. This is also true of the manufacture of brass and copper vessels, of soap, of sandalwood work, gold and silver thread work and so on. In the case of these commodities there is no direct contact between the consumer and the artisan, the middleman dominating the scene.

118. *Marketing difficulties*.—The causes for the difficulties which are met with in the marketing of cottage products can be briefly classified as under :—

- (1) Change of taste,
- (2) Lack of finish and quality,
- (3) Higher price, and
- (4) Lack of organisation.

119. *Change of taste*.—The change of taste on the part of the Indian consumer is an important explanation for the fall in the demand for the output of Indian handicrafts. Illustrations of this change in taste is the choice of new types of headgear in place of the old-fashioned *pagotas*, the growing preference of our womenfolk for *polkas* in place of *khans*, the regarding as gaudy or old-fashioned of *kinkhabs*, *pitambers* and *paithanies* by those who formerly regarded them as indicative of rich living, the replacement of *satranjis* by the modern fashioned chairs and drawing room suites, the substitution of earthenware by aluminium ware and the substitution of Karwar *champals* by chrome leather ones. We may also mention the growing replacement of lime, bricks, carts, *machwas* or country crafts by cement, Mangalore tiles, buses and steam-driven boats respectively. It is the change in taste which is also partly responsible for the diversion of demand from hand-woven *saris* to *patahs* and also of that from hand-made brass and copper utensils to machine-made brass and copper utensils. In fact, during the last few decades such remarkable changes have taken place in the general nature of our demands for things and services that practically no department of cottage crafts has been left unaffected by this factor.

120. The changes in taste which have resulted in the diversion of demand have been of two different kinds. One is where the changes are not fundamental in the sense that the raw material used remains the same and only the pattern or design or process is different, in other words where the commodity only changes its form ; and the other is where the commodity itself is different. Thus, for example, in the case of the largest

cottage industry namely the handloom weaving, the change in demand is more one of form than of substance while in the case of earthen vessels being replaced by aluminium ware or carts giving way to buses, the change is more fundamental and, therefore, less easily amenable to marketing reform. It must also be pointed out that in a number of cases of such a fundamental change in demand, the new commodity gives employment to entirely new persons and not to those who have lost employment because of its introduction. But marketing reforms have better scope in the case of other commodities where the change is not so fundamental and where, therefore, it is possible for the old workers to take to new methods. It has to be admitted, however, that in such cases, even though something is possible, nevertheless no systematic and organised efforts have been made to bring about this change. Some attempt has been made recently by the formation of District Industrial Co-operative Associations about which we shall say something in the next chapter. But it may be pointed out here that the number of weavers affected by this movement is a very small proportion of the total number while the amount of cloth handled constitutes an almost negligible percentage of the total quantity of handloom cloth marketed in the Province. It is the middleman who should have taken the initiative and it is he alone who could have brought about an extensive readjustment. However, he has not chosen to play his part but rather has followed the line of least resistance and cut down wages in order to sell the output of the cottage worker. That is why very little re-adjustment has taken place in the form of commodities turned out by the cottage worker even in cases where the fall in demand has been mainly due to this lack of adjustment.

121. *Lack of finish and uniform quality.*—Lack of finish and smart appearance is another important cause of the decline in demand for the products of handicrafts. Thus for example, the carpets woven at Dharwar and the *kambli*s produced in the wool weaving centres of Bijapur, Belgaum and Sholapur are reported to be so coarse and rough that they would not find an urban market. The preference of some people for foreign bangles over the hand-made indigenous variety is due to the gloss and lustre of the former. Similar considerations explain the readier marketability of factory-tanned leather over the hand-tanned one. The modern public values appearance even more than durability in the articles they purchase and this the artisan does not provide. In fact, it has been demonstrated that when the indigenous *kambli*s are put through a finishing process, they get a brightness of appearance which is comparable to that of the Italian rugs that are now imported in such large quantities and this has a marked effect in improving the saleability of the indigenous *kambli*s.

122. Moreover, it must be admitted that the cottage worker is not always possessed of the foresight which lays stress upon the need for maintaining unimpaired the quality of one's output. Often, for example, the handloom weaver, in order to make up for a part of the decline in his earnings, seeks to increase the weight of his cloth by excessive sizing

or he uses cheap dyes which are not fast in colour. The result is that his product gets a bad name and this has adverse repercussions on his industry. It has been seen that where some attempt is made to preserve the continuity of quality, the marketing problem becomes simpler. Thus at Bhingar in the Ahmednagar district the weavers' *Panch* certifies the quality of the goods prepared by the weavers of the place. The Committee's investigator reports that about 20 per cent. of the products of this centre is stamped by the *Panch* and that such stamped products find a ready market. It seems clear, therefore, that there is an urgent need not only for the cottage worker to go in for modern designs and patterns, but also for regulating and guaranteeing the quality of his output by means of some organisation that will examine and certify the quality. In the same connection, it must also be pointed out that from the data collected by the Committee, it seems that there is a general want of public confidence in the quality of Indian articles, e.g. soap, ink, tooth paste, etc., and the setting up of a reliable organisation, that will test and certify the quality of indigenous goods, especially the products of handicrafts, will materially enhance the saleability of these commodities.

123. *Higher cost of hand-made products.*—The third and perhaps the most important cause which explains the difficulties felt in marketing the output of cottage industries is their generally higher cost of production as compared to the competing machine-made articles. This has resulted in the almost complete elimination of certain hand-made products such as hand-spun yarn, hand-ginned cotton, hand-husked rice, etc., while in other cases, prices of hand-made products have had to be reduced to levels that have meant a grave encroachment on the artisan's standard of life. The artisans feel this price competition to be the greatest obstacle in the way of marketing their goods and many of the handloom weavers interviewed by the Committee's investigators and many of their representatives who were interviewed by the Committee suggested that the best way in which the State could help them would be to do something to raise the price of mill-made cloth.

124. We have not been able to obtain enough data on the subject, but there is no doubt that in a number of cases the cost of production of cottage products is higher and if the cottage worker is anxious to obtain a price that will enable him to recover his costs, including in that expression a nominal profit, he finds himself almost unable to sell his output. Whether the artisan's cost of production could be substantially reduced without cutting down his earnings or not is a question about which there is no data to give a categorical answer. But there is no doubt that some diminution in his cost of production could be effected by improved technique and better marketing methods, the question whether this is sufficient cannot be given an equally certain answer. But there is no doubt that the Indian market is, as the Japanese have described, primarily a price market and particularly in rural areas cheapness counts far more than finish or modern pattern. This problem of price competition is crucial to the question of the uplift of Indian

handicrafts and has to be solved if there is to be a really substantial increase in the demand for cottage products.

125. *Lack of organisation in marketing.*—Fourth and as important as any of the factors mentioned above is the almost complete lack of organisation which exists to-day in the marketing arrangements for our cottage products. As we have seen the *soucar* is the central figure and he does not give the products of the artisan any of the marketing facilities that the mill-made products normally obtain. Thus, for example, there are very few places in the big cities where there is a display of cottage products and the products are not advertised either by posters or newspapers. Nor is the press by any means full of articles describing our cottage industries and creating in the public that love of cottage products which exists even in the more industrialised nations of the West. Moreover, not only has no systematic attempt been made to give the public a prejudice in favour of cottage products, but even such instinctive and traditional preference for cottage products that the people have becomes useless as they do not know what cottage products there are that can be bought and where to go for purchasing them. There is no market research as far as the cottage industries are concerned, nor has any determined attempt been made to introduce new styles and new types to capture the consumer's mind. Even where there are a few shops, there is no standardisation of articles and no guarantee of punctuality in delivery. Altogether there is lack of organisation in the selling of cottage products.

126. To sum up, the selling of cottage products presents a great deal of difficulty. This is so partly because consumers' tastes have changed and partly because the cottage worker's output lacks the finish and the modernity which machine-made products have and there is no certificate of guarantee of quality attaching to it. It is also due to the fact that the cost of production of cottage products is higher. Finally, must be mentioned the fact that there is no organisation and no application of method or science in the selling of cottage products, the middleman who is the principal seller being content to follow his father's ways rather than take any initiative.

127. *Taxation.*—A large number of the cottage workers interviewed by the Committee's investigators complained bitterly about the incidence of municipal taxation. It was pointed out that in a number of places the octroi duties or the terminal taxes imposed by many of these municipalities were on raw materials or semi-finished goods that were required by the cottage workers. For example, the handloom weavers complained of the octroi duties on the import of yarn. At Guledgud the weavers were bitter against the octroi duty on yarn of 4 annas per maund or part thereof. Similarly, at almost all centres of the brass and copper ware industry, there was a general complaint against the municipal duties on brass and copper sheets. This duty on metal sheets varied from centre to centre; at Nasik it was 3 annas per maund, whereas at Hubli and Poona, it was 4 annas and 6 annas respectively. The semi-finished

products such as cloth for calico-printing, glucose for confectionery and chrome leather for shoes and boots were also taxed by some municipalities. In addition to this burden at the raw material stage, some of these products were also taxed at the finished stage. For instance, the Guledgud weavers complained that they had to pay not only the octroi duty of 4 annas per maund of yarn, but also an export duty varying from $2\frac{1}{2}$ annas for 10 seers to 10 annas per maund of *khans* and *saris*. The brass and copper industry has similarly to bear municipal taxation both at the raw material stage and the finished stage. These taxes naturally increase the cost of production and act as an additional handicap in the competitive capacity of the cottage products.

128. *Difficulties of small-scale industries.*—We have dealt so far with the difficulties that face the cottage workers in general. Though many of these difficulties are also common to the small scale industries in the country, the problems facing cottage industries and small-scale industries are not always identical. The latter are more organised and have the benefit of the enterprise and keen intelligence of their independent proprietors. And yet, they have also not made much headway in the industrial structure of the Province. The difficulties facing these small-scale industries can be summarised under the following heads :—

- (1) Raw materials.
- (2) Technical assistance and expert advice.
- (3) Finance.
- (4) Competition.
- (5) Marketing.
- (6) Other difficulties.

129. *Raw materials.*—Many of our small-scale industries use raw materials or semi-finished products that are imported from abroad. Thus firms manufacturing brass and copper vessels use foreign sheets, those making textile wooden parts use foreign wood and those engaged in fruit canning have to use imported containers. Almost all industries using imported raw materials complain against the general import duty of 30 per cent. An important concern producing surgical goods points out that they are handicapped in the production of pharmaceutical products by the very high duty on crude drugs. Similarly, the bobbin-making industry of Surat is said to be facing considerable difficulties on this account. The revenue tariff thus has the effect of raising the cost of production. In addition, there is the even greater rise in the prices of raw materials and semi-finished goods arising out of the protective import duties. Thus, the costs of production of the manufacturers using steel and sugar are said to have gone up as a result of the protective tariff. Costs of raw materials are further raised by the railway freights policy followed by the Government of India. Fruit canning concerns also complained of the dearth of cold storage arrangements on the railways. The small-scale concerns also had

complaints to make about the octroi duties which, they said fell on production. Finally it was suggested that the Province's supply of raw materials has not been properly explored or exploited by Government and if this were remedied, it would be easier for the industries to get the raw materials they required.

130. *Technical assistance and expert advice.*—Another serious handicap in the expansion of the small-scale industries is stated to be the absence of adequate technical assistance and expert advice. The owners of the small-scale factories are businessmen rather than technicians and as their output is meant to cater to the more fashionable urban demand and has to compete with the highly finished imported products, the want of technical assistance is making itself felt in various directions. Sometimes the kind of assistance required means only a small change in the existing machinery and processes in order to effect the desired improvement. Thus, for example, the Surat *karkhandars* engaged in the gold and silver thread industry desired technical assistance for improving their wire drawing machines as also expert advice in the proper mixing of chemicals for dyeing purposes. Sometimes the *karkhandars* desired to instal machinery for producing superior quality articles. Thus, for example, a producer of electric fans in Bombay City wanted technical assistance to enable him to prepare superior types of fans while some manufacturers of washing soaps in the mofussil desired assistance for preparing toilet soaps. There is also need for technical assistance for the profitable utilisation of our products which in many cases go to waste to-day. These concerns are not financially very strong and in any case it is not possible for them to employ individual technicians of enough standing and experience who alone can solve their problems. Some of them also felt that it was not individually possible for them to keep in touch with the latest changes in patterns, designs, etc., and they suggested that information of this kind should be made available for them by Government Departments; such a request was made, among others by people engaged in the decorative and home-furnishing trades.

131. *Finance.*—An almost universal need of the small-scale and medium sized concerns seems to be for finance. These concerns are mostly proprietorial or limited partnerships and they do not usually have enough funds of their own to enable them to improve their equipment. They also do not possess the capital necessary for storing the raw materials required by them and when they borrow from outsiders they have to pay high rates of interest. As instances of small-scale concerns where new implements have not been introduced for want of finance could be mentioned some of the *karkhandars* engaged in gold and silver thread making in Surat, some of the *karkhandars* making rice milling, sugar milling machinery, etc., in the Province and some cutlery makers in the Ratnagiri district. As illustrative of the financial difficulties attending the storing of raw materials may also be mentioned the experience of small cigarette manufacturers in the Bombay Suburban district. There are some other manufacturers

who are in need of finance on the hypothecation of their finished goods. There is no doubt that the small-scale concerns have an urgent need for finance on reasonable terms and the provision of some special organisation for the purpose will have to be considered when we come to make our recommendations in the sixth chapter.

132. *Competition.*—Perhaps the most difficult problem confronting the small-scale concerns is the intense competition they meet with, especially the competition of imports. In particular the Japanese imports of various kinds enter into direct competition with Indian products and this is stated to be responsible for the inadequate development of such industries as silk goods, hosiery, manufacture of incandescent lamps, electric lamps, tricycles, etc., in the Province. In fact, great regret was expressed that the Government of India did not complete their enquiry into the question of the competition of the Japanese imports with the products of small-scale industries in India and the producers felt that something had to be done to protect their little concerns from being swamped by powerful foreign organisations that had a great deal of State help behind them. It is not only Japan that competes in the Indian market. Makers of rice milling machinery at Thana, Hubli and Gadag complained bitterly about the German rice hullers while the Indian pharmaceutical concerns are also suffering from foreign competition.

133. In addition to the competition of these direct imports, there is the competition from foreign concerns that are established within the country itself and possess such immense resources that it is difficult for the Indian concerns to compete with them on equal terms. Thus, for example, powerful foreign companies have established themselves in India for the manufacture of matches, shoes, cigarettes, soap, etc. These concerns have such vast financial and technical resources that the result of the competition has been the elimination of a large number of small Indian concerns from the manufacture of soap, cigarettes and matches. Moreover, some of them make use of the good-will attaching to their products which were originally made abroad and refrain from telling the public that the goods they now sell are made in India. Thus most of the Indian-made brands of a prominent tobacco company are labelled under the name and address of their offices in England and the public is under the impression that those goods are manufactured in England. The selling organisation of these foreign companies is so wide and the goodwill attaching to some of their products is so great that they are largely able to dictate their own terms to the retail dealers and practices similar to those existing in the United States in the days of the great Trusts seem to be making appearance in this country as well. The industry most recently hit and struggling to survive is the cigarette making industry of the Bombay Province.

134. Then there is a third kind of competition which comes from the Indian States. It is stated that in the Indian States factory laws, etc., are much less restrictive and many of the small concerns established

in Indian States are able to sell at lower prices than similar concerns in British India. Further the larger concerns complain of the terrific competition emanating from the various small concerns or rather from individuals with very limited resources who have got no staying power and who spoil the market by selling their output at whatever prices that they can fetch. This has led to the demand by some concerns that there should be State regulation of such competition. In any case the Committee has been impressed with the extreme competition from all sides with which the small-scale concerns are confronted ; there is no doubt that if these concerns are to grow in number and in strength, something will have to be done to overcome or regulate this competition.

135. *Marketing and State help.*—The small scale concerns of course are not so badly off as the cottage industries regarding their marketing difficulties, but they also feel that they want a department which will supply them with commercial and industrial intelligence, conduct market research and keep in touch with the persistent changes in demand. Their individual financial resources are small and they feel that the Government of the Province has an obligation to the small industries of the Province by adequate publicity and propaganda for their products. Among the industries making this demand should be mentioned the sandalwood carving and ivory manufacturing industries of Kanara and Surat, the engineering industry of Thana and Surat, fruit-canning companies of Belgaum, Poona and Bombay, etc. They suggest the issue of regular bulletins by the Industries Department which would keep the people of the Province as well as the rest of India in touch with the progress of industries—small scale and cottage within the Provincial area.

136. Many of the small scale producers strongly urged the necessity for Government patronising their products. The type foundries of the Bombay City, the ink producers of Ahmedabad and the cutlery producers of Kolaba and Ratnagiri all complained that their products did not get adequate Government patronage. The manufacturers also laid great stress on the unfortunate effects of the curious popular notion that the products of Indian concerns, being in their infancy, are not as good as imported substitutes. With a view to counteracting this tendency they suggested the urgent necessity for setting up of a certifying organisation that could test the quality of their products and issue certificates. Such an action, they felt, combined with Government themselves purchasing their requirements from them would give a good fillip to the demand for Indian products. Another point made by these manufacturers concerned their foreign markets. They felt that it must be somebody's business to look after the interests of the Province's industries in foreign markets and to keep the local producers in touch with the changes required to retain and expand these markets. It is also necessary that their interests should be defended in those markets. Thus, for example, the Surat gold and silver thread industry had a good market in Madagascar, but the raising

of the import duty by the Government of that Colony has resulted in the loss of that market for this industry. Similarly it is reported that the market for Indian confectioneries has been lost in South Africa. It is felt by these manufacturers that this kind of thing should not be permitted to happen and in order to secure this end, the Provincial Government should make it its special business to look after the foreign markets of the industrial producers of the Province.

137. *Adulteration*.—In addition to the complaints detailed above, we should mention some other difficulties confronting the small-scale producers to which our attention has been drawn. It was alleged that in many places considerable adulteration was practised both in the supply of raw materials and that of finished products. Instances were given for raw materials, cotton and groundnuts; and for finished products, butter, ghee and soaps. It was felt that some legislative steps should be undertaken to prevent this evil.

138. *Electricity charges*.—Complaints were also made against what were termed the heavy and varying charges made for electricity in the Province. Some manufacturers in the Bombay Suburban district adversely contrasted the rates they were charged with the rates that were charged in the Bombay City. It was stated that charges for electricity were so high in the mofussil districts that they constituted a definite handicap on the use of power and therefore on the expansion of the small-scale industries of the Province.

139. *Freight charges*.—The complaint about the high incidence of Indian railway freight charges was almost universal and applied both to raw materials and finished products. It was stated that the authorities regard the railways purely as a commercial proposition regardless of the effect of this policy on the industries of the country. In a country of such long distances as ours, it is easy to see what an important part for both good and bad railway freights can play in the setting up of and development of industrial concerns. This, however, is like tariffs a Central subject and will have to await action by the Central Government.

140. *Operation of the Factory Act*.—In many centres complaints were made that the application and extension of the Factory Act had gravely handicapped their operations. The *karkhandars* of powerlooms at Ahmedabad, Bhivandi and Belgaum were particularly critical. It was pointed out to the Committee's investigators that similar legislation was not in force with regard to their competitors in the Indian States. This again raises fundamentally a question of an All-India policy which it would be difficult for a Provincial Government to solve in isolation.

141. *Taxation*.—The small-scale concerns also complained of the weight of octroi duties. Some of them also felt that the municipalities within whose limits these concerns are located do not take sufficient interest in their welfare. Thus they felt that some of the municipal regulations reacted adversely on their interests and could be relaxed without undue inconvenience to the people or Government.

The small manufacturers also complained about the incidence of import duties which fell on the raw materials and semi-finished goods used by them. It was also stated that in a number of cases, there was no difference between the duties on the finished products and on the semi-finished goods from which these goods were made, e.g., all sorts of metals and their manufactures other than iron are charged the same import duty. Then again higher revenue duties are charged on white lead, tin and zinc, while an almost nominal duty was charged on printing types; it was asserted that this came in the way of the progress of Indian type foundries. There is no doubt that there is some truth in the charge that the Indian customs tariff is not scientific and this requires looking into by the Central Government.

142. *Conclusion.*—We have given above a brief description of the handicaps under which the cottage and small-scale industries of the Province are suffering to-day and we have also summarised the main complaints that were placed before us by these interests. More details of some of these complaints will be found in Volume II of our Report. But there is no doubt that the handicaps under which our small-scale and cottage industries suffer are many and it is also certain that these handicaps cannot be removed unless organised and concerted action is taken to deal with them. In the next chapter, we proceed to a brief survey of what action has been taken by the Government of Bombay in regard to some of these difficulties before we take up in Chapter IX the question of what we think should be done for tackling them.

CHAPTER VII.

THE STATE IN RELATION TO INDUSTRIAL DEVELOPMENT.

143. In the preceding chapter we have given a brief account of the handicaps and difficulties under which the cottage and small-scale industries of the Province are labouring. We shall now review the part played by the Government of Bombay in tackling these difficulties and in generally promoting the industrial development of the Province. The Departments of Government which are directly or indirectly concerned are the Departments of Industries, Agriculture, Forests, Co-operation and Public Works. The Department of Industries is, of course, the one which is most immediately and exclusively concerned. The Department of Agriculture comes in so far as it is concerned with the improvement of the raw materials that are employed for industrial purposes within the Province; that of Forests comes in, in as much as forest products constitute an important source of industrial raw materials and the State ownership of forests, therefore, gives the Government scope for influencing industrial development. The Department of Co-operation is also in the picture because of the application of the co-operative method to some of the problems confronting the artisans of the Province. We must also add to this list the Department of Public Works in so far as it is concerned with the construction of new roads and maintenance of the existing ones.

144. The Department of Industries is a comparatively recent creation. Before 1914 Government took little direct interest in industries and certainly did not regard the active promotion of industries in the Province as one of their legitimate functions. The exigencies of the last War together with the need for the mobilisation of the country's industrial resources led to a change in policy. Government constituted a Standing Committee of Advisers known as the Indigenous Industries Committee. In the meanwhile the Government of India had formed a Munitions Board and an Industrial Commission had been appointed in 1916. The Industrial Commission recommended the establishment of Provincial Departments of Industries the functions of which were enumerated in paragraph 306 of the Report as under:—

(a) The direct encouragement of industries, including a large share in industrial research work, the provision of technical advice and assistance to industrialists, the examination of applications for special concessions, and the grant of loans to small and cottage industries.

(b) The collection and distribution of commercial and industrial intelligence; the work of passing Government indents and of purchasing and inspecting certain classes of Government stores; the organisation of markets for local products; the conduct of special enquiries and industrial surveys; the holding of industrial exhibitions and the management of commercial and industrial museums.

(c) The control of technical and industrial education. This would necessitate the training of staff for, and the inspection of, industrial schools ; the organisation and inspection of apprentice classes attached to large works, and the provision of the staff for the necessary theoretical teaching. The Director would also have to take his share in the control of the higher institutions for technical and industrial education. Funds for technical and industrial education would be provided from his budget.

(d) The control of the staff employed for the local administration of the Electricity, Factories and Boiler Acts, and the furnishing of advice to Government on the industrial and commercial aspects of the Mines Act and of the rules for mining leases and prospecting licenses.

It was an ambitious programme. Accordingly the Indigenous Industries Committee was dissolved in 1917 and a Director of Industries was appointed to start functioning from 1918. The post-War financial stringency led to a curtailment of his activities and in 1924 the post of the Director of Industries was itself abolished. The Department was revived in 1925. In 1927 when the then Director retired from office, Government ordered the post to be held in abeyance and appointed a Committee under the Chairmanship of Mr. C. G. Freke, I.C.S., to enquire and report on the formulation of the Department's activities and its re-organisation. This Committee pointed out that the Department of Industries should devote most of its attention to cottage industries and should not ordinarily concern itself with large organised industries which may be national or international in scope such as steel works or cotton mills. As regards the small organised industries which may be local or provincial in scope such as sugar factories, tanneries, etc., the Committee held that these should be within the scope of the Provincial Department as an industrial engineer can often be of assistance in advising in connection with small industrial plants. The Committee, however, emphatically expressed their view "that in the near future and until adequate budget provisions can be made for expanding the scope of the Department's work, it should concentrate upon assisting the small industries". Government accepted the recommendations of the Committee and the post of the Director of Industries was revived with effect from 1st April 1928. Mr. P. B. Advani who was appointed to this post joined his duties on 1st August 1928 and he has held it continuously since then. It is useful to emphasise at this stage the fact that continuous and uninterrupted existence has been secured to the Department of Industries only from 1928. In fact, even in this period of 11 years from 1928 to 1939 the Department has had to face two Retrenchment Committees and has managed to survive a proposal for its abolition.

145. The slow progress of this Department can be seen from the following statement of the amount spent on it since its re-organisation in 1928 :—

TABLE 51.

		Total Provincial expenditure (inclusive of expenditure on fisheries).	Expenditure on technical and industrial education.	Expenditure on weights and measures.	Expenditure excluding expenditure on both Technical Education and on Weights and Measures section but inclusive of expenditure on Fisheries.
1928-29	..	77,669*	....	....	77,669
1929-30	..	1,05,924	....	....	1,05,924
1930-31	..	1,23,715	....	....	1,23,715
1931-32	..	3,67,019	2,46,322	....	1,20,697
1932-33	..	3,37,069	2,19,664	....	1,17,405
1933-34	..	3,53,369	2,22,585	....	1,30,784
1934-35	..	4,41,488	2,33,901	97,924	1,09,663
1935-36	..	6,31,903	2,29,434	2,31,606	1,70,863
1936-37	..	6,20,043	2,49,592	1,49,145	2,21,306
1937-38	..	7,29,597	3,16,006	1,56,818	2,56,773
1938-39	..	8,44,768	3,03,203	1,59,031	3,82,534

(Source : Annual Reports of the Industries Department.)

(*Up to the end of 1930-31, the expenditure on technical and industrial education was included in the Director of Public Instruction's budget.)

In fact, when the Department was reorganised in 1928 there was only one officer namely the Director of Industries. Subsequently an Industrial Chemist was appointed in 1929, an Industrial Engineer in 1930, a Fisheries Officer in 1933, a Warden of Weights and Measures in 1935, a Textile Designer and a Marketing Officer in 1935, a Personal Assistant to the Director in 1936, a Tanning Expert in 1936, a Deputy Director of Industries in 1937, and a Wool Expert, an Artist Designer and a Fibre Expert in 1938. With the advent of Provincial Autonomy in 1937 things have improved for the Department. Even then, the expenditure on the Department budgetted for the year 1939-40 comes only to Rs. 12,33,000 excluding Rs. 81,000 financed by the Government of India. Out of this amount Rs. 1,73,900 is on account of the administration of the

Weights and Measures Act and Rs. 3,73,800 is on account of technical education which prior to 1931-32 was included in the Educational Department proper. The balance of Rs. 6,85,300 included Rs. 3,000, grant to the National Planning Committee during the current year, and Rs. 1,20,300 on schemes which Government have later decided not to proceed with. Thus the net expenditure on Industries Department proper comes only to Rs. 5,62,000. In judging the effectiveness of the part played by Government in helping and promoting the industries of the Province the brief historical account given above of the Department of Industries should constitute a rather relevant material.

146. The activities of the Department can be roughly classified under the following heads :—

- (1) Surveys.
- (2) Research both in respect of improvement of technique and utilisation of raw materials.
- (3) Propaganda and education.
- (4) Marketing.
- (5) Finance.
- (6) Other kinds of assistance to industries.
- (7) Miscellaneous.

In addition, the Department was also entrusted with the work of executing the provisions of the Weights and Measures Act of 1935.

147. *Surveys*.—The following surveys were undertaken by the Department :—

- (1) Vegetable oil industry in the Bombay Presidency, 1920-21.
- (2) China clay deposits in the Khanapur *Taluka*, 1920-21.
- (3) Indigenous wood suitable for match-making in the Bombay Presidency, 1922.
- (4) Arts and Crafts of the Province, 1926-27.
- (5) Handloom weaving, 1927-28.
- (6) Village tanning in the Province, 1927-28.
- (7) Possibilities of production of aluminium in Bombay, 1936.

All these reports have been published. In addition, Departmental surveys had been made of the pottery industry and the fibre resources of the Province as also regarding the possibilities of developing sericulture and ericulture industry, but the reports on the same have not yet been published. A survey of the marine fisheries of the Bombay Presidency has also been made at the instance of the Government of Bombay by Mr. H. T. Sorley, I.C.S., and the report has been published. It may be noticed that excepting for the surveys on matchwood, aluminium, and china clay pottery and fibre the surveys undertaken by the Department have been directed more towards obtaining an idea of the conditions of cottage workers of the Province than obtaining data regarding the quantity

and distribution of the industrial raw materials of the Province. Even in regard to the cottage industries, the surveys are mainly descriptive and do not contain much quantitative data. A survey of a different kind was that undertaken by Messrs. B. J. G. Shastri and J. K. Chapadia of the methods of gold and silver thread manufacture in the West. Of these surveys those on handloom weaving, arts and crafts, tanning and fisheries contain not merely an examination of the then existing conditions of these industries, but also include recommendations for dealing with their difficulties. The following statement summarises the action taken by Government on the various recommendations made in these reports :—

TABLE 52.

I—*Report on the Handloom Weaving Industry, 1927-28.**Recommendations.**Action taken.*

- | | |
|---|--|
| (1) Opening of a Central Hand Weaving Institute for the Province. | Central Hand Weaving Institute was opened at Poona in 1930. |
| (2) Opening of additional weaving schools for agriculturists. | A weaving school for weavers was converted into a school for agriculturists in 1930. |
| (3) Increasing the dyeing demonstration parties. | An additional dyeing demonstration party was sanctioned in 1929. |
| (4) Introduction of new designs amongst the weavers. | Textile Designer was appointed in 1930 under the Government of India Marketing Scheme. |
| (5) Spreading the use of up-to-date appliances. | This was being done through demonstration parties and weaving schools and the work is being continued. |
| (6) Weavers' Co-operative Societies should be formed on the lines of Producers' Societies, for supply of raw material at cheap rates and for sale of finished articles. | Industrial Associations started since 1935 under the Government of India Marketing Scheme. |

II—*Report on the Tanning Industry, 1927-28.**Recommendations.**Action taken.*

- | | |
|--|--|
| (1) Defects in hides like branding should be minimised by propaganda. | } A tanning section has been opened since 1936-37 with one Tanning Expert and two tanning demonstration parties which have now been increased to six. A Tanning Institute has been opened at Khar in 1938. |
| (2) Tanneries should be opened in important centres. | |
| (3) Research and training of young men in improved methods of tanning. | |
| (4) Establishment of a tanning section. | |
| (5) Utilisation of bye-products and waste products. | } No action taken. |
| (6) Development of chrome leather tanning. | |
| (7) Quality of tanned leather for exports should be standardized. | |
| (8) Need of proper facilities by Municipalities. | |

III—*Report on the Arts and Crafts of the Province, 1926-27.**Recommendations.**Action taken.*

- | | |
|--|--|
| (1) Schools of designs to be established at important places. | Recently a Drawing and Design Class conducted by the Sarvajanic Eden Society at Surat, has been recognised by the Department. |
| (2) Publicity to the Arts and Crafts in the Province. A Journal to be maintained. | No action taken. |
| (3) Dyeing demonstrations at different centres. | Three dyeing demonstrators are maintained at present. |
| (4) Raw material depôts to be opened by Government to supply artisans silk, cotton yarn, etc., at reasonable rates. | Industrial Associations under the Marketing Scheme of the Government of India started since 1935. |
| (5) Technical training for assisting all branches of Indian arts and crafts. | An Artist Designer has been appointed in 1938 and scholarships are awarded to young artisans for education at the Sir J. J. School of Art. |
| (6) Drawing schools on the same principles as the Sir J. J. School of Art should be established in each of the district towns. Sir J. J. School to be the Central Institution. | No action taken. |
| (7) Association or guilds of tradesmen belonging to a trade should be formed to purchase raw materials, sell products, advance loans, etc. | No action taken. |
| (8) Silk farming should be encouraged. | A preliminary survey of the prospects and possibilities of introducing sericulture and ericulture has been very recently completed. |
| (9) Museums to be established at central places. | } No action taken. |
| (10) Marketing Bureaus for sale of manufactured goods of small artisans, with a Central Bureau at Bombay. | |

Report on the marine fisheries of the Bombay Presidency, 1930-32.

- | | |
|--|--|
| (1) Control of fish curing yards should be taken over by the local Government. | Control transferred from the Government of India to the local Government in July 1936. |
| (2) Opening of fish curing yards in the area north of Bombay. | No action taken. |
| (3) Power fishing with motor boats. | No action taken. |
| (4) Appointment of an Assistant Inspector of Fisheries attached to the Department of Industries. | A Fisheries Officer was appointed in November 1933, and attached to the Department. |
| (5) Improvement of the quality of cured fish. | Government have sanctioned in 1938 the establishment of model fish-curing yards in the Ratnagiri and Kanara districts. |

*Recommendations.**Action taken.*

- | | |
|---|---|
| (6) Establishment of a bureau of fishery information. | No bureau established. The Fisheries Officer has himself to attend to this work also. |
| 7) Encouragement of scientific work on fisheries and scholarships for fishery research. | No action taken. |
| (8) Marine aquaria and fisheries exhibition. | No action taken. |

148. Research work of two kinds is undertaken by the Department namely (1) improvement of the implements and methods of manufacture employed in cottage industries and (2) experiment on and utilisation of the raw materials of the Province.

With regard to implements, the most important work that the Department has done is for the handloom weaving industry. In addition to attempts at popularising the fly-shuttle looms, the Department has also tried to effect improvement in the preparatory processes which otherwise are of a very laborious character. The Department has introduced several improved hand-driven and simple machines which combine both bobbin and pirn winding and are useful for small *karkhanas* having 5 to 10 handlooms. To do away with the difficulties met with by the weavers in warping and sizing, a simple warping machine has been devised by the Department and consists of a wooden creel for warp bobbins wound on the winding machine mentioned above. This machine is useful for a handloom *karkhana*. A cheaper and handier sizing machine has also been designed for the individual weaver having two or three looms in his cottage. The small machine costs about Rs. 75 and can prepare a warp of 120 ends directly from a creel of bobbins placed at its back and size the same at the same time; the machine is also provided with a drying chamber with a small charcoal stove underneath it. Another improvement in weaving introduced by the Department is the beam system. This consists of a single contrivance of wood resembling a drum in shape. It can be manufactured by local carpenters and is said to cost less than Rs. 5. The Department has also been successful in preparing a doobby which is capable of producing any designs upto 100 picks, though most of the *saris* in demand have designs with much less picks. These doobies are estimated to cost Rs. 40 and are light and easy to handle. A cheap loom for the manufacture of *sari* borders and tape weaving has also been designed by the Department. The loom occupies a space of 2' x 2' and is so constructed that a mechanical doobby can be fitted on to it for producing borders of different designs. This loom is estimated to cost Rs. 35. As regards wool weaving, an improved carding bow has been designed which gives more output and better slivers for spinning than could be had by the primitive and crude methods hitherto followed by the wool weaving classes. An improved spinning wheel manufactured in Calcutta has also been introduced.

Among other experiments carried out for the handloom industry may be mentioned those regarding sizing and dyeing of yarn. Bulletins

have been published by the Department explaining the use of magnesium chloride and other sizing materials, which would reduce the cost of sizing and also giving the correct formulæ for the mixing of colours etc., in dyeing.

For the gold and silver thread industry it has already been noticed that a special survey of the methods of manufacture in the West was undertaken by Messrs. B. J. G. Shastri and J. K. Chapadia for the Department of Industries. In addition, the Department undertook an independent survey of the industry and was able to design and introduce improved types of machines for gilding, winding and drying the gold thread. Among other types of plants designed and introduced by the Department for this industry may be mentioned (1) hand-worked wire draw-bench, (2) wire flattening rolls, (3) electrical annealing chamber for silver wire, (4) light type of hand wire drawing machine, (5) lametta winding machine and (6) gold thread spinning machine. Researches were also conducted for dyeing cotton and silk yarn for manufacture of silver and gold thread and recipes were supplied to those engaged in the industry. Recently the indigeneous gold and silver thread industry is being adversely affected by the competition of foreign imitation thread and experimental work is at present being undertaken by this Department for helping the local workers to manufacture these threads at competitive cost.

As regards bangles, experimental work was undertaken for a firm and a process was evolved which ensured the smooth and uniform joints of glass bangles. This has been followed up by the designing of new bangle furnaces and two are already under construction in Godgeri and Tallur.

An improved spinning wheel has been designed for the manufacture of coir yarn. Experiments are also being conducted regarding improved designs and furnaces for potteries. Although an Industrial Engineer was appointed in 1930, no experimental workshop was attached to the Department of Industries till 1937. Preliminary arrangements were made that year for the setting up of such a workshop and it is stated that the Industrial Engineer's workshop has been put into working order only from March 1939 and the Engineer is reported to be carrying out at present a number of experiments regarding improved machinery, improved processes, etc., for adoption to the different industries of the Province.

149. Experiments have also been made by the Department for the utilisation of some of the raw materials and waste products in the Province. For example, experiments have been conducted for the manufacture of magnesium chloride and by-products from the bitters, for the manufacture of casein, for the manufacture of starch from jowar, of lemon oil from the discarded peels of lemons, of calcium citrate from the juice of lemons, and nicotine insecticide from tobacco. Experiments have also been conducted for the manufacture of peppermint oil, for the manufacture of straw boards from the pulp of rice straw, for the manufacture of dry mango pulp in crystal forms and for the recovery

of silver from hypo-baths used in photography and photo-zinc press. Some of these experiments have led to commercial results and lemon oil and calcium citrate are being produced in the Province. A cigarette factory has also put up a pilot-plant for the manufacture of nicotine insecticide. The soap makers of Prantij and Kapadwanj have been taught how to refine crude soda found locally and they are now able to prepare better soap from the refined soda. Experiments were also conducted for the hydrogenation of oils for the making of tallow substitutes and a bulletin has been published on the subject. The Government have now sanctioned the setting up of a chemical laboratory for the Department of Industries. This started functioning in the middle of 1939; and the Industrial Chemist proposes to carry on work on a number of problems.

150. The Department is also conducting experiments with new designs and patterns for the handloom weaving industry. A Textile Designer was appointed in September 1935 and he is entrusted with the work of teaching the Weavers' Associations and Weavers' Societies new and marketable designs and patterns for their cloth. By the end of March 1938 he has attempted to introduce 100 new designs in shirtings, 36 in coating, 6 in *lungis*, 24 patterns of borders in *paithanies* and 70 in curtain cloth. In addition the manufacture of grand rille coatings, *dhoties*, easy-chair cloth, bed-sheets, etc., has been introduced amongst some of the Hubli and Ahmednagar weavers. The Designer, it may be added, is working in close touch with the Marketing Associations which will be described in a subsequent section.

151. *Propaganda and Education.*—We have already seen that it is not enough to devise new implements and methods of manufacture. Propaganda is required for the adoption of these methods and it is an important part of the functions of the Industries Department to carry on such propaganda. This has been recognised by the Industrial Commission as also by the Bombay Industries Committee, in fact, propaganda for fly-shuttles was carried on by the Co-operative Department before the Department of Industries was brought into existence; and even to-day the important part of the Industries Department's activity is education and propaganda with regard to handloom weaving. We have already seen that improved looms, improved preparatory processes and improved dobby, etc., have all been experimented upon by the Department; the propaganda for the spread of these improved appliances is carried on both by means of weaving classes and by means of peripatetic weaving demonstration parties. Weaving schools are equipped with fly-shuttle looms and the use of other improved accessories is also taught therein. Instruction is given in the weaving of cotton and mercerised bordered *saris*, silk *saris*, *dhoties*, *uparnis*, *khans* and cloths with intricate designs. No fees are charged and for the first three months each pupil receives a monthly stipend of Rs. 3. Good attendance and workmanship are encouraged by the award of small prizes. The Department maintains at present 6 weaving schools for *bona fide* weavers and 2 for agriculturists who want to take to weaving as a spare time occupation and also one wool

weaving school in the Dharwar district. The demonstration parties travel from one weaving centre to another. Each demonstrator is supplied with two or three looms. On one of these he works with the appliances which he wants to popularise among the weaving population and the local weavers can receive instruction and practice on the remaining looms. There are 7 weaving demonstration parties working in the Province at present and the cottage sizing special demonstration party. There are also 3 dyeing demonstration parties and one wool weaving demonstration party. In addition to these schools and demonstration parties, there is a Central Weaving Institute at Poona where two courses of instruction are offered, namely, one for advanced students and the other for the artisans. For the advanced course only students who have studied upto the VI standard in English are admitted. Ordinarily 15 students are admitted each year and preference is given to candidates who are connected with the handloom weaving industry. The course extends over a period of two years and a student is taught both theory and practice on the technology of weaving. The artisan's course is mainly intended for the professional weavers and lasts for one year. Admissions are limited to 15 students a year. The Institute is equipped with various types of modern handlooms, sizing machines and dyeing apparatus. No fees are charged for instruction and 12 scholarships ranging from Rs. 5 to Rs. 15 per month are granted to deserving students. At the end of 1937-38 there were 48 students on the roll of this Institute of whom 37 were in the advanced course and 11 in the artisan's course. Arrangements have also recently been made to provide for six months' practical training to students passing out from the Institute in mills, local handloom weaving factories and small power-loom factories. Six scholarships of Rs. 15 per month are available during the period of practical training and no certificates are issued to successful students unless they undergo practical training. It is claimed that as a result of the setting up of all these institutions mentioned above, the Department has been able to introduce in the Province the following improved plants by the end of March 1938 :—17,632* fly-shuttle looms, 1,160 improved dobbies, 300 beam weaving sets, 13 winding machines, 10 warping machines, 9 cottage sizing sets, 6 *sari* border and tape looms and 3 large sizing machines. The wool weaving demonstration party helps to train the weaver to use fly-shuttle looms and to weave rugs, blankets, etc., in place of the old *kambli* or *ghongdi*. The dyeing demonstration parties have helped the dyers to learn how to store dyes with care and to develop the right shade after dyeing. They have also been taught how to prepare turkey red oil locally and how to prepare soap from castor oil and caustic soda for use in naphthol dyeing. The dyers are also instructed in dyeing silk and mercerised yarn and the demonstrations have helped in establishing dye houses at several centres. In calico printing the local printers were taught improved methods in discharging and in preserving printing pastes. Till March 1936 there was no tanning section in the

*Actually it is stated that there are at present more than 47,000 fly-shuttle looms working in the Province. Obviously these owe their introduction to the propaganda carried on by the Department of Industries.

Department of Industries. It appears that this section came into existence even at that late hour only because of the Government of India grant for village improvement under which tanning was included. The original scheme provided for the appointment of one Tanning Expert and two demonstration parties. It is fair to point out, however, that from March 1937 the scheme has been financed by the Provincial Government as the Government of India refused to admit it for grant under their village improvement scheme. Since then four more demonstration parties have been added to meet the demand for improved methods of tanning in the Central and Southern Divisions. It is the duty of the Tanning Expert to supervise and instruct the demonstration parties, prepare preliminary leaflets and circulars of use to the tanners of the Province, give technical advice to tanners and manufacturers of finished leather and study the disabilities from which the tanning industry is suffering. The demonstration parties consist of a demonstrator and one assistant each and they are required to tour from place to place, teaching improved methods of flaying and tanning. Before appointment these demonstrators and their assistants were given practical training in flaying, tanning and in dyeing leather. They were also taught the use of the spray plant and the finish of leather with cellulose colours. It is stated that the tanners who have attended demonstration parties have been able to produce better tanned hides and consequently get better prices. These demonstration parties have also recently started demonstrating as to how to dispose of dead cattle and how to recover wherever possible the tallow, manure, bones, hides, skins, etc. A tanning school under non-official auspices was started in Chamdewalaki-wadi at Khar in 1937. This school has now been taken over by Government and students are given training in the artisan's course, preference for admission being given to members of the hereditary tanners' class. A tanning institute and a leather working school have also been established at Khar under the management of the Tanning Expert and provide a place where research work can be undertaken on behalf of the tanners and leather workers of the Province.

152. Among other attempts at propaganda and education undertaken by the Department may be mentioned the demonstration of improved type of machines for gilding, winding and drying of gold and silver thread designed by the Department. Demonstrations are given by the coir supervisor in the different villages of the Ratnagiri, Kolaba and North Kanara districts on the improved spinning wheel for the manufacture of coir yarn. Demonstrations are given of improved tools for the manufacture of articles suited to modern taste in connection with bamboo works and demonstrations are also given for instructing workers in preparing lacquered wares suited to modern taste. A demonstration was also organised at Prantij to demonstrate to the local soap makers improved processes of preparing soap. We must also mention in this connection the demonstration undertaken by the Department of Industries to popularise the use of power propelled marine craft for the transport of fish from the various fish centres round about Bombay within a radius of 30 miles. A boat was obtained on loan from the then

Superintendent of the Indian Marine and was used to serve as a fish-carrier. The experiment proved so successful that it was extended to the transport of fish from the Kanara and Ratnagiri coasts and the number of such launches owned by the Government to-day is four while those owned by private individuals is six. The demonstration in favour of power propelled boats for the quick transport of fish has succeeded in achieving its object and it is stated that 16 lakhs of pounds of additional fish were imported into Bombay in 1938-39.

153. In addition to popularising the use of improved implements and methods among cottage workers by means of schools and demonstration parties, the Department has been placed in charge of technical and industrial education in the Province from 1931. Previous to that year the supervision of technical and industrial education in the Province was in the hands of the Director of Public Instruction who was assisted by a Committee of Direction for Technical and Industrial Education. At the time of the transfer there were 36 schools controlled by the Committee of which seven were managed by Government, six by District Local Boards and Municipalities and 23 others were non-official bodies. Since then more schools have been recognised by the Department of Industries and by March 1939 there were 69 schools under the control of the Committee of Direction for Technical Education of which two are Government institutes, seven are managed by Local Bodies and the rest are non-official institutions. Of this number 25 were in receipt of Government grant-in-aid to the extent of Rs. 44,324. The courses recognised by the Department and taught in these institutions include the following :—

- (a) Higher grade mechanical engineering.
- (b) Lower grade mechanical engineering.
- (c) Higher grade textile manufacture (power spinning and weaving).
- (d) Lower grade textile manufacture (power spinning and weaving).
- (e) Carpentry practice, drawing and wood-work technology.
- (f) Mistry course.
- (g) Mechanical apprentice course.
- (h) Typography (composition and printing).
- (i) Carpentry and smithy practice (agriculture).
- (j) Tailoring and cutting.
- (k) Practical tailoring.
- (l) First and second class electrical wireman's courses.
- (m) Automobile engineering.
- (n) Automobile apprentices' course.
- (o) Radio classes.

154. The Department has also since 1937 set up a Government apprentice scheme by which selected young men are attached as

apprentices to different industrial establishments. At present the scheme is applicable to the City of Bombay and Ahmedabad and it is proposed to extend it to Sholapur in the near future. About 400 young men have received training as apprentices since the inception of this scheme. The Director also supervises the working of the Victoria Jubilee Technical Institute as Chairman of the Board of Trustees under whose control that institution is run.

155. It would be appropriate to mention in this section the provision of scholarships for industrial and technical education made by the Bombay Government. A certain number of technical scholarships are awarded every year by the Government of Bombay for study abroad and 13 such scholarships were awarded till the end of March 1939. Scholarships were also awarded for training in technical chemistry and electrical engineering ; the number of persons who were granted scholarships for these purposes till March 1939 being 40 and 20 respectively. In addition 11 scholarships tenable for four years at the V. J. T Institute are awarded for the benefit of members of the Intermediate, the Muslim and the Backward classes, the distribution being 5 for the Intermediate classes, three for Muslims and three for the Backward classes. There are also six merit scholarships tenable at the R. C. Technical Institute at Ahmedabad, two tenable at the P. S. Parekh Technical Institute at Surat and 12 at the Government Handloom Institute at Poona. Further 57 stipends for the first three months are granted in the peripatetic weaving schools, 12 for tanning and 15 for leather working are granted to the students attending the newly opened tanning and leather working schools at Khar and 10 scholarships are granted for the training of hereditary workers in arts and crafts, at the Sir J. J. School of Art, Bombay.

156. *Marketing.*—The Department came to realise that demonstrations of improved methods and of appliances will not by themselves solve the artisan's problem. The cottage worker was obsessed by the difficulties of disposing of his output and was reluctant to undertake anything that might increase his production unless he could be sure that he could sell what he produces. Nothing was done by the Department of Industries in this respect till 1935. In that year the Government of India decided to give a grant of Rs. 5 lakhs a year for five years to the Provinces in order to help their handloom weaving industry to obtain better marketing facilities. The share of the Bombay Province in this grant came to Rs. 39,000. The Department put up a scheme for the establishment of Industrial Co-operative Associations at different weaving centres of the Province and this scheme was approved by the Government. Under the scheme the objectives of the Associations were defined as follows :—

- (1) Supplying to weavers improved appliances on the hire purchase system.
- (2) Supplying them with raw materials at cheap rates.
- (3) Advising the weavers with regard to production of improved and easily marketable designs and patterns.

- (4) Undertaking preparatory and finishing processes of dyeing and printing works in connection with the handloom industry.
- (5) Accepting on consignment account against partial payment of handloom products from weavers and also purchasing pure handloom products and selling the same.

To fulfil these objects each Association is to open a shop at its headquarters, the expenses of the same being met from the Government of India grant until the shop becomes self-supporting. The supervisory authority is a joint board consisting of the Director of Industries and the Registrar of Co-operative Societies. A Marketing Officer and a Textile Designer have been appointed under the scheme to help and guide these Industrial Associations. More specially the duties of the Marketing Officer consist of organising the Industrial Associations, advising them regarding propaganda and extending the existing markets and opening new ones for the handloom products of the centres. The Textile Designer as we have already seen, is entrusted with the task of teaching the Weavers' Associations and Weavers' Societies new and marketable designs and patterns. The scheme was put into operation in 1936 and three Industrial Associations were organised in that year at Poona, Ahmednagar and Hubli. Today there are eight Industrial Associations working in the Province and these are located at the following centres :—Ahmednagar, Hubli, Sholapur, Ahmedabad, Yeola, Malegaon, Kamatgi and Belgaum. The Poona Association was wound up in 1937 as it could not work satisfactorily. There was also trouble with the Yeola Association but recently the Marketing Officer has taken personal charge of that Association, and things are running smoothly. The following statement summarises the working of all these Associations for the year 1938-39 excepting for the one at Belgaum which was started only very recently.

TABLE 53.

1938-39.

Name of the Association.	Member- ship.	Share- capital.		Advances from Govern- ment for capital.	Loans from banks.		Sale of raw materials.		Sale of finished products.		Total sales.		Gross profits.	
		Rs.	a. p.	Rs.	Rs.	a. p.	Rs.	a. p.	Rs.	a. p.	Rs.	a. p.	Rs.	a. p.
(1) N. C. D. Ind. Co-op. Association, Ahmednagar ..	546	1,288	7 0	8,000	12,377	15 7	10,312	0 0	15,269	13 8	34,582	6 3	1,631	10 0
(2) Ind. Co-op. Association, S. D., Hubli ..	240	1,224	0 0	6,000	2,048	8 0	14,275	0 0	8,577	2 0	22,852	12 0	427	14 3
(3) N. D. Ind. Co-op. Association, Ahmedabad ..	178	904	0 0	4,000	<i>Nil.</i>		1,585	14 0	7,088	3 6	8,624	1 6	315	0 0
(4) Sholapur Dist. Ind. Co-op. Association, Sholapur* ..	405	11,100	8 0	<i>Nil.</i>	<i>Nil.</i>		41,771	12 6	4,513	8 3	46,285	4 9	560	6 0
(5) Ind. Co-op. Association, Yeola ..	251	5,000	0 0	<i>Nil.</i>	<i>Nil.</i>		813	13 0	1,163	13 0	1,977	10 6	36	13 3
(6) Ind. Co-op. Association, Malegaon* ..	237	2,557	15 0	2,000	<i>Nil.</i>		768	11 0	1,233	14 0	2,002	10 0	197	1 0
(7) Bijapur Dist. Ind. Co-op. Association, Kamatgi* ..	168	1,705	0 0	2,000	<i>Nil.</i>		1,082	2 3	84	15 0	1,117	1 9	2	0 6
	2,024	23,770	14 0	22,000	15,326	7 7	79,560	7 9	37,831	7 0	1,17,441	14 9	3,221	6 6

* These were started after 31st March 1938.

It will be seen that the number of weavers affected is a small proportion of the total number in existence while the value of the cloth sold through these Associations is less than 1 per cent. of the total value of the handloom woven cloth of the Province. It may also be added that in spite of this, these Associations find difficulty in marketing their output and some of them have a considerable accumulation of stocks. It has in fact been suggested by them that a Central Emporium would help them to solve this difficulty and the Department has prepared a scheme in this connection which is under the consideration of Government.

157. The Government of India sanctioned a grant of Rs. 5 lakhs to be spread over for 5 years to help the cottage and small-scale woollen industries of the various Provinces. The share of Bombay in the grant came to Rs. 13,000 a year and the largest grant was made in 1936-37. The scheme has objectives similar to those of the arrangements made in connection with the cotton handloom woven products and to fulfil these objects the following arrangements have been sanctioned :—

(1) *Finishing*.—Arrangements for the finishing of hand-woven woollen cloth have been made with a Bombay mill and a recurrent amount is provided for meeting partially at any rate any losses that may be due to the inability of these products to bear the finishing charges.

(2) *Improvement of designs*.—This work has been entrusted to the Textile Designer appointed under the marketing scheme for cotton handloom products.

(3) *Marketing*.—The Industrial Associations at Ahmednagar and Hubli have been entrusted with the marketing of woollen goods under the scheme and they are given a grant for meeting additional expenditure incurred on this project. A Wool Expert has been appointed from April 1938 and under the supervision of this officer a wool weaving demonstration class has been opened at Miri in Ahmednagar where the weavers are taught to weave rugs, blankets, etc., on fly-shuttle looms.

(4) *Exhibitions*.—No marketing arrangements are undertaken for any of the other cottage products of the Province. It has, however, been the practice of the Department to participate in Exhibitions and Fairs and display therein samples of the cottage products of the Province. The first attempt in this direction was made in 1920 when a large number of samples of cottage products such as handloom cloths, sandalwood carved articles, lacquered toys and fruits, were exhibited at the British Industries Fair. The Department again participated in the British Industries Fair of 1922 and the third exhibition of the articles of art-crafts of the Province was made at the British Empire Exhibition in 1924. The exhibits displayed there were all sold and repeat orders were also executed. Since then the Department has not officially participated in any foreign exhibitions or fairs, but it has sent some articles of art crafts for permanent exhibition in the India House. The Department has, however, taken part in a number of

exhibitions held in India, mainly in the Bombay Province where it has displayed cottage products and art crafts of the Province. The Department has also taken part in several small agricultural shows organised by District Local Boards or Taluka Agricultural Boards.

158. *Finance*.—The Department had not until very recently undertaken direct financing of any kind for the cottage industries of the Province. There is no Provincial Act concerning State Aid to industries in this Province. In 1935 rules were framed by Government for granting financial assistance to small industries. It is stated that some of these rules have been found to be unworkable particularly that requiring the borrower to furnish collateral security in the shape of immovable property. Recently these rules have been liberalised and the following motion passed by the Bombay Legislature clarifies the Government's attitude in this connection :—

“ This House is of opinion that for the development of industries Government may, in appropriate cases, give aid to indigenous enterprises in the Province by one or more of the following ways :—

- (i) by lending or subscribing part of the capital needed ;
- (ii) by guaranteeing a minimum return on the invested capital ;
- (iii) by placing the available technical advice at the disposal of the person concerned ;

(iv) by giving such other facilities as may be deemed necessary

Provided that in giving such aid Government may direct that the maximum return on the invested capital shall be restricted to a reasonable limit and may lay down such further conditions as may in the public interest be deemed necessary.

Provided further that no such aid shall be given as may result in unfair competition with existing industries ”

As a result of this change, Government have sanctioned loans to a concern manufacturing pharmaceutical and chemical products ; to a workshop manufacturing seals and weights and to a concern manufacturing cameras and duplicators. Loans have also been granted to the A. I. S. A. and the A. I. V. I. A. for carrying on their activities. A grant-in-aid of Rs. 3,000 has recently been given to a private party for carrying on experiments in the manufacturing of improved type of vegetable oil lamp. Concessions regarding royalty, lease of land and purchase of shares to a certain specified extent of the capital collected, have been given to a private party which proposes to start a plywood factory in Kanara. Certain concessions have also been granted to encourage the establishment of a private paper pulp factory in Kanara.

These recent changes form a refreshing contrast to the previous policy of Government. It is hoped that Government action will prove even more liberal in the future and it will become possible for the small-scale and cottage industries of the Province to obtain Government assistance in increasing measures. This section will not be complete without a mention of the attempts to finance the cottage worker which have been

made by the organisation of Weavers' Co-operative Societies. The relevant statistics are given below :—

TABLE 54.

Year.		Number of Societies.	Number of members.	Working Capital.	Value of Sales.
				Rs.	Rs.
1925-26	.. ..	69	3,000	3,00,000	2,50,000
1929-30	.. ..	55	2,539	2,63,722	2,27,514
1936-37	.. ..	47	2,601	2,43,461	1,32,307
1937-38	.. ..	42	2,418	2,14,930	1,10,745

It will be seen that there has been a consistent decline in the activities of the Societies and in fact it is admitted in the Registrar's report that the Co-operative Weavers' Societies have not succeeded in achieving their object. The Co-operative Department, however, works in conjunction with the Industries Department in supervising the working of the Industrial Co-operative Associations, reference to which was made in the previous section.

159. *Assistance to Industries.*—The Department of Industries has assisted the industrialists in this Province in different ways such as technical advice, giving publicity to the articles manufactured by them and helping them to get freight concession from railways, reduction in duties on the raw materials imported for manufacturing goods, etc. We give below a few instances to show the work of the Department in this connection :

(1) A firm manufacturing floor tiles applied to the Department to get I class freight classification instead of II Class for their cement flooring tiles from the railways. The firm was recommended to the railway authorities and the railway authorities were pleased to grant the concession asked for.

(2) Soap manufacturing concerns were experiencing difficulties in the manufacture of transparent soap as ordinary denatured spirit could not be used. These factories applied to the Department for help. The Department worked out a formula for specially denatured spirit to be used in the manufacture of transparent soap. The Department recommended to the Commissioner of Excise that duty-free denatured spirit should be supplied to the soap factories. The Department also suggested a selling price for such duty-free specially denatured spirit, which was agreed to by the Commissioner of Excise so far as soap factories are concerned and they are now benefiting by this concession.

(3) A factory was started for the extraction of vegetable oil by the solvent process. The factory applied to the Department for recommendation for remission of duty on petrol required in the process. The case was recommended to the local Government who approached the Government of India, but the latter did not agree to the proposal. So the firm decided to utilise benzine as solvent in the manufacturing process. The case was also investigated by this Department and the Government of Bombay was requested to address the Government of India in the matter. The Government of India issued instructions to the Customs authorities to grant refund of the customs duty on benzine imported by the concern to be used as solvent in their manufacturing process for vegetable oils.

(4) A firm manufacturing electrical bulbs approached the Department for a test report on the articles manufactured by the firm. Arrangements were made by the Department with the Indian Stores Department to test the lamps manufactured by the concern and issue test certificates in respect of the lamps submitted by the concern to that Department.

160. *Miscellaneous.*—The Director of Industries has represented the industrial interests of the Province before the various Tariff Boards on the textile industry, the woollen industry and the sericulture industry. He held a brief for the handloom weavers at the Indo-Japanese trade negotiations. The Department receives enquiries from the public for industrial and commercial intelligence and supplies whatever information it can within its limited capacity. Representations of industrial grievances are also made to the Director of Industries by the industrial interests concerned of the Province and the Director submits the same with his recommendations to the Provincial Government. He also collects information regarding the grievances of particular interests at the instance of the Provincial Government.

161. *The Department and Industrial Development.*—We have given above a detailed description of the activities of the Industries Department since its inception in 1918. We have received some criticism of the inadequacy of the work done by this Department. There is no doubt that the Department has not fulfilled the expectations which the public have entertained about it but this was inevitable under the circumstances of the inadequate finance allotted to it and constant fear of retrenchment and even abolition which have been its nightmare. The blame for not fulfilling public expectations about the Provincial Government's work for industries should really be laid at the doors of the Government who have not had a positive or determined industrial policy rather than at that of the Department. We revert to this theme in the concluding paragraph of this chapter and again in Chapter IX when we make our recommendations for the reorganisation of the Department.

162. *Other Government Departments.*—The other Departments of Government which are directly or indirectly concerned for the development of the Province are the Agricultural Department, the Forest

Department, the Jail Department, the Stores Purchase Department the Co-operative Department and the Public Works Department.

163. *The Department of Agriculture.*—The Agricultural Department is generally concerned with the improvement in the quality of agricultural and livestock products and as many of these constitute industrial raw materials, its work has direct bearing on the Province's industrial welfare. The Department is also interested in the fostering of semi-agricultural industries such as poultry-keeping, bee-keeping, etc., and is thus even more directly concerned with industrial questions. The industrial activities of the Department may be classified under the following 4 heads :—

- (1) Improvement of the quality of commercial crops like cotton, tobacco and oilseeds.
- (2) Improvement of fruit and groundnut crops.
- (3) Improvement of livestock.
- (4) Encouragement of poultry-keeping, bee-keeping, etc.

164. *Improvement of commercial crops.*—Cotton is the most important of these crops and the largest amount of work has been done towards its improvement, this work being financed mainly by the Indian Central Cotton Committee. A new type of cotton known as 1027A has been introduced in the area lying south of the river Narbada and covers an area of 6 lakhs of acres. In the Broach tract north of the Narbada another improved type known as BD has been introduced, while in the Southern Maratha country, the improved varieties Dharwar No. 1 and Gadag No. 1 have been grown with success. Further research is also being undertaken. The Department has evolved several improved kinds of tobacco in the Kaira tract namely Gandiu No. 6, Piliu Nos. 28 and 45. Recently a new variety known as Harrison's Special has also been introduced. The Department has also introduced flue-curing in Kaira and experiments on cigar making are in progress. Experiments are also being undertaken for the improvement of linseed and castor seed and the Department has helped in the extension of the area under groundnuts.

165. *Improvement of fruit and cotton crops.*—The Department maintains a research and experimental station for the improvement of fruits and vegetables and experiments are being carried out for improving the qualities of fruits like banana, mango and orange and of vegetables like brinjals and chillies by means of better manuring, selection of plant, etc. Technical advice and horticultural instruction are given by opening classes at different centres. Recently a class for training about 100 students in horticulture has been opened at the Fruit Experimenting station at Ganeshkhind. Investigations in fruit preservation are carried out in the Horticulturist's Laboratory. The Department also takes part in exhibitions and agricultural shows.

166. *Improvement of livestock.*—A Livestock Expert is attached to the Agricultural Department whose function it is to conduct research in cattle breeding and to introduce improved breeds of cattle in the Province. An intensive scheme of supplying pedigree bulls in different *talukas* has been undertaken by the Department and by the end of March 1938, 253 premium bulls had been distributed in different parts of the Province. The livestock improvement demonstrations are carried out in selected villages and as work has to be continuous before results can be achieved, the demonstrations are not shifted quickly. The Department encourages the holding of cattle shows in order to create a healthy competition between the cattle breeders and thus help to improve the general breed of cattle. A Livestock Improvement Act has been passed in 1933 which aims at the castration of all bulls except such as are approved as fit for breeding purposes. For this purpose a house to house census of pure breed, cross-breed and mongrel animals is taken in selected areas before those areas are brought under the Act so as to enable the Department to note the progress resulting from the elimination of the undesirable bulls. It is a matter for regret that the Act has so far been applied only to a few villages in the Sholapur and the West Khandesh districts.

167. Recently the Department has undertaken a scheme for the improvement of milch buffaloes and the different breeds of milch buffaloes of the Province are being examined for the purpose.

168. A sheep breeding farm financed by the Imperial Council of Agricultural Research has been started at Poona in 1937. The object of the farm is to evolve a breed of sheep which will be superior to that existing in the Province to-day; it is expected that the wool of the improved sheep would be superior in quality to the present rough supplies.

169. *Encouragement of poultry-keeping, bee-keeping, etc.*—A scheme for the improvement of poultry in villages has been started in 1935, following the Government of India's grant for village uplift. The object of the scheme is to improve the laying quality and size of the poultry. Cockreals of pure breed are selected for distribution among villagers who keep fowls and are interested in poultry farming. More than one thousand male birds have been put out in about 95 villages since the scheme was inaugurated. It is reported that the demand for pure breed cocks is rapidly increasing and only the want of funds stands in the way of the further extension of the scheme.

The Department has also made attempts at improving pedigree poultry by grant of premium to poultry farmers. Two types of premia are given—one for housing of Rs. 100 each and the other for the purchase of fowls and eggs of Rs. 75 each. At present there are about 17 poultry keepers in the different districts who have been granted such cash premia. Practical demonstration farms under poultry propaganda offices have also been opened with a view to demonstrate the best and practical way of poultry-keeping to the villagers. The Department also trains students at the Central Poultry Farm, Kirkee, which is equipped with modern

appliances and is being run on a scientific basis. About 60 students have been trained in this farm so far. The marketing side has not been forgotten and a Co-operative Egg-sale society has been started at Yellur in the Satara district. The eggs are collected from 18 neighbouring villages and marketed through commission agents. During the two years of its existence this society is reported to have sold more than 35,000 eggs. Recently an egg marketing scheme has also been started in the Belgaum district.

170. As regards bee-keeping, not much work has been done by the Department so far and only very recently a research centre for bee-keeping has been started at the Ganeshkhind Fruit Experimenting Station, Poona. Besides research work, the centre also gives training to about 76 students in bee-keeping.

171. *The Forest Department.*—The energies of the Forest Department are mainly devoted to the protection, conservation and development of forests and the exploitation of forest resources so as to obtain maximum revenue yield for the Government consistent with the permanent maintenance of the forests and the supply of people's needs in the matter of forest products. No effort has been undertaken by the Forest Department to attempt the utilisation of forest products for industrial purposes. In fact, the Forest Department has no machinery for this purpose. A suggestion had been made by a Government Committee for the appointment of a Forest Economist to be attached to the Department whose main function will be to study the forest resources of the Province from the point of view of their industrial utilisation and bring those facilities to the notice of the industrial public. No such appointment has been made however. The Department of course does undertake the collection of information of an industrial kind, but the initiative rests outside. It may be added that any research into the possibilities of the industrial utilisation of forest products has got to be sent to the Forest Research Institute at Dehra Dun.

172. Apart from this, the system at present adopted by Government of obtaining revenues from their forest resources is stated to be not quite consistent with the maximum utilisation of forest resources. Reference has already been made to this in Chapter VI where we have mentioned two sets of complaints: (1) by a ship-building firm in Ratnagiri about the desirability of dropping the system of annual auction for selling timber and (2) of people like tanners who complain of the cessation of the privileges they originally had of collecting certain minor forest produce. Reference may also be made in the same connection to the attempt made by the bamboo workers of the Province for the supply of bamboo to them at concession rates. All these complaints are really traceable to the want of a special officer in the Forest Department who will assist the Chief Conservator and Government in (1) so framing the policy of obtaining revenue from the forests as to be consistent with the industrial interests of the Province and (2) giving to the cottage workers utilising forest products such concessions as can be of material assistance to them.

173. *Jails*.—In addition to safeguarding society from the menace of law-breakers, jails serve the purpose also of industrial schools and the prisoners are taught a number of useful occupations that can enable them to lead an honest life after they are discharged from prison. Among the industries carried on in jails may be mentioned the following :—

- (1) Weaving of cloth and of cot tape.
- (2) Carpets.
- (3) Cane work.
- (4) Carpentry.
- (5) Smithy.
- (6) *Mochi* work.
- (7) Pottery.
- (8) Brick and lime making.
- (9) Rope-making.
- (10) Coir and *munj* mats.
- (11) Poultry-keeping.
- (12) Rat-trap making.
- (13) Tailoring.
- (14) Umbrella making.
- (15) Bakery.
- (16) Soap making.

It will be seen that the list is quite comprehensive. Most of these industries are handicrafts and the raw materials are obtained locally as far as possible. It is stated that on an average more than 3,000 prisoners are engaged in these industries every year. There is no marketing problem here as the articles produced are sold to Government Departments.

174. *Co-operative Department*.—As for the Co-operative Department, we have already seen that they have made attempts to organise Weavers' Co-operative Associations and these attempts have not been very successful. Some attempts have also been made to form Artisans' Co-operative Societies such as the Leather Workers' Society in Dharwar, but these have not been on a scale sufficiently large to affect the bulk of the industrial population. It is stated that the procedure of election and, generally speaking, the application of the democratic method has got its failings in its working with regard to such societies ; and energy gets wasted on elections, communal and other dissensions standing in the way of co-operative action. Nevertheless the co-operative method is the only ideal method for organising the small scale units such as the artisans are and that goal has to be kept in view, even though methods involving more outside control over the artisan may be necessary for the immediate purpose of improving his condition. All these factors

will have to be taken into account when we come to discuss the details of the machinery to be entrusted with the task of tackling the artisan's problems.

175. *Stores Purchase Department.*—The Provincial Government was given liberty in respect of purchase of stores for transferred departments in 1921 and this was extended to all their stores requirements in 1925. The Government of Bombay have laid down their Stores Purchase Policy as one of encouraging the development of industries of the country to the utmost possible extent consistent with economy and efficiency. With this end in view, a limited degree of preference in respect of price was to be allowed to articles produced or manufactured in India. Articles wholly manufactured in India came first in order of preference followed by articles wholly or partially manufactured in India from imported articles. The agency through which purchases were made was the Department of Stationery and Printing with regard to stationery articles like typewriters, safes and cash boxes, clocks and time pieces, drawing and mathematical instruments, all articles of peon's liveries including *kambhis* and umbrellas, bicycles, etc. No information is available about the effect of these measures on industrial development in the Province. Evidently, the position was not very satisfactory, for, in 1937, Government appointed a Committee to advise them,

- (1) Whether it is desirable to appoint a single agency for purchasing stores required for public offices.
- (2) Whether it is necessary to lay down higher degree of preference in respect of price and quality for Indian goods.
- (3) Whether hand spun and hand woven cloth and hand made paper should not be given preference over other kinds of Indian manufactured cloth and paper, and also to report on the financial effect of the above proposals.

The Committee has already submitted its report and has recommended that a Central Organisation should be set up for the purchase of all articles required for public offices and attached to the Department of Industries. It is also of opinion that a greater degree of preference in respect of quality and finish rather than price, is required by Indian goods and adds that preference should be given to products of this Province and to products of cottage and small scale industries. Regarding the purchase of hand spun and hand woven cloth and hand-made paper, the Committee suggests that it could be done by sanctioning additional grants for their purchase. The other recommendations made by this Committee include the passing of an Act to implement the policy of purchasing *swadeshi* articles, establishment of an employment bureau attached to the Department of Industries for technically qualified persons and establishment of a commercial museum. Government have not yet issued their orders on their Report; and so far no section has been added to the Industries Department for the purpose of executing Government's Stores Purchase Policy.

176. *Public Works Department.*—The importance of road development in enlarging the sphere of industrial activity has already been emphasised by us. In this Province, roads are looked after partly by District Boards and Municipalities and partly by the Provincial Government. There is a Provincial Road Board (now known as the Board of Communications) whose function it is to co-ordinate road development and advise Government on matters relating to construction of new roads, extension and improvement of existing roads and other questions relating to road transport. The construction and maintenance of roads is financed in four ways viz :

- (1) from Provincial revenues,
- (2) from the revenues of local authorities,
- (3) from the Government of India Road Development Fund,
- (4) from the Provincial Roads Fund.

Formerly, the construction of new roads was financed by loans, but since the inception of the Provincial Roads Fund this practice has been discontinued. The greater part of the moneys which are spent is devoted to repairs and maintenance of existing roads. Thus during the period 1921-22 to 1937-38 the Provincial Government and local authorities spent Rs. 500 lakhs and Rs. 197 lakhs respectively on road maintenance ; the corresponding figures during the same period for construction of new roads were only Rs. 125 lakhs and Rs. 79 lakhs respectively. The Government of India Road Development Fund is built up with the proceeds of the increase in the import and excise duties on motor spirit from 4 annas to 6 annas per gallon effected in 1930, and it is distributed *pro rata* to petrol consumption in the different Provinces, after deducting 10 per cent. to cover the share of the Government of India. Bombay's share has till now been about Rs 25 lakhs a year and during the period ending 1937-38, the Bombay Government had incurred an expenditure of Rs. 105 lakhs on roads from this Fund. Government have chalked out a seven years road construction programme to which they hope to get Rs. 175 lakhs from this Fund. Finally, the last source for financing expenditure on roads is the Provincial Roads Fund. This Fund is special to Bombay and was created under the Bombay Motor Vehicles Tax Act of 1935. The Fund is made up of the surplus amount from the taxation of motor vehicles remaining after distribution to Provincial revenues and local authorities specified amounts as compensation for their loss in registration fees and tolls respectively. During the three years ending March 31, 1939, this Fund had receipts to the tune of Rs. 30 lakhs of which only Rs. 12 lakhs have been spent so far.

177. The total mileage of roads maintained by Government and local authorities was 6,663 miles and 12,661 miles respectively at the end of March 1938. Of these only 9,947 miles were of metalled roads. The department in charge of the construction and maintenance of Provincial roads is the Department of Public Works which has at its head the Chief Engineer to Government. The roads maintained by local

authorities are looked after by the Engineering staff of those bodies. There are not today enough subsidiary roads connecting villages with main roads and with one another. Moreover, the road programme of the local authorities is not well planned or co-ordinated and often suffers owing to changes in the personnel of the Boards. Further, the economic objective of roads subserving the needs of the Province's industry and agriculture is not always kept in view, as there is no provision for periodic consultations between the Chief Engineer, the Director of Agriculture and the Director of Industries before new roads are planned. Under these circumstances, the Public Works Department has not played that dynamic part in promoting industrial development in the Province which it could have played; and one of the reforms to be effected in the Governmental machinery of the Province is to link up road-building with the needs of industrial development and particularly the requirements of the small scale and cottage industries of the Province.

178. *Conclusion.*—The brief review given above of the activities of the Provincial Government in the industrial field fully supports the general public feeling that State policy towards industries has been largely one of *laissez faire*. Before 1917, there was no machinery in the Government of Bombay to consider any proposition in connection with industries, for the Industries Department was started only in 1917; and even after 1917 this Department has been several times threatened with extinction on the plea of economy. The funds allotted for industrial development have been woefully inadequate. It is true that the starvation of the Industries Department has been a common feature to all the Provinces. But that this has been even more so for the Bombay Province is seen from the following statement of the expenditure in 1937-38 on the Industries Departments by the various Provinces:—

TABLE 55.

Province.	Expenditure on Industries Department (Rs. in 000s).	Total ordinary revenue (Rs. in 000s).	Percentage of expenditure on Industries Department to total revenue.
	Rs.	Rs.	
(1) Punjab	1,770·8	11,98,35	1·48
(2) United Provinces	1,368·0	12,33,78	1·11
(3) Bihar	542·4	5,03,27	1·08
(4) Assam	230·6	2,73,61	0·92
(5) Bengal	1,056·0	13,00,85	0·81
(6) Orissa	120·4	1,84,66	0·65
(7) Central Provinces	258·1	4,53,71	0·57
(8) Madras	866·6	16,00,62	0·54
(9) Bombay	572·8	12,43,81	0·46
(10) Sind	35·0	3,92,03	0·90

179. Our review has also shown that the major portion of the revenue allotted to the Industries Department is spent towards propaganda and education and not enough expenditure has been incurred on the problems of marketing, finance and research. We have also seen that the other Departments concerned with economic activity have not had a well formulated and vigorous programme of economic development. In fact, these Departments have not got an industrial bias. This is probably because there is not enough co-ordination between the different Departments that are concerned with the task of industrial development and there is no provision for periodic consultations between the heads of the "Economic" Departments of Government, viz., the Director of Agriculture, the Director of Industries, the Registrar of Co-operative Societies, the Chief Conservator of Forests, the Superintendent of Government Stationery and Printing Press and the Chief Engineer. It is only fair to add that things have improved a little since the assumption of office by the Congress Ministries. In our chapter on "Recommendations" we shall deal with the question of what kind of a machinery should be created that will be free from the criticisms advanced above and will better enable the Provincial Government to take its legitimate role in fostering the rapid industrial development of the Province.

CHAPTER VIII.

POSSIBILITIES OF FURTHER INDUSTRIAL DEVELOPMENT.

180. *General.*—In the previous chapters, we have presented a picture of the condition of the existing industries in the Province and also discussed their difficulties. In this chapter we propose to indicate the possibilities that exist for the creation of new industries in the Province. It would be necessary to point out that the remarks which follow are merely suggestive of possibilities, and more detailed investigations will have to be made if any concrete attempts are contemplated either by Government or by private individuals for the creation of these industries. The procedure we have followed is first to draw attention to the markets which exist in the Province for manufactured commodities by reference to the statistics of imports; we then proceed to mention what raw materials for the manufacture of these commodities are available in the Province. Finally we draw attention to those raw materials of the Province which are to-day completely wasted and indicate in a rough sort of way the possibilities of their profitable utilisation.

181. We give below a classified statement of India's more important imports in the year 1937-38 and the share of the Bombay Province in the same :—

TABLE 56.
Classified Statement of Imports.
1937-38.

	India.	Bombay.
	(Lakhs Rs.	of rupees). Rs.
<i>Textiles—</i>		
Cotton manufactures	15,55·3	597·7
Silk manufactures	1,90·9	156·5
Wool manufactures	3,30·1	158·8
Artificial silk manufactures	4,31·5	323·5
<i>Textile Accessories—</i>		
Starch, dextrine and farina	59·4	37·0
Bobbins	42·7	29·6
Pickers	8·7	7·2
Roller skins	8·4	7·5
<i>Leatherware—</i>		
Skins dressed and tanned	17·5	9·1
Boots and shoes	21·8	5·9
Other leather manufactures	35·1	28·6
<i>Glass and Glassware—</i>	151·9	63·0

	India.	Bombay.
	(Lakhs Rs.	of rupees). Rs.
<i>Paper and Paste-board—</i>		
Paper	359·6	142·9
Paste-board, etc.	55·1	20·7
Chemical and chemical preparations	332·8	100·5
Drugs and medicines	236·2	94·4
Machinery and millwork	1,715·4	541·8
Hardware	331·2	104·0
Dyeing and tanning substances	394·1	266·3
Paints and painter's materials	101·9	33·0
Belting for machinery	60·2	29·9
<i>Provision and Oilman's stores—</i>		
Canned or bottled fruit and fish	62·8	16·3
Confectionery	18·7	7·2
Milk foods	17·1	3·0
Condensed milk, milk powder, etc.	19·4	4·7
Other miscellaneous articles	142·3	42·4
Fruits, fresh or dried	158·2	86·4
Stationery	81·0	27·6
Tallow and stearine	38·4	26·8
Earthenware and porcelain	47·8	21·0
Furniture and cabinetware	21·3	7·9
Cutlery	30·6	10·7
Buttons	24·7	10·8
Gums and resins	27·3	16·8
Brushes and brooms	15·3	6·7
Manure	79·7	6·3
Tobacco (manufactured)	85·5	16·7
Toilet requisites	67·9	26·3
Toys and games	44·1	16·3
<i>Vehicles—</i>		
Motor cars, omnibuses, etc.	206·8	155·3
Cycles and parts	118·5	29·1

182. *Textiles and Textile Accessories.*—To begin with the textile imports, it should not be difficult for the Province to be entirely independent of imports of cotton textiles within a few years. The imports of artificial silk is not a matter for satisfaction. As cotton waste and short staple cotton play a prominent part in the manufacture of artificial silk experiments are in progress in Bombay for the manufacture of artificial silk from these products. Once these experiments succeed, Bombay would have added another important branch to its textile industry. With improvement in the quality of our local wool and with an extension of sericulture in the Province, there is no reason why still more branches should not be added to our textile industry. Then there are the textile accessories. Starch can be made out of *jowari* which is one of the major agricultural crops of the Province. In fact, attempts are being made in this direction already and there is a great possibility of their succeeding. As regards bobbins, the Province has considerable forest resources and we are glad to note that experimental work is being undertaken to explore the possibilities of using bamboo woods for the purpose of the manufacture of bobbins. We think that these attempts should be carried on even more vigorously. We would like to add that a protected industry like the textile industry ought to show a price and quality preference to Indian accessories and only then will the country obtain the complete benefits of the protection which has been extended to it. Pickers and roller skins are already being manufactured to some extent in the Province but there is a certain amount of disinclination on the part of the textile men to go in for Indian manufactured roller skins on the ground that the leather out of which they are made is not sufficiently fine. With improved tanning this objection should disappear and the establishment of the Tanning Research Institute and School in Khar might go some way towards making available knowledge of better skill in tanning in the Province.

183. *Leather Goods.*—As regards other leather imports, the Province exported in the year 1937–38, Rs. 52·2 lakhs worth of raw hides and skins. With improvements in tanning, a good part of these exports could be converted either into leather or leatherware and thus replace our present imports. In fact, there is no reason why we should not also visualise the building up of an export trade in leatherware.

184. *Glassware.*—As regards glassware, it may be more difficult to replace these imports by manufacture within the Bombay Province, as the raw materials for the manufacture of glass are not available in abundance in the Province. But it has been stated that the sand used in the preparation of glass is available in Kaiāra, Bijapur, Kanara, Ratnagiri and several other districts, and it should at any rate be possible to manufacture within the Province bangles and other comparatively simple glassware such as bottles. The establishment of a factory for the manufacture of soda ash will also help in the speedy building up of the glass industry.

185. *Paper and Paste-board.*—As for paper and paste-board, there are immense possibilities for the manufacture within this country of

most of the items found under this head. It is well known that bamboo pulp is a very good substitute for wood pulp in the manufacture of paper and this Province has immense bamboo resources. In fact, it is estimated that there are enough and easily available bamboo resources in the Kanara district to make possible the running of at least two large size paper factories. Indeed, the starting of one such factory has been announced and we are glad to note that the Bombay Government has lent the venture more than moral support. As regards paste-boards, we are informed that rice husk and groundnut-shells are both useful material for the manufacture of this commodity. Both these are found in enormous quantity within the Province and are at present being either completely wasted or being utilised as fuel. There is here a case for experimenting on the possibilities of starting this industry.

186. *Chemicals, Drugs and Medicines.*—Regarding chemicals, drugs and medicines, the position is not unhopeful. In fact, when the new Tata factory at Okha begins to function, we shall be able to replace a good part of the imports of chemicals. As for drugs and medicines, there are a few firms in the Province which are producing good quality drugs and medicines. But their scope can be enlarged, particularly if the import duties on the basic drugs required by them are lowered and also if the Government extends to them more active patronage. Moreover, with the vast forest resources of the Province, we should have large varieties of indigenous medicinal herbs and seeds. It was suggested to us that the Ayurvedic Ras-Shala of Poona would be willing to undertake a survey of the medicinal herb resources of the Province. We have passed on the suggestion to Government for their favourable consideration. We would only like to emphasise here the urgent need for such a survey either by this agency or directly by Government.

187. *Machinery and Millwork.*—Regarding the imports of machinery of various kinds, it is difficult to indicate the possibilities of their successful replacement. But it may be pointed out that there are some small concerns in the Province which manufacture parts of rice, flour and sugar mill machinery. Moreover, if industrialisation is to be speedily achieved in India, capital costs will have to be reduced and that can be accomplished by the building up of a heavy engineering industry in this Province. Bombay enjoys the advantages of several harbours, a large home market and a good supply of skilled labour. Under these circumstances, attempts to start a machinery industry should be made, even if it means in the first instance only the assembling of parts. Active state encouragement is necessary for this purpose and we hope it will be forthcoming in the interests of rapid industrial development. As for hardware, standardisation of specifications and of quality would be of great assistance in building up the domestic industry and this work of laying down standards and issuing certificates of quality could be entrusted to the Industries Department.

188. *Tanning and Dyeing Substances.*—Tanning materials are available in large quantities in this Province; in fact, myrobalans—an

important tanning agent—are exported every year in large quantities, while we are at the same time importing tanning extracts and even tanning barks. With a more efficient arrangement for the collection of tanning barks and other tanning materials from our forests and the application of research to the conversion of our tanning materials into tanning extracts, we should be in a position not merely to replace the imports but even to export tanning extracts.

As regards dyes, we had once a flourishing vegetable dye industry; and even now there are a number of forest products which are useful for dyeing purposes such as the seeds of the *Bel* tree, flowers of the *Palas* tree, and nuts of the *Avla* tree. Research work is necessary on the commercial utilisation of these supplies and if this is undertaken, it may free our country from its present dependence on foreign sources of dyes. The domestic manufacture of aniline dyes will also be facilitated by the setting up of the new chemical factory at Okha.

189. *Fruit Canning and other Products*.—Fruit canning and the manufacture of other fruit products is an industry that has great potentialities. The Horticulturist to the Government of Bombay mentions the following possibilities :—

1. Mango and pine-apple can be canned.
2. Fruit juices and syrups can be prepared from lime, *santra*, *mosambi*, pomegranate, *jambal* and *karwanda*.
3. Jam, jelly and marmalade can be prepared from fig, guava, *papaya*, pine-apple, *santra* and lime.
4. Banana, *karwanda*, jack-fruit and kokam can be dried.
5. *Bor* can be candied.
6. The cashew-nuts are roasted, shelled and kernels sold.

Here again scientific research is a necessary pre-requisite for the successful establishment of these industries. Reduction of import duties on the materials used, State help in establishing a factory in Bombay for the manufacture of containers, cans and bottles, and liberal loans to entrepreneurs engaging in these trades are some of the ways in which the Provincial Government can help to expand the fruit products' industry in the Province.

190. *Live-stock products*.—Live-stock products form another useful raw material available in abundance in this Province. The commercially valuable products available from dead cattle are as follows :—

1. Hides and skins.
2. Bones.
3. Meat which could be cut up, dried and used as manure.
4. Fat to be melted down as tallow and used for soap making, etc.
5. Hoofs, horns and entrails.

At present, not much use is being made of items 3 to 5; and given more care and better education, these raw materials could provide useful employment to our artisans.

We must also mention here the possibilities arising out of a valuable bye-product of butter and other milk products, viz., casein. At present, casein is manufactured by some of the big dairies in Kaira. Casein can be used as a fertiliser and it is also used in industries which prepare glue, paints, varnishes, celluloids, water-proofs, etc. It also constitutes good sizing material. The increased manufacture of casein will give a much needed subsidiary product to the dairy concerns and will help to develop the dairy industry of the Province.

191. *Fibre resources.*—The Province has also got considerable fibre resources as we have already seen in Chapter III. Not all of these resources, however, are being commercially utilised at present. Thus the *ambadi* fibre which is grown in the Southern and Central Divisions is considered to be an excellent jute substitute by the Fibre Expert to the Government of Bombay who considers that it can be made into “*sutli*” or strings, sacking, gunny bagging, cheap canvas, dyed chair backings, small dyed patterns of carpets, mats, etc. But it must be pointed out that before these can be produced, experiments will have to be conducted to improve the quality of the fibre and to ascertain its spinning and weaving potentialities. The sann hemp fibre which is also grown in the Province is superior to *ambadi* and can be used for making twines, cheap cords, loglines, fishing nets, heald cords, tarpaulins, canvas, etc. The agave fibre is another useful crop and the recent successful attempts of the Rev. Loy. L. Long of the Ahmednagar Marathi Mission at dyeing it with aniline colours, making it into braids and sewing it up into the form of ladies’ handbags, purses, belts, sandals, etc., opens new prospects for employment. In addition to these fibre crops, a good deal of linseed is grown in the Province the stem of which contains valuable fibre. Unfortunately very little attention has been paid so far to the fibre possibilities of the linseed crop. This leads to an enormous waste and it is suggested that experiments may be undertaken to find out the possibilities of making the linseed plant give an yield of both oilseed and fibre crops. There are other fibre plants growing wild in the Province about which not enough data is available. Fibre boxes and grass *champals* suggest other useful articles that could be manufactured from the supplies of grass and fibres. It is clear that a good deal of experimentation is necessary on these fibres before they can be commercially exploited with success.

192. *Agricultural and allied raw materials at present wasted.*—A good deal of agricultural produce is being wasted at present which could give rise to new industries. Rice husk and groundnut-shell can be utilised for the manufacture of straw boards and rough packing paper. Starch can be prepared from *jowari* and other grains, while banana stems which are now wasted in large quantity can be used either as fibre or raw material for manufacturing paper. Another industry that can utilise the raw materials available in the Province is the manufacture of power alcohol from *mhowra* flowers and sugar molasses. In fact, legislation has been passed in the United Provinces and in the Hyderabad and Mysore States making the mixing of power alcohol with petrol compulsory ; and this

bold measure deserves our attention, as a measure for increasing employment. Then again, in the sugarcane-growing districts like Ahmednagar, Belgaum, Poona and Satara, large quantities of sugarcane rinds are today wasted or used as fuel; these could be utilised for preparing paper boards for which there is a great demand. Improvement in the quality of the tobacco grown in the Kaira and the Belgaum districts can lead to a flourishing cigarette industry while improvements in sheep-breeding can make available for the Province better supplies of local wool. As an example of how research can help in the commercial utilisation of raw materials which otherwise would have been wasted can be mentioned the extraction of lemon oil from lemon peels on which the Department of Industries had done experimental work.

193. *Forest products.*—The forest products of the Province also offer enormous scope for building up new industries. We inquired from the Forest Department whether they had made an economic survey of the forest products to which the reply was that no such survey as such had been made; but they were interested in the problem and the Chief Conservator gave us a list of the inquiries his Department was engaged on in this connection which is reproduced as Appendix G. It is sufficient here to mention some of the industries that offer scope for profitable establishment like wood distillation, plywood factories, match making and paper making. The forests also contain a variety of soft woods like *sawar*, *karkad*, *pangara*, *kuda*, etc., which besides being useful for making match boxes and match sticks are also useful for preparing toys and sporting goods. Another suggestion which has been made is that if the timber from the forests is not removed in the form in which it is felled from the tree but converted into the required sizes or forms near the forests themselves, extra employment can be ensured in the rural areas. It will also open up new industries for the utilisation of waste material like uneven blocks of wood, small cubes of wood, etc., from which articles like handles, electrical parts, etc., can be manufactured. The saw dust which is burnt can be used for stuffing toys and other articles. There are also a number of minor forest products which offer considerable scope for establishing new industries. We have already referred to our supplies of tanning and dye materials; we have also supplies of cane and fibres, of gums and resins, of medicinal herbs, of oilseeds and other nuts and of miscellaneous products like spices, wax, honey, etc. Baskets, handbags, boxes, *champals*, etc., can be prepared from the strong fibrous grasses growing in the Kanara forests while from some of the edible gums obtainable in the forests, toffee, chewing gums, etc., can be prepared. The oil from *mhowra* seed is used for edible purposes and is also reported to be good for skin diseases. There are also good prospects for developing the manufacture of powder from *shigekai* and *rittha* nuts which are both known for their cleansing properties. Better methods of collection will also increase the available supplies of honey.

194. *Marine Resources.*—We have already seen that Bombay has a long coastline and a considerable fishing population. But our fishermen confine their activities largely to coastal fishing and do not take

their boats to more than 10 miles from the shore with the result that Bombay's catch of fish in a year is estimated to be only 50,000 tons. As against this, Japan where deep sea-fishing is practised on a large scale, obtained in 1934 a catch of 5 million tons or more than 100 times Bombay's.

This Province has also sea fisheries resources on an extensive scale and it is necessary that these resources should be exploited. The resulting increase in the supplies of fish will not only lead to a more balanced diet on the part of the population but will also become the basis of other industries like manufacture of fish manure, fish guano, fish meal, fish oil, fish maws, etc. It is, however, necessary to sound a note of warning that methods to be followed for exploiting the sea fisheries of Bombay Province should not be such as to lead to either unemployment or diminished earnings for the existing fishing population.

195. *Miscellaneous.*—This brief note on industrial potentialities cannot be ended without reference to the possibilities of the semi-agricultural industries like poultry-keeping, bee-keeping, seri-culture, etc. It is also necessary to refer to the possibilities for establishing the aluminium industry in this Province which have been disclosed by the discovery of bauxite deposits at Tungar Hill near Thana; clay suitable for high class potteries is stated to be available in the Khanapur *taluka* of the Belgaum district and in the Thana, West Khandesh, Dharwar, Ratnagiri and Kanara districts; these open out prospects for establishing a high class earthenware industry in the Province. We should also like to mention bakelite, electrical goods, raw films, radio sets, bicycles, automobiles, etc., as other commodities which offer scope for domestic manufacture. The list is by no means complete nor can we give our definite opinion that all the commodities mentioned in this chapter can be easily manufactured in this Province. But enough has been said to show that there are vast possibilities for expanding and extending the industrial structure of the Province; and given enough organised effort on the part of entrepreneurs and sympathetic help by Government in the way of research and financial facilities, there is no reason why a part at any rate of these potentialities cannot fructify in the near future.

CHAPTER IX.

RECOMMENDATIONS.

196. Before proceeding specifically to discuss the problems of the industries in the Province, we feel it necessary to refer to certain considerations of a general character which are relevant to the problem of industrial improvement. Thus transport facilities, health conditions and extent of literacy determine the limits of industrialisation and unless these fundamental factors are adequately tackled, the more exclusively industrial measures will either not achieve their purpose or at best fail to obtain the maximum results that otherwise will be there. We propose, therefore, to refer to each of these factors very briefly in the following paragraphs.

197. *Roads.*—From the point of view of the building up of markets and of industrial mobility in general, different centres of consumption and of production should be connected by reasonable transport facilities with one another. This condition is not fulfilled in the case of this Province. It is true that about 2,400 miles of railways, 9,947 miles of metalled roads and 9,376 miles of unmetalled roads exist in the Province, but it is not perhaps so well known that large numbers of villages are not connected even by road with urban centres or railway stations. In fact, we enquired from the Presidents of various District Local Boards and Collectors of districts about the extent of their area not served by roads and the number of their villages which were cut off from outside communication during periods of monsoon. We learnt that in a number of districts, as much as 40 to 75 per cent. of the total area was not served by road at all, while the percentage of villages cut off totally from outside communication during the monsoon came to no less than 70 to 80 in certain districts.* This is a most unsatisfactory state of affairs and explains to a certain extent the backwardness of the Province in the realm of industrial development. The injurious effects of inadequate transport facilities can find no better illustration than the district of North Kanara which in spite of vast resources of raw material and of power remains a backward area with a declining population. Something has to be done to increase and improve the transport facilities in the Province if the pace of industrialisation is to be perceptibly quickened. Even from the point of view of securing to the cultivator better return for his produce increased transport facilities are absolutely necessary. We recommend, therefore, that as a part of a policy for the economic betterment of the Province, the Provincial Government should undertake a programme of rapid road construction. It is necessary that in undertaking such a programme, proper attention should be paid by Government to the need of every district from the point of view of both increasing production and making available a better

*e.g., Thana (64·2 per cent.), Dharwar (77·6 per cent.), Surat (83·3 per cent.), Ratnagiri (84·3 per cent.).

return for the rural worker. The programme may be undertaken in consultation with the District Authorities, but once it is planned, it should not be open to any District Local Board to alter it with a change in the composition of its personnel. The funds required for the purpose need not come from the tax revenue of the Province but may be raised by loans, the Provincial Budget providing for the payment of both interest and of sinking fund charges on this debt. We cannot sufficiently emphasize the imperative necessity of Government setting right this deplorable defect in the economic structure of the Province from the point of view of both its agriculture and its industries.

198. *Literacy*.—Of equal importance from the point of view of industrial development is the imperative necessity for improving the state of literacy in the Province. We have already referred to the fact that not more than one in ten in the Province can read or write. But there is no doubt that ability to read and write does substantially contribute to improvement in efficiency of the worker, both rural and urban. From this point of view, adult illiteracy is an even more serious problem than that of the inadequate number of children of school-going age who are going to school. We are glad to note that Government are aware of the urgency of the need for liquidating adult illiteracy and that they are taking energetic steps in this direction. What is needed, however, is a definite time-table for the liquidation of adult illiteracy in the Province and the setting up of an Authority that will carry out this programme in a vigorous manner. We are laying so much stress particularly on this factor because we have been impressed in the course of our investigations with the extent to which conservatism, want of knowledge of new things and lack of desire to take up new ideas have stood in the way of the adjustment of our cottage industries to the modern situation. Unlike factory industries, in the case of cottage industries, the thinking has got to be done by the worker himself; and obviously, therefore, literacy is of even greater importance to the cottage worker than it is to the factory worker. Moreover, most of the recommendations which we make in the following pages imply for their successful execution a capacity to understand and a willingness to act on the part of the cottage worker which can exist in a substantial measure only if he is a literate person. Under these circumstances, we cannot emphasise too strongly the need for extending literacy among the adults of the Province and we proceed on the assumption that the Provincial Government will set to work even more vigorously for achieving this object.

199. *Health Conditions*.—The average expectation of life and the health conditions of workers also determine the prospects of increasing industrial development. It is true that good health is the result of various conditions, but it cannot be denied that among these conditions are the provision of adequate and easily available medical facilities. We have seen that the supply of medical facilities in the Province is woefully inadequate and as far as the mofussil is concerned, where most of the cottage industrial workers reside, the situation is even worse. The

magnitude of the problem requires that it should be tackled boldly and this can be done only by official action. From this point of view, the scheme which the Government of Bombay has recently undertaken of subsidising the medical practitioners who are prepared to set up practice in the rural areas would appear to be a step in the right direction and pursued vigorously, it might solve the problem to some extent. We recognise that under present financial conditions unless private endowments are forthcoming in ample measure, no permanent solution is possible. Even from the narrow standpoint of furthering industrialisation, we think it necessary to draw pointed attention to the enormous economic waste at present going on in the Province as a result of sickness and we would emphasise the need for an early and adequate tackling of this problem.

200. *Limitations of the Provincial Government regarding Industrial Development.*—Before making our recommendations we should also like to mention how greatly handicapped we have been by the limitations imposed by the Constitution on the capacity of the Provincial Government to undertake industrial development. It must be borne in mind that the structure, the composition and the pace of industrial development are very greatly dependent upon tariffs, transport and currency, none of which vital determinants of economic development are under the control of the Provincial Government; and without controlling these, it is difficult to carry out any industrial policy meant to result in speedy industrial development. Moreover, even when considering the measures that are constitutionally within the purview of Provincial activity, we have to bear in mind the cardinal fact that in a country like ours the implications of Provincial action in the industrial sphere extend far beyond the Provincial boundaries and that, therefore, the reactions on the other Provinces and the Indian States have to be constantly taken into account. In fact questions pertaining to industries in India are more properly the subject for investigation by the Central Government rather than by the Provincial Governments. This remark is applicable not only with regard to large scale industries but even with regard to cottage and small scale industries, especially when the questions under considerations are those of defining the relationship between these two types of industrial production and of co-ordinating their activity into a harmonious whole from the point of view of the national interest. Nevertheless, there is a good deal which can be done even by the Provincial Government and that too without evoking adverse reactions in other Provinces and in the Indian States. Our recommendations will lie naturally in this sphere. No doubt this means a serious curtailment of the scope of our recommendations; but if our proposals are to be practical we have to recognise the realities of the existing constitutional position and the consequential limitations on the independence of action of a non-sovereign political unit like a British Indian Province.

201. *Terms of reference.*—We now proceed to our more specific recommendations regarding the industries of the Province. At the outset it may be pointed out that our terms of reference do not require us to examine the problems of large scale industries. It is not that we are not concerned at all with the subject of large industries, but we are only concerned with them in so far as we have been asked to consider small industries in relation to large scale industries. Moreover, the most important of these organised industries namely the mill textile industry is already under examination by another Government Committee. We have, therefore, refrained from making any detailed examination of the condition of individual large scale industries in the Province. The main questions referred to us are the position of cottage and small scale industries in the Province and their relationship to large-scale industries and to agriculture. We have also been asked to review the work done by the Bombay Government in this field and to examine in detail the effectiveness of the machinery they have set up for dealing with the industrial problems of the Province. Lastly, there is an omnibus clause in our terms of reference directing the Committee to formulate a scheme of economic development of the Province. We have interpreted this omnibus clause as limited in its scope by the previous clauses and have, therefore, confined our recommendations to the industrial development of the Province instead of to the larger question of its economic development. In fact, if we were expected to lay down a plan of economic development of the Province, we would have required much more material, a much larger staff and a much longer period of time than we actually obtained. Moreover, it had been made clear to us in the informal discussions we had with the Honourable Minister when this Committee was constituted that we were to examine the question of the position and prospects of the industries of the Province, especially of its cottage industries and not of its economic life as a whole. For these reasons our enquiry has been confined only to an examination of the condition of cottage and small-scale industries of the Province and the work done by the Government of Bombay to help them; the other industries and agriculture come into the picture only in so far as they have any relation to these industries.

202. We propose to deal first with the question of the relation of cottage industries to agriculture and then with the relation of cottage industries to large scale and small scale industries. Then we discuss the various difficulties of the cottage industries and of the small scale industries that have been set out in detail in Chapter VII and make our recommendations for dealing with those difficulties. Finally we examine the work done by Government in the field of cottage and of small scale industries and make our recommendations regarding the ways by which this work could be extended and made more effective. A summary of our principal recommendations forms the subject of the next chapter.

203. *Cottage Industries and Agriculture.*—The relation of cottage industries to agriculture is an important economic problem and requires to be dealt with in any formulation of a Provincial industrial policy. It is common knowledge that agriculture in India is in a very depressed condition and the cultivator finds it difficult to make both ends meet. Among other reasons for this state of affairs there are two which are particularly relevant from our point of view. One is the extent of unemployed time the cultivator has extending over a period of 4 to 6 months, particularly those who grow only one crop; the other is the extent of unemployed time that women belonging to the agricultural classes have extending over a considerable part of the year. This was not so much the case in the past when rice husking, flour grinding, hand-spinning and other subsidiary occupations were a generic part of rural economy. We feel that while there are other ways of increasing the cultivator's income they would not be sufficient to raise it in any substantial measure unless employment additional to agriculture is provided for the agricultural classes—both men and women. We are convinced that it is a matter of cardinal importance to provide the cultivator with occupations which he can take up within the limitations of the time and capital that he has at his disposal. We have in fact considered this question so important that we passed the following resolution on the subject:—

“Looking to the extent of part-time unemployment prevalent amongst the agricultural classes and to the need for increasing the cultivator's income, the Committee feels that the industrial policy of the Provincial Government should be such as to promote part-time occupations for the cultivators and agricultural labourers. With this end in view the Committee feels that all possible steps should be taken to promote industries like hand-spinning, rice-husking, basket-making, rope-making, etc. The Committee also feels that the road programme of the Province—both extension of roads and the maintenance of the same—should be so timed and regulated as to afford part-time employment to the agricultural classes. Another useful way of dealing with this problem is to encourage industries ancillary to agriculture such as dairying, poultry-keeping, bee-keeping, etc. It is, however, necessary to make it clear that the Committee is at the same time of the opinion that everything should be done for the industrial development of the Province on all fronts; and methods other than the cottage method should also be encouraged especially for the production of articles which the villagers cannot produce by their spare time occupations.”

204. *Government and Subsidiary Industries.*—If we examine what Government have done in the matter of providing subsidiary industries for the cultivator, it seems that they have not realised to the full the importance of subsidiary occupations in the Provincial economy. The

question was discussed at length at the meeting of the Bombay Provincial Board of Agriculture as long ago as the 25th and 26th August 1925 and a statement was submitted by Rao Saheb Bhimbhai M. Desai, Deputy Director of Agriculture, Gujarat, showing the secondary industries connected with agriculture which could be introduced in different parts of Gujarat. It was agreed at this conference that "there is emphatic necessity for the more general development of alternative or secondary occupations of agriculturists who under present conditions have necessarily a large amount of unoccupied spare time". It was also resolved "that the Board recommends the appointment of a committee including the Director of Agriculture and the Director of Industries to collect data as to what other secondary occupations should be further investigated and that Government should thereupon arrange for special enquiries to be made in the directions suggested". It is deplorable that these resolutions remained a dead letter and no action was taken on the same, excepting for the sanction of a peripatetic school to the Department of Industries for demonstrating hand-weaving to the agricultural classes. The problem of the importance of subsidiary occupations was again emphasised by the Royal Commission on Agriculture but nothing concrete has been done in the direction of recognising the importance of this factor in the formulation of an industrial policy. We are convinced that something immediate should be done to promote and provide subsidiary occupations for the agricultural classes in order to solve the problem of rural poverty; a definite turn should be given to the industrial policy of the Province from this angle. We are happy to note in this connection that the Government of Bombay has recently begun to give a subsidy of one anna per yard of *khaddar* woven in the Province. It cannot be too strongly emphasized that under existing conditions of technical knowledge and taking into account the enormous number of persons for whom a subsidiary occupation is required, hand-spinning is almost the ideally suited subsidiary occupation for the Indian agriculturists. It involves very little capital, it is not difficult to learn, it can be taken on and left off at the cultivator's convenience and it fits in with the century old traditions of the countryside. We cordially approve of the action of the Government of Bombay and recommend an extension of the same. We also commend the policy underlying the grant which they have made to the All India Village Industries Association.

The steps taken by Government so far are not enough and more should be done to positively promote subsidiary occupations for the cultivator. Thus, for example, one of the first things that should be done is to make a detailed examination of the articles purchased by the Government with a view to finding out which of these could be produced in villages. Then again it is necessary that research work—both technical and commercial should be undertaken on the possibilities of

reviving the villages industries which have already perished as also those of introducing new village industries that would give a supplementary occupation to the agricultural classes. For the research work involved in both these suggestions it would be necessary to set up a Provincial Cottage Industries Research Institute. We shall say more about this in a subsequent paragraph. Then again, there are certain industries which all the world over are recognised as ancillary to agriculture such as dairying, poultry-keeping, bee-keeping, sericulture, sheep-rearing, etc. Not enough work has been done by the Provincial Government to study the problems of these industries* and there is also no doubt that looking to the magnitude of the problem very little has been done to popularise these occupations or to improve their efficiency. We may also mention here the importance of finding profitable employment of a spare time kind for the women of the Province—especially those resident in rural areas. The problem is also acute in urban areas in the case of women of the *zenana* class and of the lower middle class. The Mysore Government have recognised the importance of this subject by opening a Home Industries Section and by giving training to women workers in occupations that they would follow in their homes. There is no reason why the Bombay Government should not pursue a similar policy and provide demonstration parties that will popularise simple occupations which women in rural areas can take up as their spare-time occupations. Where necessary, organisational assistance should be given by which part-time cottage industries like spinning, mat-making, coir-making, hosiery, match-box making, etc., could be introduced in suitable areas. In short, subsidiary occupations are required by both men and women in rural areas; and such occupations could be provided only by the institution and expansion of part-time cottage industries. For ensuring the achievement of this objective, systematic and organised effort is necessary and it should be properly planned and guided from above. We recommend, therefore, the creation of a special section of the Industries Department for this purpose.

205. *Part-time Cottage Industries section of the Industries Department.*—This special section of the Industries Department should be known as the Part-time Cottage Industries Section and it should be under the charge of an Officer of the rank of Deputy Director. The function of this section would be to explore the possibilities of finding part-time cottage industries for giving subsidiary employment to both men and women in rural areas. We reproduce as Appendix F. a list

*Only recently, the Provincial Government have started research work on ways of improving the breed of buffaloes and of sheep, poultry-keeping, etc.

of cottage industries district by district some of which could be taken up both as part-time and whole-time cottage industries and some only as whole-time cottage industries. The proposed Part-time Cottage Industries Section should investigate the possibilities of the industries mentioned in this list and make additions to the same. The steps necessary for the active promotion of these subsidiary occupations should be worked out district by district and the organisational assistance that Government can render in such matters as the choice of occupation, the provision of raw materials, the finding of markets and the improvements in design, etc., which make for readier saleability should all be the concern of this section. It should also refer to the proposed Provincial Cottage Industries Research Institute problems bearing on the improvement of the implements and methods used in part-time cottage industries as also those relating to the chances of exploiting available raw materials such as those referred to in Chapter VIII by part-time cottage methods. This Section should work in close co-operation with the Agricultural and Forest Departments and it would be necessary to appoint part-time cottage industries inspectors in each district who would report on the problems mentioned above to the Deputy Director and take his instructions. The Deputy Director should be guided in the activities of his Section by an Advisory Board to be known as the Provincial Board for the Promotion of Part-time Cottage Industries. The Board should consist of not less than twelve members including the Director of Industries, the Director of Agriculture, the Chief Conservator of Forests, the Director of rural Development and the Registrar of Co-operative Societies, the Chief Engineer to Government, two representatives of the Provincial Legislature, one representative of the All India Spinners' Association, one representative of the All India Village Industries Association, and some other non-official experts in rural economic development. The Deputy Director may act as Secretary to the Board. In addition to guiding the work of the Deputy Director of Part-time Cottage Industries and his Section, we are of opinion that the Board should consider larger questions of policy such as what protective measures are necessary if subsidiary industries are to have an important place in the Provincial economy. Beyond expressing our approval of the principle of subsidy that the Government of Bombay is already following with reference to *khaddar*, we refrain from a detailed examination of this question because we believe that it involves inter-Provincial and inter-State implications and unless they are considered by representatives of the Government of India, the Provincial Governments and the Governments of the States, it would be difficult to lay down a comprehensive policy. Consequently we suggest that after the proposed Board for the Promotion of Part-time Cottage Industries has considered this question in detail, the Provincial Government should address the Government of India, the Governments of other Provinces and the Indian States inviting them to a Conference convened solely for the purpose of discussing the place of subsidiary industries in Indian economy and the ways and means to achieve the same. We are aware that there is an

Industries Conference which is convened by the Government of India every year which representatives of the different Indian Provinces and the Indian States attend, but this conference has not appreciably concerned itself with the problems of part-time cottage industries. Moreover, problems of part-time cottage industries are so peculiar and also so important from the point of view of the economic betterment of the countryside that only a special Conference of the kind suggested above can do adequate justice to the question. We think in fact that only after such a conference has been held and only after agreed protective measures have been taken on an All-India scale for the promotion of subsidiary or part-time cottage industries will it be possible for the proposed part-time cottage industries Section of the Industries Department effectively to function within the Province.

206. *Cottage Industries and large-scale industries.*—One of the questions referred to us was the relation of cottage industries to large-scale industries. There is no doubt that several large scale industries do compete with several cottage industries; and many cottage workers resent this competition. The handloom weaver complains of the mill, the cart maker and the cart driver complain of the bus, the potter complains of the aluminium factory and the brass and copper worker complains of the factory-made brass and copper utensils. But the existence of this competition should not make us forget that there still are, even in the case of articles where there is competition, special markets for cottage products where the latter can easily hold their own. Then there are commodities for the production of which the cottage industries are especially suited such as gold and silver ware, lacquered ware, embroidery, cane work of various kinds, sandalwood and ivory carving, production of fancy articles from fibre and a number of art-crafts; the cottage workers who are engaged in the production of these commodities have no quarrel with large-scale industries. Finally there are some cottage industries which not only do not compete with large scale industries but are actually dependent upon the existence of the latter. Some examples of such industries are tape making, bobbin making, motor cushion making, manufacture of leather articles required by textile mills such as pirns, pickers, rollers, etc., and calico printing on mill cloth. There are also a number of services which have followed in the wake of large scale industries particularly those of repairs which give whole-time employment to a number of what may be described as cottage workers. It will appear, therefore, that there need not be any fundamental conflict of interest between large scale industries as such and cottage industries and the prosperity of the latter would not necessarily mean the decline of the former. It should be the business of the Industries Department to explore all the possibilities for the establishment and expansion within the Province of those cottage industries which do not compete with large scale industries. It is also possible to combine large scale methods of manufacture with some cottage processes such as e.g., factory-made splints and veneers accompanied by match-making as a cottage industry as in the Madras

Presidency. Possibilities of this kind should also be investigated by the Industries Department. When all this has been done, however, there is no doubt that there will still remain a large industrial field where there is sharp competition between the products of cottage industries and those of large scale industries. This is particularly true of the textile industry. Representatives of the Bombay and Ahmedabad Millowners' Association attempted to prove by reference to statistics of mill production, imports, the estimated handloom production, etc., that the organised cotton textile industry was mainly competing with the products of similarly organised foreign textile industries and not with those of the local handloom weavers. We are unable to accept this contention in toto. There is no doubt that the mill product whether imported or indigenous, has been steadily encroaching on what used to be the handloom weaver's preserve and the most recent example of such penetration is in the field of women's clothing. It may be true that the mills are not making *saris* and *khans* exactly of the kind which the handlooms make, but they are certainly making *saris* and bodice cloth which women have for various reasons taken to wearing in preference to the handloom variety. The representatives of various handloom weavers' Associations such as those of Brihan Maharashtra Weavers' Association, Karnatak Weavers' Association, The Industrial Co-operative Association, Ahmednagar, The Industrial Co-operative Association, Hubli, etc., bitterly complained of this competition and some of them suggested the imposition of a duty on mill cloth while others pleaded for a statutory division of the textile market between the mill industry and the handloom weaving industry. We are unable to consider these suggestions in detail and make our recommendations thereon, because we are convinced that unless power is obtained to control imports effectively, any such action may result in benefit to neither the local handloom weaving industry nor the local mill industry. Moreover, the organised mill industry is not located only in this Province and any action taken by the Provincial Government may only result in loss to the local mill industry without any advantage to the handloom weavers. Finally all such actions restrictive in some measure or other of the activity of large-scale industries inevitably raise inter-Provincial and inter-State questions which cannot be solved by the unilateral action of a single Provincial Government. In our opinion the question of regulating the activities of large-scale industries particularly the textile industry which compete with cottage industries is a subject which cannot be decided upon by the Bombay Government and we recommend that this question should be referred by the Bombay Government to a special Conference of the representatives of the Government of India and the other Provinces and State Governments in the country and Provincial action should follow the lines of an agreed policy that such a conference may adopt. We would like at the same time to record our opinion that in case powers are obtained to control imports as suggested above and an agreement is obtained from the other Provincial and State Governments on the matter of the regulation of large-scale industries competing with cottage industries, some

regulation of the kind referred to above particularly a division of the market accompanied by a duty if necessary to prevent the encroachment of the mill market into the handloom market offers a possible solution. We think, however, that the whole question should be examined in all its various aspects by the Conference the convening of which by the Bombay Government we have recommended above.

207. *Cottage industries and Small-scale industries.*—The relation between the small scale and cottage industries is also of a mixed kind. Partly it is one of co-operation and partly one of competition. Perhaps the latter aspect is more prominent because production being on a small scale, the commodities in small demand, which the large scale industries would not touch, become profitable to the small scale industries to manufacture. Thus the complaints of the handloom weavers have been far more bitter about the competition of the powerlooms of Bhiwandi, Ichalkaranji and Sangli than about that of Bombay and Ahmedabad mills. Factory-made tiles, factory-made coir, iron furniture, factory-made soaps, mill-pressed oil, mill-ground flour and mill-husked rice—all these directly compete with cottage products and lead either to their elimination or to an uneconomic diminution in their price. All this does not mean, however, that there is a very positive case in favour of placing restrictions on the activity of small-scale industries in the Province. Small-scale industries while sharing with large-scale industries the quality of superior efficiency over cottage industries possess the additional advantage of employing a larger number of persons per unit of output than the large scale industries. Moreover, the number of cottage industrial workers affected by the competition of small-scale industries is not large if we exclude from our purview the textile industry which has to be treated as a special case and industries like rice-husking, flour-grinding, etc., which on dietetic grounds might not be found suitable for the use of machinery. At the same time as we have already pointed out in a previous paragraph, there are certain cottage industries like e.g., sandalwood carving which are so vitally dependent on the use of human skill and artistic powers that they will always remain cottage industries. Moreover, there is nothing to prevent the carrying on of experiments for the efficient manufacture by cottage methods of commodities that are being so manufactured inefficiently today or that are not being manufactured by cottage industries at all. We are not, therefore, in favour of any restrictions being placed on the activities of small scale industries as such. Both small scale industries and cottage industries have their legitimate place in the Provincial economy and nothing should be done by State action to prejudice the chances of the former. The position, however, is different as far as the textile industry is concerned. We have already pointed out in the previous section the immense importance of hand-spinning as a part-time cottage industry. If hand-spinning is to be recognised as a very important part-time cottage industry and if it is going to be promoted by State action, it is also essential that the weaving section of the textile industry should be in a position to utilise the output of hand-spun yarn. From

this point of view the multiplication of these small power loom factories cannot be considered as a desirable feature. Moreover, the handloom weaving industry today is in an extremely distressed condition and if it is to be given some time to organise itself, it is but necessary that the competition which it has to face from machine-made products should not be allowed to progressively increase. Under these circumstances we consider the unlimited increase of small power-loom establishments to be fraught with some danger to the successful reorganisation of handloom weaving industry as also to the widespread development of hand-spinning industry. Before taking steps to regulate any further increase in the number of small establishments, however, it would be desirable for the Provincial Governments to obtain the opinions of the other Governments and the Government of India on the subject. Even though the sphere of Provincial action is larger in the case of small scale industries, it is nevertheless true that even in their case inter-Provincial co-operation is necessary for any comprehensive action. The industries connected with the preparation of food such as rice-husking and flour-grinding also deserve to be treated in a special category because of the admittedly superior dietetic value of hand-ground flour and hand-husked rice. Incidentally the encouragement of hand-husking and hand-grinding will provide a subsidiary occupation to the agricultural classes particularly to their women-folk and thus it will help to alleviate the problem of rural unemployment. But the more important reason for the encouragement of cottage methods in these two spheres should be that of improving the quality of the diet. Our general conclusion on the subject of the relation of cottage industries to small-scale industries, therefore, is that excepting in the realm of the textile industry and of the food industries mentioned above, no special measures need be taken by Government to regulate their relations.

208. *The difficulties of cottage industries.*—We have seen in Chapter VI that the cottage worker suffers from a number of handicaps all of which are natural to unorganised and extremely small industrial units. Thus he is not able to get raw materials of good quality and he has to pay high prices for such raw materials as he is able to obtain. He is unable to introduce new methods of manufacture or new patterns and designs. He finds it extremely difficult to sell his output and when he does manage to sell, he gets only uneconomic prices. Above all, he is illiterate conservative and more or less in the grip of the middleman. This state of affairs can be remedied only if the cottage workers of the Province are so combined as to give them the benefits of large scale organisation. This kind of organisation, however, we are convinced cannot be expected to spring spontaneously out of the endeavours of the artisan classes. State help and initiative of substantial nature and over a continued period are essential and in fact in the beginning we feel that State management is also necessary.

In addition to organising the cottage workers into associations that will secure them the benefits of large scale of organisation, the Government can also help the cause of cottage industries in the Province by several

other methods such as the formation of a Provincial Cottage Industries Research Institute, the formulation and execution of a stores purchase policy with a cottage bias, the holding of periodic exhibitions and the creation of permanent museums for the popularising of cottage products, and the formation of an organisation that will help to finance the industrial requirements of the cottage workers. In the following paragraphs, we proceed to discuss each of the measures mentioned above in somewhat greater detail.

209. *District Industrial Associations.*—The task of organising the cottage workers has been attempted by the Provincial Government with regard to handloom weavers in places like Ahmednagar, Hubli, Sholapur etc., and District Associations have been formed in these places. We have reviewed the activities of these bodies and we have found that partly because of the limited funds at their disposal and partly because of the democratic character of their organisation, they have not been able to touch more than the fringe of the problem. Moreover, their activities are confined only to one class of artisans namely, handloom weavers. We feel that a more comprehensive type of organisation is necessary. We recommend, therefore, that each district should have an Industrial Association. Membership should be open to all whole-time cottage workers of the district, including handloom weavers. The management of the Association should be in the hands of a District Industrial Officer assisted by a Local Advisory Committee on which the local cottage industries should have representation. It is imperative, however, that in the beginning, at any rate, the District Industrial Officer should be responsible for his work to a Deputy Director of Industries in charge of cottage industries and shall not be subject to the control of the Local Advisory Committee. We know that this procedure may not appear to be a democratic one, but we are definitely of opinion that for some time at any rate efficiency requires that Industrial Associations should not be controlled by elected representatives of local interests. The ultimate goal of course, will be of converting these District Associations into co-operative bodies of artisans, the management and control resting in the hands of elected representatives. But the very achievement of that goal requires that it should be proceeded with gradually.

210. *Functions of the District Industrial Associations.*—These Industrial Associations will have the following functions :—

(1) to ascertain the number of whole-time cottage workers in the district and their industrial requirements,

(2) to supply to such of these artisans as are prepared to abide by the rules laid down by the Association adequate quantities of raw materials of the type required by the artisan.

(3) to sell on the hire purchase system tools and appliances to the artisans,

(4) either to buy outright from the artisans their finished products or/and to arrange to sell the artisan's products on commission, advancing to the artisan in the meanwhile cash against stock,

(5) to organise demonstrations and exhibitions in the district to display improved implements and better methods of manufacture,

(6) to report to the Deputy Director of Industries the grievances—both technical and otherwise—of the artisans concerned and to attempt to get those grievances redressed,

(7) to keep statistics of the production of the various cottage industries in the district,

(8) to give all assistance to the District Officer in charge of part-time cottage industries in carrying out his duties,

(9) to explore the possibilities of new cottage industries that could be started in the district that will produce either commodities as present produced by small scale and large scale industries or entirely new commodities, and

(10) finally to bring before the Provincial Cottage Industries Research Institute (described later on) various technical problems of the cottage industries functioning in the district.

211. *Rules governing the membership of the Association.*—Membership of the Association will be open to all whole-time cottage workers resident in the district who are prepared to observe the rules and regulations laid down by the Association. A nominal fee might also be charged from members. The rules and regulations governing the conduct of members have necessarily to be strict, as, unlike in the case of cultivators who own some property that can serve as a basis for credit, the artisan has hardly any property worth the name. The Committee do not propose to frame these rules in detail, but they suggest that when the rules come to be framed, they should include the following provisions:—

(1) no member will be permitted to buy raw materials from outside the Association or sell his finished products outside the Association.

Failure to observe this rule should involve not only loss of membership, but also the payment of reasonably heavy penalties.

(2) Every member should undertake to produce articles of the pattern and type that are given to him by the District Industrial Officer, the finished product to be delivered within a period previously agreed upon between him and the Officer. Delay in delivering the finished product shall be followed by penalties; the fine amount to be increased progressively with every day for which the finished product remains undelivered.

(3) The claims of the Association on the property of members for debts due to the Association from them shall have priority for recovery over all their other debts.

These rules may appear to be unduly strict and it may even be feared that their net result might be to scare away the artisan from joining the Association. But those who are familiar with the habits and ways of living of the Indian cottage worker know full well that without a disciplined organisation, not only will his industry suffer further

deterioration, but his ways of living may finally make him unfit to be a useful member of society. It is, therefore, in his own interests that there should be in the beginning strict regulation of his profession and conduct. We do not think that these rules need scare away the artisan for all time. If the Association proves of immense service to him in obtaining raw materials at reasonable rates and in selling his finished product, he is bound to appreciate in time disciplined and orderly work.

212. *Co-ordination of District Industrial Association.*—The District Industrial Associations of each regional Division of the Province should be co-ordinated into a Divisional Association which will be in charge of an Assistant Director of Industries. The main functions of this Officer will be supervisory. It will be his business to see that the District Industrial Officers perform their duties properly. He will also give them such advice and assistance as they may require in the carrying out of their duties. He will also deal with intra-district problems and problems arising from the district which have a bearing over the whole Division. He might be assisted by an Advisory Committee, representing the cottage industries of the Division as a whole. Over these Divisional Assistant Directors there should be a Deputy Director of Industries in charge of cottage industries whose function will be to co-ordinate the activities of his Divisional Assistant Directors. It will also be his business to issue an annual report on the state of cottage industries in the Province, the material for the same being made available by the District and Divisional Officers. He will also be in charge of the Provincial Cottage Industries Research Institute, the establishment of which is recommended in a subsequent paragraph and he will have to see that the research carried on at the Institute is linked with the needs of the different districts and leads to practical results in the direction of improving cottage industries. He will also in general act as the spokesman of cottage industrial interests and represent problems and difficulties to the Provincial Government, to the Chambers of Commerce and other representatives of large-scale industries, the railway authorities and other transport organisations and through the Government of Bombay to the Government of India and the Governments of other Provinces and States. It would be desirable if the Deputy Director is assisted by an Advisory Board on which there should be representatives of cottage industries, of the Provincial Assembly and of other representatives of expert opinion. In fact, if such a body is created, it could well be formed in the first instance by the existing Cottage Industries Committee of the Provincial Board of Rural Development. The two Deputy Directors of Industries—one in charge of cottage industries and the other in charge of part-time cottage industries—will both be under the control of the Director of Industries who will have to see that the interests of these two types of cottage industries are harmonised and that the activities of these two sections of the Department are so carried out as to result in the efficient and harmonious economic development of the districts of the Province on cottage lines.

213. *Provincial Cottage Industries Research Institute.*—There are a few other directions in which also the State can assist in the development of cottage industries. The most important of these would be to establish a Provincial Cottage Industries Research Institute. It is well known that cottage industries have been neglected by inventors and industrial specialists as a type of industrial organisation not worthwhile to work for. The result has been that the implements used in cottage industries and the methods of manufacture employed, particularly in our country, are comparatively antiquated and primitive in character. This feature naturally adds to the inefficiency of the cottage industrial unit and makes competition with industries organised with up-to-date machinery difficult. That there is a good deal of scope for improvement is evident from the work which has been done by such non-official organisations like the All India Spinners' Association and the All India Village Industries Association. The All India Spinners' Association has been in existence for 14 years. It has succeeded in devising spinning wheels whose efficiency is several times greater than that of the wheels it has replaced, and it has also devised a hand-ginning machine that is several times more efficient than the one which used to exist previously. When it is remembered that the All India Spinners' Association is a non-official body and has not sufficient technical assistance at its disposal, it is clear that much more can be done if only there is a well-equipped and properly staffed Research Institute whose sole function will be to work on problems of interest to cottage industries. The scope of the Institute's activities should not merely be to devise implements and methods of manufacture that will result in a larger output, but also to improve the quality of the output particularly at the finishing stages. The Institute should also explore possibilities of obtaining local raw materials for the use of cottage industries of the Province. There should be provision not merely for attending to problems that are sent up by the District Industrial Officers, but there should be also scope for original research. It is desirable that this Institute should be established as early as possible and should preferably be located outside the city of Bombay.

214. *Stores Purchase Policy.*—Another way in which Government can help is to so determine its own Stores Purchase Policy as to encourage the growth of cottage industries. We understand that a Government Committee has already reported on the subject and that this Committee has definitely recommended that Government should give a price preference and a quality preference to the products of cottage industries over competing substitutes. We strongly endorse that recommendation. We are definitely of the opinion that at any rate in the realm of its own Stores Purchase Government should try to the best of its ability to purchase only the products of cottage industries even if that means that they have to pay a little higher price and have to use articles of tougher appearance. Government can also influence the Stores Purchase Policy of local authorities, educational institutions and other organised bodies in the direction of their giving a quality and a price preference to the products of cottage industries.

215. *Need for removing local taxes on cottage industries.*—It is also necessary to impress upon the local authorities the desirability of their not levying duties on the imports of raw materials used by the cottage industries located within their jurisdiction. For example, articles like cotton yarn, silk yarn, dye-stuffs, brass and copper sheets, etc., are subjected to octroi duties of a terminal kind at several places. The imposition of this duty is felt as a hardship by the artisans concerned and it would be a matter of good policy for the local bodies to remove this sense of hardship. We have also been informed that in some municipal areas duties are levied on the export of finished goods made by the cottage industries located within their jurisdiction. Such duties are harmful to the cause not only of the cottage industries, but also to the economic condition of the municipal areas concerned and they should be abolished as early as possible.

216. *Exhibitions and Museums.*—Among other measures that can be suggested for popularising the use of cottage products are exhibitions and museums. We are of the opinion that every District Industrial Association should have attached to it a small museum displaying the raw materials of the district, the finished products that can be made out of the raw materials, the industrial requirements of the district and the possible industrial substitutes for the non-district industrial goods now in use. It would also be desirable if the Association were to organise every year an industrial exhibition which would serve the purpose not only of acquainting the people of the district with the industrial achievements of the district, but would also result in concentrating a large volume of demand within a short period and thus enable the District Industrial Association to dispose of its accumulated stock.

217. *Financing the cottage worker.*—The suggestions made above particularly the formation and conducting of the District Industrial Associations, will involve considerable financial expenditure. A part of the expenditure viz., that on the establishment and other charges will be outright expenditure and will have to be met from the revenues of the State. The remaining amount required would be more in the nature of advances some of which will be for short periods as, for example, when it is a question of supplying raw materials to the artisan and buying from him the finished products which he makes out of these raw materials; sometimes the financial accommodation required might be for a longer period as in the case when new implements are introduced with the help of the finance given to the artisans. The amounts required for this purpose will have to be obtained from banks on the basis of a Government guarantee of return. It seems to us that the co-operative banking organisation is the proper body to be approached for this purpose. In case it is found difficult to obtain the necessary financial accommodation from the co-operative banking organisation, it will become necessary to set up a special organisation for the purpose of financing the requirements of the whole-time and the part-time cottage industries of the Province. Such an organisation will have to be State-sponsored and in case its funds are to be obtained from the public both

its capital and its interest will have to be guaranteed by the State. The organisation will not deal direct with the cottage workers but will only deal with the Industrial Associations. The capital of such an organisation need not in the first instance exceed Rs. 25 lakhs. It would be necessary, however, to give this organisation power to raise additional money by way of debentures, in case more funds are required. Alternatively Government may place Rs. 25 lakhs at the disposal of the cottage industries section of its Industries Department, the amount being obtained by floating a loan.

218. *Small-scale Industries.*—The small-scale industries of the Province also require help. There are, in the Province, a number of small-scale industrial establishments having a capital of one or two to thirty thousand rupees and using power. The class of persons who run these small-scale concerns constitute a different type from the cottage workers and are in fact superior to the latter in point of knowledge, equipment and finance. At the same time, there is no doubt that they too find difficulty in obtaining finance, in obtaining industrial and commercial intelligence, in obtaining reserach and technical assistance and in representing their grievances to the powers-that-be. In this connection, we found the memorandum of the Association of Small Industries (now known as "The Association of Indian Industries") and the oral evidence of their representatives of material assistance to us in understanding the difficulties of the small scale producers in the Province.

219. *Organisation of financial assistance to small-scale industries.*—The first recommendation we would like to make is in regard to the provision of financial assistance to the small scale concerns. It is well known that the Indian banking system is predominantly commercial in character and it is difficult even for the large organised industries to get financial accomodation from them. This difficulty is even greater for the small-scale concerns. Only a separate industrial bank can effectively solve their problem. But an industrial bank of the kind required for this purpose will not spontaneously come into existence and Government initiative and help is necessary for the purpose. We suggest, therefore, that the Provincial Government should help in the promotion of a Small Industries Bank. The capital of such a bank may, in the first instance, be fixed at Rs. 25 lakhs. A minimum rate of dividend on this capital will have to be guaranteed by Government and provision should also be made for division between the Government and the shareholders of any profit that may be realised over and above this minimum. This minimum may be prescribed at 4 per cent. Government should be represented on the directorate of the Bank and the services of Government technical experts should be made available to it for considering any scheme that may be put up before it by the small industrialists. The Bank should ordinarily confine itself to making advances to existing concerns either for purposes of working capital or for purposes of extension and improvement of their capital equipment. In order that the activities of the Bank may be confined

to small scale industrial units, it would be necessary to prescribe the maximum limits of the capital of the concerns which shall be eligible for assistance; as already suggested above, this limit should be placed at Rs. 30,000. It may also be necessary to limit the size of the industrial loans granted by the Bank. Where the amount of loan required by the small industries concerned exceeds the limit for individual loans laid down by the Bank, the Bank may use its good offices with other banks in the Province for securing the concerns the necessary financial assistance. If some such organisation is set up, it will obviate the need for the direct grant of loans by the State. It is true that the rules recently framed by the Government of Bombay do contemplate the grant of loans to industrial concerns. But we believe in principle that if loans are to be made to industrial units through other than ordinary commercial channels, they should be made through the agency of a non-official or semi-official organisation rather than directly by Government. Pending the creation of the industrial Bank, however, loans should be granted by the Provincial Government to deserving small scale industries. As Government have recently announced their readiness to subscribe, if necessary, to a part of the share capital of new industrial concerns established in the Province, we recommend that action of this kind should not be taken before taking the advice of the Board of the Small Industries Bank if and when it comes into existence. The Director of Industries should be an ex-officio member of this Board.

220. *Commercial and Industrial intelligence.*—Another great need of the small-scale concerns is for industrial and commercial intelligence. The Committee of the Association of the Indian Industries expressed the opinion, “that there should be a clearly defined channel from which information on commercial matters in the possession of the Government pertaining to our minor industries can be communicated publicly or to individual applicants.” The Association recognises, of course, that the collection of information of commercial and industrial intelligence by Government depended largely on the co-operation Government receive from industrialists in regard to supply of information and they agree “that it is advisable to have a machinery by which the supply of certain statistical information must be made compulsory for all traders, industrialists and employers of labour.” It is true that even at present the Director of Industries is expected to supply whatever industrial information he has to inquirers, but the information that he has is recognised as being inadequate in the absence of an adequate organisation for the collection of data. We have already pointed out in this connection that the District Industrial Officers will be the channels in their respective districts for the collection of data in regard to whole-time cottage and part-time cottage industries. For the small scale industries, information will have to be collected direct from the owners of the factories concerned. The collection and compilation of this information should be the special work of an officer who should be attached to the Department of Industries. It should also be his function to receive Trade and Industrial Journals from

various parts of the world and not only make them available in the Department's library but also publish a monthly bulletin where an abstract should be given of the important articles which can be referred to for more detailed industrial information. This bulletin should also contain items of research interest that have been worked upon in the Government's industrial research laboratories. We would also suggest that this officer should be in touch with the Trade Commissioners of the Government of India in different parts of the world and should get from them information "of a kind that will be useful to the industrialists of the Province." We understand that the position at present is that the Provincial Directors of Industries can write to these Trade Commissioners and ask them for information of a general character. If, however, the Trade Commissioner has to make any inquiry in regard to small scale and cottage industries, the Provincial Governments have to pay them specifically for it. We also understand that at the last Industries Conference the Government of India have stated that they are not prepared to meet such expenditure. We are not satisfied with this position. After all, the Government of India is not completely uninterested in the welfare of the country's small scale and cottage industries. We would urge, therefore, that the question should be reconsidered and that the Central Government should be urged to meet the entire expense of maintaining Trade Commissioners abroad even though the latter may have to answer a number of enquiries from the Provincial Governments.

221. *Research and Technical Assistance.*—Yet another need of the small scale industries of the Province is for research and technical assistance. In almost every European country, America and in Japan, the State has recognised the importance of industrial research and has created several organisations to promote industrial research. In England, for instance, the British Government has a special Department of Scientific and Industrial Research. Large sums of money are allocated in the various countries by the Government concerned for industrial research. If this is considered necessary in industrially advanced countries where industries are so developed that the industrialists themselves can afford and do have their own industrial research establishments partly financed by themselves and partly subsidised by the State, it is even more important for this country in its existing stage of economic and industrial development. In England Government maintains a number of industrial research laboratories directly financed and controlled by the State. The Government also gives on 50—50 basis grants to research laboratories set up on co-operative basis by the various industries, such as, electrical industry, etc. The State also gives grants to Universities and colleges for industrial research. It also gives stipends and scholarships to individual research workers for various research problems. It is obvious that no single research institution can carry out problems of research of a varied character. Different problems require different training of personnel, different environments and facilities, etc. It is, therefore, that research in no country is confined to only one or two institutions, but is

spread out to cover a larger number of institutions. The Government of Bombay, we feel, should have some industrial research laboratories of its own. It should also be prepared to make grants to laboratories which may be established by various industries. It should also be prepared to make grants to the Bombay University's Department of Chemical Technology and also to its affiliated colleges for industrial research as well as to individual research workers. As regards Government laboratories we have in previous paragraphs recommended the establishment of one for village industries. We also recommend that a first class industrial research laboratory be set up in Bombay specially for the benefit of small scale industries. This laboratory should have adequate equipment, personnel and resources. In this laboratory not only should research be undertaken on the actual problems submitted by the small industrialists of the Province, but independent research on the Department's own initiative should also be undertaken for exploring the possibilities of—

- (a) manufacturing within the Province of articles imported from outside,
- (b) making different kinds of finished products out of the raw materials available in the Province, and
- (c) improving the methods of manufacture now followed by the industries of the Province.

Without the setting up of such a laboratory, it will not be possible to realise the industrial possibilities mentioned in Chapter VIII. The laboratory should be in charge of a technical expert who should also have a certain acquaintance with the industries of the Province. He should be attached to the Department of Industries and should be assisted by an advisory committee of which the Director of Industries will be the Chairman and the members will be chemical, engineering and other technical experts. The size of the committee should not be unwieldy. Provision should also be made for exchange of information between this laboratory and other similar laboratories that may be set up in other parts of the country in order to avoid duplication of work.

222. *Stores Purchase Policy.*—An even more direct way in which Government can help the small scale industries of the Province is by extending them State patronage and also inducing municipalities and other local bodies to do so. We have already pointed out that we heartily approve of the recommendation that there should be a quality and price preference in Government's Stores Purchase Policy to the products of whole-time cottage and part-time cottage industries of the Province. Where the cottage industries or the part-time cottage industries of the Province are not in a position to provide articles that are required by Government, we suggest that a similar quality and price preference should be given to the products of small scale industries over the products of the large scale industries. In this connection the issue of a regular directory of small scale producers would be not only a desirable but also a necessary step; and Government should give all

possible help for this purpose to any organised body of small scale producers who are prepared to undertake the work.

223. *Certificates of quality for the products of small scale industries.*—Another direction in which assistance can and should be rendered to the industries of the Province is that Government should make provision for testing products of local industries for quality and issue certificates if the products comply with the specifications laid down. This function may be performed by a branch of the industrial research laboratory recommended in the previous paragraph. The staff should also prepare from time to time standard specifications for commodities manufactured or to be manufactured in the Province. This will enable cheapening of products and will also enable the manufacturers to know the standard or quality which they must reach if they desire to receive a quality certificate from the Government laboratory. It is understood that the Indian Stores Department of the Government of India has already prepared specifications of certain commodities and the Department of Industries obtains these specifications periodically from the Indian Stores Department and utilises them for the benefit of local industries. When the Department establishes the laboratory recommended above, the test work and the preparation of specification work should be undertaken by it on a considerably extended scale.

224. *Competition of foreign companies established in India or the India Limiteds.*—A very serious complaint made by a number of small scale industrial concerns is about the competition of foreign concerns establishing themselves on Indian soil. The memorandum submitted by the Association of Indian Industries states in this connection that, “The inroad of foreign capital with foreign management into the Indian industrial field is proving a menace to the progress of our industries. Taking full advantage of large financial backing, technical knowledge and other resources which they can command, the foreign manufacturers are pouring into India and competing with the Indian manufacturers, so to say, at their very doors.....The Committee of my Association, therefore, strongly urge that your Committee would recommend to the Government of Bombay to take immediate steps to stop such establishments from working in the Presidency by refusing to grant them licenses, unless they are made to sign some conventions, whereby they will have a majority of shareholders and directors who are Indians as well as a 90 per cent. Indian superior staff.” There is no doubt that the problem of this competition is a very real one and the latest sufferer from this kind of competition is the local cigarette making industry which has made strong representations to us on this subject. We do not desire to make any recommendations that will involve discriminatory treatment, as that would be *ultra vires* of the Government of India Act of 1935. But we desire to draw the forceful attention of the Local Government to the difficulties which small Indian concerns are bound to and indeed do feel in the face of the competition of such concerns of a much larger size. If it is the objective of our industrial policy to encourage the establishment of small concerns, then that objective is defeated if these large foreign concerns are permitted

to establish themselves without reasonable and effective limitation. The whole subject, however, is one which bristles with constitutional and political difficulties and involves considerations of an extra-Provincial kind. All that we would like to recommend, therefore, is that the Provincial Government should immediately get into touch with the Government of India and the Governments of other Provinces and States for the consideration of this problem of how to regulate the competition of large-scale foreign concerns establishing themselves behind the tariff walls in India with the activity of small scale indigenous concerns. In the meanwhile whatever positive aid the Provincial Government are able to give by way of technical and other assistance to the small scale concerns suffering from the competition of the large-scale foreign concerns should be given with as little delay as possible.

225. *The burden of railway rates and import duties.*—We have also received a number of complaints from the small-scale concerns about the heavy incidence of railway freight charges and the uneconomic incidence of the present Customs tariff by which certain raw materials and semi-finished goods of industrial use are subjected to heavy duties. We have referred at length to this problem in Chapter VI, but we are not able to make any specific recommendations for the subjects involved pertain to the sphere of action of the Government of India. However, we would like to suggest that these questions should be examined by the Provincial Government who should make representations to the Government of India for the remedying of these grievances. In fact, we are of opinion that it is the business of the Provincial Government wherever they are not in a position to render direct assistance to the industries of the Province to sponsor the cause of these industries and make representations on their behalf to the Central Government or the Government of other Provinces, as the case may be. At present it is the Chambers of Commerce and Associations of Industries of the Province that undertake this work. But their work must be supplemented by the Provincial Government, for after all it is in the interest of the Provincial Government that the industries of the Province should be in a flourishing condition. For the consideration of such matters, the Provincial Government should seek the advice and assistance of leading representatives of the organised industries of the Province in addition, of course, to considering the representations that may be made on the subject by the Director of Industries.

226. *Tendency for over-production resulting from unregulated competition.*—Another problem affecting the small-scale industries is that of unregulated and unrestricted competition amongst themselves. We are informed that in a number of industries there is a great tendency for a large number of small-scale concerns to spring up in the same field thereby resulting in over-production and cut-throat competition. An illustration would be the growth of artificial silk factories in the Bombay City. It has been suggested that legislation should be enacted by which if a certain given percentage of producers agree either on limitation

of production or fixation of price, the same would become compulsory for the remaining producers as well. We have carefully considered this suggestion and have come to the conclusion that it is not advisable for the Provincial Government to undertake such legislation, particularly when the products of the industries involved have extra-Provincial markets. We would suggest, however, that the Director of Industries in the case of the Bombay City and the District Industrial Officers, in the case of the different districts should try and use their good offices to bring about a voluntary agreement. But beyond this we do not see our way at present to make any recommendations.

227. *Extension of the Factories Act.*—Finally we have received complaints about the extension of the Factories Act to small factories. We are afraid that though some of these difficulties are real, we cannot recommend any alteration in the Government's labour policy. In fact, we are of the opinion that every extension of factory employment in the country must be accompanied by proper regulation of the conditions of work and the application of the Factories Act is but a necessary condition accompanying the opportunity to offer factory employment. It is said that many complaints have been made by Factory Inspectors on what are said to be trivial and unreasonable grounds. If this is so, the proper course is to refer these difficulties to the Chief Inspector of Factories and we are sure that the reasonable grievances of the small industrialists in regard to the application of the Factories Act will receive due consideration provided, of course, that nothing is done to defeat the very purpose underlying the extension of the Factories Act.

228. *Provincial action regarding large-scale industries.*—We have not, as observed before, examined the problems of the large-scale industries of the Province in any detail. There is no doubt that their requirements are many and that they also are not having an easy time of it. Most of their difficulties, however, can be solved only by the action of the Central Government in the realm of fiscal policy, transport policy and currency policy. For all these reasons, we have refrained from making any special recommendations regarding the large-scale industries of the Province.

The question, however, may be raised as to whether any limits should be laid down as to the sphere of Provincial action in regard to large-scale industries. We have already stated that the main question, namely, of the regulation of the relation between the large-scale, small scale and cottage industries of the Province involves extra-Provincial implications and can be considered appropriately only by an authority that has jurisdiction over the entire country. In fact, we are of the opinion that something definite should be done to protect the interests of the cottage industries either by way of a division of the market or by way of subsidies that could be financed out of taxes on the products of machine-made goods. But we are convinced that neither of these measures can be effectively put into practice by any one of the Provincial Governments singly. In fact, we do not think it desirable either

that a Provincial Government should attempt to do so. Our recommendation on the subject is that the Provincial Government should immediately get into touch with the Governments of other Provinces and States regarding the measures that should be taken for securing cottage industries their proper place in the national economy. But we would like to record our view that large-scale industries by the very nature of their markets, organisation and the interests involved are more the concern of the Central Government and that the attention of the Provincial Government should primarily be directed to safeguarding the interests of the cottage and small-scale industries of the Province. At the same time the large-scale industries that are located within the Provincial area have a definite claim on the Provincial Government that they should sponsor the cause of the large-scale industries in all negotiations with the Central Government. We would also like to suggest that the Provincial Government should establish a system of requiring licenses for the erection of new factories or for the extension of old factories and this power should be used to secure proper regional distribution of industries in the Province. They can also help the cause of large-scale industries by providing for technical schools and distributing these technical schools adequately in the different regions of the Province. The Provincial Government should also particularly explore the possibilities of setting up industries that would supply the requirements by way of tools and implements etc., of the large-scale industries that are already located within the Province. Beyond these measures the Provincial Government do not appear to us to have either the power or resources to take upon themselves the task of improving the conditions of the large-scale industries of the Province.

229. *Work done by the Provincial Government.*—We have already stated that Government have not followed hitherto any well thought-out or concrete programme of industrial development in the Province. They have not taken any interest in the promotion of part-time industries. As regards the small-scale industries again their assistance has been very inconsiderable and though rules exist for the grant of industrial loans by the Provincial Government, very little has been done to give effect to the same. In fact, the total amount of loans granted by the Provincial Government to industrial concerns since the inception of the Reforms (i.e. 1921) has been no more than Rs. 6½ lakhs out of which Rs. 6 lakhs was given to only one concern. As regards the whole-time cottage industries the Provincial Government have been doing some work for popularising the use of improved appliances in the handloom weaving industry by the organisation of peripatetic weaving demonstration parties and by running the Central Handweaving Institute in Poona. They have also attempted to tackle the marketing problems of the handloom weaver by the formation of District Industrial Associations reference to the activities of which has already been made. The expenditure of these Industrial Associations, however, has been met from the grant made by the Government of India and the credit for even this little work which has been done cannot be

legitimately ascribed to the Provincial Government. Among the other activities of the Industries Department may be mentioned the research activities of the Fibre Expert, the Industrial Chemist and the Industrial Engineer. The Department is also in charge of technical education in the Province and the scheme of getting apprentices employed in industrial concerns has been successfully in operation for some time. On the whole, however, it will be true to say that the activities of the Industries Department have not touched more than a fringe of the problems of the part-time cottage industries, whole-time cottage industries and the small-scale industries of the Province. It is but fair to add that the restricted scope of the activities of the Department of Industries has been very largely due to the very meagre resources that have been placed at its disposal by the Provincial Government. We are glad to note that since the advent of Provincial Autonomy and the Congress Ministry, the Provincial Government has shown a quickened interest in industrial affairs. We are of the opinion that the time has now come when the Provincial Government must clearly recognise that it is also a part of its function to bring about industrial development of the country. There are, no doubt, serious limitations on the scope of Provincial activity in this regard, but there is no reason why the Provincial Government should not take whatever steps they can within their limited sphere for the promotion of this object. We recommend, therefore, that a positive industrial policy should be formulated by the Provincial Government and steps taken to make the same effective.

230. In striking contrast to the above picture of the work done by the Provincial Government in encouraging cottage and small scale industries in its territory is the work done by the Mysore Government. Within a short period that Government has achieved an all round progress in the industrial field, not only by promoting a number of large scale industrial units but also by reviving and developing cottage and small-scale industries within its territories. Among the important village industries that have been thus developed are hand spinning and weaving, lacquer ware, paper and glue making, coir and rope making, sericulture, etc. The industrial policy is also so outlined as to provide spare time occupations to the agriculturist. Thus hand spinning as a subsidiary industry to agriculture has made rapid progress in the state and at the chief centre of this activity, Badanval, there were more than 5,000 spinners engaged in this spare-time occupation. The Mysore Government has recently sanctioned a scheme under which about 1,000 *charkhas*, 1,000 carding bows and 1,700 speed pulleys are to be supplied at half the cost to agriculturists who are prepared to take up spinning as a subsidiary occupation. Moreover, there are 11 industrial institutions maintained by the state where different kinds of industrial education is imparted. Home industries classes for ladies are encouraged by grants and ladies are given useful instruction in subjects like weaving, knitting, cloth printing, ratten making, cardboard box making, gold lace work, fret work, etc. The rapid development of all kinds of industries in the Mysore State is an evidence of what a State or Provincial

Government can do even under the handicaps inherent in the Constitution, if it sets about the task with a will and an eagerness to achieve the object of industrialisation. The example of Mysore may well furnish a model to the Provincial Government in the formulation and execution of a positive industrial policy.

231. *Need for industrial planning—(i) Board of Economic development.*—For the formulation of such a positive policy of industrial development we have already recommended in paragraph 7 the creation of an Economic Development Department. This Department should be under the general supervision of a Board to be called the Board of Economic Development of which the Director of Industries will be the Secretary and the Minister in charge will be the Chairman. The members of the Board should consist of the chief officials representing the economic interests of the Province such as the Director of Agriculture, Director of Rural Development and Co-operation, Chief Conservator of Forests, Chief Engineer to Government, etc., and a few non-officials possessing expert knowledge of commerce, industry and generally of economic conditions of the Province. The Director of Industries should be relieved of his routine duties and he should concentrate on planning the work of his Department and keeping Government informed of the progress of industrial development of the Province.

232. *(ii) Industrial planning.*—It is also necessary that a time-table of the industrial development should be drawn up. This time-table, however, cannot be drawn up in the absence of adequate data. For the collection of adequate data, we suggest that an industrial census of the whole Province should be undertaken as early as possible. In fact, the most convenient thing to do is to undertake the census alongside the decennial census. Once the census has been completed the data collected should be kept up-to-date from periodical returns received from the different districts regarding the different industries. The District Industrial Officers whose creation we have suggested will be of material assistance and if a Statistics Act were to be passed as we have suggested earlier, the data regarding the activities of small scale industries will also become easily available. For the efficient execution of this work, it is necessary that one officer of the Industries Department should be entrusted with the responsibility of maintaining up-to-date the industrial statistics of the Province. It is also necessary that a thorough survey should be made of the raw material resources of the Province, particularly in the realm of forest products.

233. *(iii) Industrial Policy.*—In drawing up the time-table of industrial development, the objective of the Provincial Government should be not merely to bring about the maximum economic utilisation of the resources of the Province, but also to see that it does not result in unemployment or in the lowering of the income levels of any class of workers in the Province. We regard the maintenance of this objective as an essential condition for the Provincial Government's undertaking positive steps towards industrialisation. By way of illustration we may point out that the fisheries resources of the Province are not fully

exploited today due to the absence of power-driven fishing boats and there is no doubt that the introduction of power-driven fishing boats and launches would increase the annual fishing catch of the Province. But the introduction of these more up-to-date methods of fishing should be from the very beginning so devised and controlled as not to result in unemployment or lowering of the standard of life of the fishermen who are at present using sailing boats. What concrete measures should be taken for the purpose is a matter of detail that can be settled by Government from time to time with the help of the relevant Advisory Committee. But the general principle should be that it is not the consumers alone whose interests should be safeguarded, but the producer whose livelihood is threatened by the introduction of more up-to-date methods of manufacture also requires looking after.

234. *Basic education and cottage industries.*—If the Provincial Government accept our view that cottage industries and small scale industries have a very important place in the economic structure of the Province they should not only undertake direct measures of assistance such as have been suggested above like the setting up of the Provincial Cottage Industries Research Institute, formation of a separate cadre of District Industrial Officers, financing of marketing organisations for the benefit of cottage workers and so on, but they should also introduce measures for improving the general technical knowledge of the populace and increasing the supply of skilled workers. From this point of view we heartily commend the scheme of basic education which has the use of crafts as media and particularly its application to rural areas. We are confident that in course of time it will play a very important part not only in improving the efficiency of the whole-time cottage workers of the Province, but also in making it easier and profitable for the agricultural classes to take to part-time cottage industries. It would also be necessary that the kind of research which is undertaken in the Government laboratories for the commercial utilisation of the raw material resources of the Province should have a large bias in favour of cottage methods of manufacture that could be taken up as subsidiary occupations by the agricultural classes.

235. *Technical education.*—In addition to promoting the scheme of basic education which will mainly be of assistance to the cottage industries, the Provincial Government should also try to increase the facilities for technical education available in the Province. The facilities available at present are summarised in the following statement :—

	Bombay City.	Northern Division.	Central Division.	Southern Division.
Engineering Schools .. ..	..	..	1	..
Technical and Industrial Schools ..	22	17	22	2
Total ..	22	17	23	2

The number of pupils who received education in these institutions in the year 1937-38 was 4,443. It will be seen that facilities for technical education in the Province are not only inadequate, but are also not equitably distributed among the different regions of the Province. We suggest, therefore, that the facilities in question should be increased and in particular, more facilities should be made available in the Southern Division. We are also of the view that it would be advisable to open at least in one centre in each Division, poly-technics where techniques of a comprehensive type will be made available to the students. We also commend the scheme for the training of industrial apprentices at present worked by the Department of Industries and we suggest that it should be linked up with these technical schools. The present practice of having a Deputy Director of Industries in special charge of industrial and technical education in the Province should, in our opinion, be continued. This officer should not merely be concerned in supervising the running of industrial and technical schools, but his services should also be made available to the Educational authorities in planning the choice of craft media in the basic schools to be opened in the rural parts of the Province.

236. *Representations to the Central Government.*—As regards large-scale industries, the Provincial Governments cannot do very much, but they can constantly urge upon the Central Government the need for a policy of unqualified protection without which industries will not rapidly spring into existence. They should also emphasise that railway rates are not merely a method of obtaining revenues, but should really be looked upon as an instrument for achieving industrial development. Further they should exercise a vigilant watch over the currency policy of the Central Government with a view to influencing the same in the direction of promoting industrialisation. The whole idea is that though the Provincial Government has not and cannot by the very nature of things have power in the matter of transport, currency, etc., they have nevertheless a distinct service to perform in these fields by way of representing the point of view of the Province—of both consumers and producers—in regard to problems affecting large-scale industries.

237. *Organisation of the Industries Department.*—The various recommendations made above involve a large increase in the personnel of the Industries Department. A detailed description of the functions of the additional appointments we are recommending will be found in the preceding pages, but it will not be out of place here to give a picture of the Industries Department as a whole if it were to be reorganised as per our recommendations. At present the Industries Department excluding the Weights and Measures Section attached to it consists of the following Officers and their staff :—

Director of Industries,
Deputy Director of Industries,
Industrial Engineer,

Industrial Chemist,
 Personal Assistant to the Director,
 Fisheries Officer,
 Tanning Expert,
 Marketing Officer for Handloom products,
 Textile Designer,
 Wool Expert,
 Fibre Expert.

The Deputy Director of Industries is in charge of technical education including the apprentice scheme. The Industrial Engineer is in charge of the workshop and also supervises the propaganda work for popularising improved appliances and equipment in cottage and small scale industries. The Industrial Chemist carries on research work into the possibilities of introducing small scale chemical industries. The Personal Assistant to the Director is in charge of office and disposes of the routine work of the Department. The duties of other officers are shown by the designation of the posts held by them. Of these latter, the Marketing Officer, Textile Designer and the Wool Expert owe their posts to the Government of India schemes for encouragement of handloom and cottage woollen products, under which District Industrial Associations have been started. Obviously the present staff is inadequate for carrying out the comprehensive development of existing industries and revival of part-time and starting of new industries that we have suggested. It is, therefore, essential that the Industries Department of the Province should be strengthened as per our detailed recommendations made above. If this were done, the Industries Department will be reconstituted on the following basis :—

The Director of Industries (Planning and Co-ordinating Authority).

Part-time Cottage Industries Section.

Deputy Director of Industries and his staff.

Whole-time Cottage Industries Section.

Deputy Director of Industries.

Assistant Director of Industries for each Division.

District Industrial Officers for each district.

Technical officers for the Provincial Cottage Industries Research Institute.

Commercial and Industrial intelligence.

An Officer in charge of the Section.

Industrial Research Laboratory.

Technical Expert with his assistants.

Technical Education.

Deputy Director of Industries in charge of technical and Industrial education and the apprenticeship scheme.

Office.

Personal Assistant in charge of office and routine matters.

These officers will naturally require more staff and assistants than are at present allotted to the Industries Department. In addition, the present officers like the Fisheries Officer, Tanning Expert, Fibre Expert, etc., will continue and the number of such technical experts will increase in the kind of Industries Department envisaged by us. The expenditure incurred by the Department of Industries in 1938-39 was Rs. 8·4 lakhs exclusive of the Government of India grants but including Rs. 1·6 lakhs for the Weights and Measures Section, the expenditure on Industries Department proper (including expenditure on technical and industrial education) being thus about Rs. 6·8 lakhs. Our proposals will involve the expansion of the Department nearly to four times its present strength and the expenditure on the reorganised Department may very well come to Rs. 25 lakhs. This, however, is only a very rough estimate. In any case Rs. 25 lakhs is not a large amount for the Government of Bombay to spend on the industrial development of the Province.

238. *Urgent need for Government action.*—In conclusion, we would like to stress the urgency of the problem of cottage and small scale industries. The economic condition of the cottage workers as also that of the majority of the rural population has become very desperate and it is daily getting worse. Unless steps of the kind suggested by us are taken immediately, their condition is bound to deteriorate further and if this process continues, no amount of money will stop the economic ruin of the rural population. Today they are still carrying on their industries though at extremely low yields and maintaining themselves by cutting their expenses to the bone. If things continue in this fashion, they cannot hold out much longer. It is, therefore, that we recommend that urgent attention should be paid by Government to our proposals for the amelioration of the economic condition of the rural population, both agricultural and industrial. The money to be spent now to help these people, though it may seem large in comparison to the expenditure incurred in the past by the Bombay Government will be insignificant to what it will be forced to spend later on if the rural population is allowed to drift on to economic ruin. We conclude, therefore, with the hope that effective steps will soon be taken by Government for the betterment of whole-time and part-time cottage industries as also of small scale industries of the Province and that the small industrial worker and the partly unemployed cultivator of the Bombay Province will see better days ahead of him than he has had the good fortune to experience so far.

CHAPTER X.

SUMMARY OF RECOMMENDATIONS.

1. The Committee is impressed by the enormous scope for useful work that an Economic Development Department located at the Head Quarters of Government can do and recommend the creation of such a Department. (Paragraph 7.)

2. The Committee recommends that a comprehensive geological survey of all parts of the Province from an industrial point of view should be undertaken by the Provincial Government. (Paragraph 26.)

3. The Committee recommends that the experimental work, now carried on for the industrial utilisation of forest products such as for bobbins, shuttles, etc., should be proceeded with vigorously. (Paragraph 182.)

4. Research work on the industrial utilisation of waste products like rice husk, groundnut shells, banana stems, linseed stalks, etc., should be begun and proceeded with vigorously. (Paragraph 185.)

5. A survey of the medicinal herbs of the Province should be undertaken early. (Paragraph 186.)

6. Active State help is necessary for the establishment of a machinery industry in the Province. (Paragraph 187.)

7. Experiments should be carried on for converting our tanning materials into tanning extracts and for the commercial utilisation of vast supplies of vegetable dyes in our forests. (Paragraph 188.)

8. Scientific research is a necessary preliminary to the successful establishment of the fruit canning industry in the Province and this should be undertaken by Government. (Paragraph 189.)

9. A good deal of experimentation is necessary before our fibre resources can be exploited commercially to their fullest extent. (Paragraph 191.)

10. The possibilities of deep sea fishing must be explored but care must be taken to see that the development of this branch of the fishing industry does not lead either to unemployment or diminished earnings for the existing fishing population. (Paragraph 194.)

11. As a part of a policy for the economic betterment of the Province the Provincial Government should undertake a programme of rapid road construction. (Paragraph 197.)

12. There should be a definite time-table for the liquidation of adult illiteracy in the Province especially of that of the cottage workers and the Provincial Government should set up an authority that will carry out this programme in a vigorous manner. (Paragraph 198.)

13. The magnitude of the inadequacy of medical facilities in the Province is such that it requires to be tackled urgently and this can be

done not only by official action but non-official help is also required. (Paragraph 199.)

14. (To relieve part-time unemployment among agricultural classes and for increasing the cultivator's incomes, Government should promote part-time occupations suitable for cultivators and agricultural labourers.) In this connection, the Committee wants to emphasise that hand-spinning is the ideal part-time cottage industry for the cultivator, as it involves very little capital, is not difficult to learn, can be taken on and left off at the cultivator's convenience and fits in with the century old traditions of the countryside. There are also other part-time cottage industries like mat-making, rope-making, dairying, sericulture, apiculture, etc. A special section should, therefore, be created in the Industries Department for the purpose of promoting part-time or subsidiary industries and inspectors appointed for each district. This section should be in charge of a Deputy Director of Industries who should be guided by a Provincial Board for the Promotion of Part-time Industries, the Board to consist of not less than twelve members including the Director of Industries, the Director of Agriculture, the Chief Conservator of Forests, the Registrar of Co-operative Societies, the Chief Engineer to Government, two representatives of the Provincial Legislature, one representative each of the All India Spinners' Association and the All India Village Industries Association and some other non-official experts in rural economic development. (Paragraphs 203-205.)

15. A Conference of representatives of different Governments of the Provinces and States and of the Government of India should be convened for purposes of discussing the place of subsidiary industries in Indian economy and the ways and means to achieve the same. It is felt that only after such a Conference has been held and agreed protective measures taken on an All-India scale, will it be possible for the proposed part-time Cottage Industries Section of the Industries Department to function effectively. (Paragraph 205.)

16. As regards the question of the relation of large-scale and cottage industries, the Committee feels that there is a large non-competing field between the two as also scope for co-operation. But there is no doubt that competition also exists, particularly in the textile industry. The Committee, however, feels that regulation of the relation of these two types of industry cannot be undertaken by the unilateral action of a single Provincial Government. The Committee, therefore, suggests that the whole question, particularly that of regulating the relations between the large-scale and cottage sections of the textile industry should be discussed at a special Conference of the representatives of the Provinces and the Government of India. The Committee is of the opinion however that, subject to the control of imports and agreement from the other Provincial and State Governments and the Government of India, some regulation of the textile industry like division of the market accompanied, if necessary, by a duty offers a possible solution. (Paragraph 206.)

17. As regards the relation between small scale and cottage industries, the Committee is of the opinion that no regulation is necessary except in the case of the textile industry where the growth of small power-loom factories needs to be restrained. Even here, no action should be taken without obtaining the approval of the other Governments in India. (Paragraph 207.)

18. The difficulties of the cottage industrial workers are primarily in the field of marketing. To meet this difficulty the Committee recommend that each district should have an Industrial Association in charge of a District Industrial Officer assisted by a local Advisory Committee. (Paragraphs 208-209.)

19. The District Industrial Association should supply raw materials to artisans and sell their products, give them improved tools on the hire purchase system and organise demonstrations, etc. Membership of the Association should be open to all whole-time cottage workers resident in the district, subject to their observance of the rules and regulations of the Association. (Paragraphs 210-211.)

20. The District Industrial Associations could be co-ordinated by a Divisional Association under an Assistant Director of Industries in each Division of the Province. These Assistant Directors should be assisted by advisory Committees and over them there should be a Deputy Director of Industries in charge of cottage industries. This Deputy Director will issue an annual report on the state of cottage industries in the Province. He will also be in charge of the Provincial Cottage Industries Research Institute and, in general, he will act as the spokesman of cottage industrial interests. The Deputy Director may also be assisted by an Advisory Board. (Paragraph 212.)

21. There should be established a well equipped and properly staffed research institute called the Provincial Cottage Industries Research Institute under the Deputy Director for cottage industries, for working on problems of interest to cottage industries. The Institute will not only attempt to improve the tools and existing methods of manufacture followed by cottage industries but will also explore the possibilities of starting new cottage industries. (Paragraph 213.)

22. Government themselves should purchase products of cottage industries, even though their quality may be inferior and their price higher. They should also induce local authorities and other organised institutions to give a similar price and quality preference to cottage products. (Paragraph 214.)

23. The duties and taxes levied by local authorities on raw materials required for cottage industries and on finished cottage products should be removed. (Paragraph 215.)

24. Every District Industrial Association should have attached to it a small museum displaying the raw materials of the district, the finished products that can be made from these raw materials, the

industrial requirements of the district and the possible industrial substitutes for the non-district industrial goods now in use. The Association should also organise district industrial exhibitions every year. (Paragraph 216.)

25. For financing the cottage worker, a special organisation should be set up which should not deal direct with the cottage workers but only with the Industrial Associations. In the alternative, Government may place Rs. 25 lakhs at the disposal of the cottage industries section of the Industries Department. (Paragraph 217.)

26. For financing small-scale industries Government should promote a Small Industries Bank with a capital of Rs. 25 lakhs. (Paragraph 219.)

27. The collection and compilation of commercial and industrial information should be made the special work of an officer attached to the Industries Department. He should also publish an industrial bulletin containing abstracts of important trade articles and items of research interest in the Government's laboratories. (Paragraph 220.)

28. Government should set up a first class industrial research laboratory in Bombay for the benefit of small-scale industries in addition to making grants for other existing industries for research purposes. (Paragraph 221.)

29. The Stores Purchase Policy of Government should be such that where cottage products are not available, a quality and price preference should be given to the products of small-scale industries. Government should also persuade local bodies and other associations to adopt a similar policy. (Paragraph 222.)

30. Government should make provision for testing the products of local industries for quality and issue certificates. This function can be performed by a branch of the Industrial Research Laboratory. (Paragraph 223.)

31. Regarding the competition of foreign companies established in India or the India Ltds., it is recommended that the Provincial Government should get into touch with the Government of other Provinces and States and the Government of India for consideration of how best to regulate such competition. (Paragraph 224.)

32. The Provincial Government should sponsor the cause of small industries and represent to the Government of India their grievances regarding the heavy incidence of railway freights, uneconomic customs tariffs, etc. (Paragraph 225.)

33. The tendency to over production through unregulated competition should be regulated by voluntary agreements and for this purpose, the good offices of the officers of the Industries Department should be made available. (Paragraph 226.)

34. Grievances regarding the application of the Factory Act should be referred to the Chief Inspector of Factories. No recommendation is made for any alteration in the Government's labour policy. (Paragraph 227.)

35. As regards large-scale industries, the Provincial Government should represent their cause to the Central Government and urge the need for a policy of unqualified protection. (Paragraph 228.)

36. The Committee is of the opinion that the record of the Provincial Government in promoting industrial development in the Province has been very unsatisfactory. The Committee feels that the time has now come when the Provincial Government must clearly recognise that it is also a part of its function to bring about the industrial development of the country. A positive industrial policy should, therefore, be pursued by the Provincial Government and steps should be taken to make the same effective. (Paragraphs 229-230.)

37. For the formulation of such a policy, a Board of Economic Development should be created, and a time-table of industrialisation based on the details collected by an industrial census should be drawn up. The plan of industrial development should be so drawn up and executed as not to result either in unemployment or lowering of income of any class of the existing cottage workers. (Paragraphs 231-233.)

38. Home industries classes for ladies should be started or subsidised by the Provincial Government and the subjects taught should include weaving, knitting, cloth printing, rattan making, cardboard-box making, gold lace making, fret work, etc., (Paragraph 230.)

39. The scheme of basic education which has the use of crafts as media is commended and particularly its application to rural areas. (Paragraph 234.)

40. Facilities for technical education should be increased and they should be equally distributed amongst different regions of the Province. (Paragraph 235.)

41. The reorganisation of the Industries Department should be carried out on the lines proposed in the report. A picture of the reorganised Industries Department is given in paragraph 237. The cost of the enlarged Department will be approximately Rs. 25 lakhs which the Provincial Government must find from its revenues. (Paragraph 237.)

42. The condition of the rural workers has become so desperate that very urgent Government action is called for. (Paragraph 238.)

PURSHOTAMDAS THAKURDAS.

P. B. ADVANI.

C. N. VAKIL.

P. U. PATIL.

MAHOMEDALI HABIB.

V. K. R. V. RAO.

(Member-Secretary)

Dated 29th November 1939.

APPENDIX A.

DETAILED HEADS OF INQUIRY UNDER WHICH INFORMATION IS BEING COLLECTED.

1. Raw materials available in the Province Minerals,
in your part of the Province
Forest Produce, Agricultural Produce, Livestock Products, places where found, quantities found, vicinity of sources of power, possibilities of the economic utilisation of these raw materials.
2. Manufactured goods generally consumed in the Province,
in your part of the Province
which are of foreign manufacture or are imported from other Provinces; how far they can be replaced by articles of local manufacture on an economic basis. Also the possibility of manufacturing finished products out of materials at present exported from the Province in raw form.
3. Rural and urban cottage industries which have ceased to exist during the last 30 or 40 years. Reasons for their decay with special reference to (and if possible a quantitative assessment of the importance of) (a) changes in taste, (b) foreign competition, (c) internal competition from machine-made substitutes, (d) internal competition from among the artisans themselves, (e) marketing difficulties, including difficulties of transport, finance, etc., (f) decline of the skill and steadiness of the workers themselves. Possibilities or otherwise of their revival.
4. Existing rural (village) cottage industries of the Province,
in your part of the Province
classification, location, numbers employed and period for which they are employed during a year. Raw materials, technique, maximum extent of competition from (a) foreign substitutes, (b) Indian machine-made substitutes. Other difficulties. Extent and nature of assistance it is possible and desirable for the State to give. Possibilities of starting new or reviving old village industries.
5. Information under the following heads should be furnished separately for:—
 - (i) existing urban cottage industries,
 - (ii) existing small-scale industries,
 - (iii) other existing industries, including those in which are engaged concerns registered under the Indian Factories Act of 1934.

Classification. Description. Location. Numbers employed and numbers dependent. Periods for which employed in a year. Estimates of the quantity and value of output. Raw materials. Technique. Markets. Marketing. Finance. Taxation. Competition from abroad. Competition from within, (a) from large industries, (b) from (i) small-scale industries, (ii) cottage industries. Analysis of the costs of production and marketing under the heads of (1) raw materials, (2) labour, (3) rent, (4) interest on the value of implements used and depreciation, (5) finance, (6) transport, (7) middlemen's commission. What is the proportion of the value of a product of small industry which goes to the artisan engaged therein? Nature of organisation. Employers and employees. Labour condition. Standard of life. Efficiency of the worker engaged in these industries. Measures, legislative, administrative and financial, proposed for helping these industries, including the possibility and the desirability of imposing restrictions on large industries. Views on the possibility and desirability of starting large-scale organisation for co-ordinating the work of these industries of the Province, supplying them with raw materials and marketing their finished products. Possibilities of starting new small-scale industrils and cottage industries, also that of reviving old cottage industries. Extent and nature of assistance it is possible and desirable for the State to give.

6. Observations on the work done by different Departments of Government in promoting the economic development of the Province
in your part of the Province
Possibilities for the future, with concrete proposals, if any.

APPENDIX B.

QUESTIONNAIRE ISSUED BY THE BOMBAY ECONOMIC AND INDUSTRIAL SURVEY
COMMITTEE.

I

1. Name ..
2. Native place ..
3. Place of Residence ..
4. Place of occupation ..
If outside the living area what are the
rent, light charges, etc. Area occu-
pied by the workshop.
5. Is your establishment licensed ? If so,
what charges have you to pay and to
whom ?
6. Industry and occupation ..
7. Whether hereditary or self-chosen ..
8. Status—
Employer.
Independent worker.
Worker on contract.
Wage earner.
9. If employer, number employed ..
Members of the family ..
Outsiders ..
Managerial staff ..
Clerical staff ..
Manual staff ..
Apprentices ..
10. If Independent worker :—
Whether any outsiders are employed, if
so, for what process and for what
period ?
How many members of the family are
employed and for what process and
for what period of time ?

11. If worker on contract—

Whether any outsiders are employed, if so, for what process and for what period ?

How many members of the family are employed and for what process and for what period of time ?

Method of securing the contract for work ; and terms on which it is secured.

12. If a Wage earner—

Whether any members of his family are employed along with him or in the same trade and if so, for what process and for what period of time ?

II

13. What are the raw materials used by you ? Please describe them and classify them by quality.

14. Quantity used per month and value ..

Quantity used per year and value ..

15. Do you concentrate your purchases in any particular month or period of the year ; if so, when ?

16. What are the quantities you purchase at a time and their value ?

17. From whom do you purchase the raw materials ? Do you buy them from a local merchant or do you import them ?

18. If you buy them from a local merchant, at what prices do you purchase them ?

19. If you import them, at what prices do you buy them ? Please state separately the price at source and the cost of transport.

20. What are your brisk seasons and what are the slack for such purchase ?

21. What are the highest and the lowest prices in the brisk season and also in the slack season ?

22. How do you pay the charges for the raw materials; by cash or by credit ?
23. If by cash, who finances you ? Yourself, *Sowcar*, Co-operative Society or any other organised body ?
24. If by credit, for what period is the credit granted by the dealer ?
25. Is there any difference between the cash price and the credit price ? If so, how much ?

After the lapse of the credit period do you pay any interest ? If so, at what rate ?

Does your raw material purchase depend upon the condition that the finished product is to be sold to (1) the dealer himself or (2) to any other particular individual ?

26. What improvements would you suggest : (1) in the quality of the raw material, (2) in the methods of purchase, (3) *re* : storage facilities, and (4) *re* : minimising the costs of securing the raw material ?

III

27. What are the processes that the raw material goes through from the beginning to the end ?

Name of the Process.	Time required.	Machines and appliances.	Nature of power used.	Labour.	
				Skilled and/or unskilled.	Male, Female, Child.

28. Is there any utilizable waste? If so, what is it and is it utilized and with what results? If not, why not?

29. Description of Machines, tools and appliances.	Approximate cost and life of each.	Yearly repairs and other charges.	Other Expenditure.

30. From whom and where do you purchase the equipment?

31. Is your capital borrowed or owned?

If borrowed, from whom: (1) *Sowcar*, (2) Bank, (3) Government, (4) Co-operative Society, (5) Relatives, (6) others?

What is the rate of interest at which the capital is borrowed and what is the method of repayment?

32. Do you purchase your equipment on the hire-purchase system?

If so, what is the instalment?

33. Is the equipment efficient? If yes, are there any further possibilities of improvement?

If no, in what directions is improvement necessary?

34. Do you meet with any difficulties in securing equipment?

If so, what are they and how can they be removed?

35. If your equipment is of the improved pattern, how long is it in use?

Who was responsible for its introduction, (1) you or (2) any Government Agency?

36. Have these improvements benefited you? If not, why not?

37. Do you think that the Government can help you in this direction in any way? If so, in what way?

Are you familiar with other methods of production in your line?

If so what are they and where are they followed?

Why do you not follow them? If there are any difficulties in your following those methods, can't they be removed?

If so, how? by (1) your action, (2) Government action, (3) the help of any other agency.

IV

38. What are the different types of products of your industry which you are producing?

Different types of products.	Time taken to produce one unit of each type.	Price obtained per unit of each type.			Volume of your production of each type in a		Value of your production of each type in a		Description of machine-made products which compete with the different types of your production.	Prices of the items which compete with the different items of your production.
		Maximum.	Minimum.	Usual.	Month.	Year.	Month.	Year.		

39. Is your industry seasonal? If so, why? Explain from the point of view of the availability of

(a) raw-material,

(b) processing,

(c) demand.

40. What are your brisk and slack seasons for production? What is their duration?

In the brisk season how do you increase your production?

41. What do you do in the slack season? Do you produce for stock? If not, why not?

- 41-a. How do you employ your equipment during the slack season?

42. Do you take to any other occupation in the slack season?

If so, what and where is this occupation? What income do you get from this subsidiary work?

43. Do you produce for order? If so, from where do you get orders—from local dealers or from outside dealers; from local consumers or from outside consumers? What is the average volume of each order?

44. If you are producing directly for a market, how do you know the variations of taste among the customers? If you do, how do you satisfy the changing taste?

45. Do you produce for a periodical market like a fair? If so, how much of your annual production is for this type of market?

46. How old or new are the patterns and types of goods that you are producing? If you are not using new patterns or producing new types why are you not doing so? Do you require any help? If so, what agency would you suggest for the purpose?

47. Are you acquainted with any other producers who have taken to new patterns and designs or new appliances?

If so, what has been their experience?

48. What is the usual market for your product? (1) local, (2) district, (3) Provincial, (4) inter-Provincial, or (5) foreign.

Do you sell direct to your customers in those markets, or do you sell to agents?

49. Are you free to sell your goods to anybody you like? If not, why not?

50. Over and above the local sales, do you personally go out and sell your goods from place to place? If so, to what extent?

51. Do you participate in fairs, exhibitions, weekly bazaars, etc.?

If so, why do you do it? Is there any special demand for any particular type of your produce?

Do you find any difference in selling prices at your production centre and the fair? Does that difference, if any, cover the cost of participation and leave something extra for you? If so, to what extent?

52. Do you export to any outside merchant directly? If so, to what extent? What is the cost? Do you get any extra income as a result of this? If so, how much is it?

53. Do you employ any agents to canvass orders, exhibit your goods, etc.

54. How and when do you realise your proceeds? Do you sell (1) on cash, (2) on credit, (3) on hypothecation?

If credit, what is the nature and duration of the credit?

What is the difference between the credit price and the cash price?

Do you charge any interest to the merchant after the lapse of the credit period?

If hypothecated, why do you do it? ..

To whom do you hypothecate your goods—(1) merchants, (2) producers' association, (3) co-operative society, (4) a Government agency, (5) a banking organization?

What are the terms on which the goods are hypothecated?

55. Are there any difficulties in marketing your products? If so, what are they and how can they be removed?

Do you want any Government assistance in this work? If so, of what kind?

56. Is there any co-operative society in your industry? If not, are you prepared to form a co-operative society to help you?
57. Do you think that District Industrial Association in your industry can be of use to you? If not, why not?

VI

58. What are your financial requirements for :—
- (a) purchase of equipment, appliances, etc.,
 - (b) purchase of raw materials,
 - (c) repairs,
 - (d) other purposes?
59. How do you obtain your finance?
- From
- (a) yourself,
 - (b) *soucar*,
 - (c) dealer,
 - (d) co-operative society,
 - (e) Government,
 - (f) bank,
 - (g) any other agency?
60. If you borrow your capital, what interest do you pay? What are the other terms of repayment?
61. What is the average rate of return which you get on the capital invested in the industry? Does it leave you enough margin to pay interest and leave something for yourself?
62. Do you find any difficulty in getting your capital? If so, describe them. How do you suggest they can be removed?
63. Do you think that a co-operative society will help you in solving your financial difficulties? If so, why don't you start one? If you already have one, how far has it succeeded in solving your problem?
64. Are you indebted? If so, what is the total amount of your debt and to whom are you indebted? Can you classify the causes of your indebtedness?

VII

65. Are you troubled by competition? If so, in what types of products? Please indicate the sources of your competition (1) local, (2) indigenous, (3) foreign.

66. Please give details as in the following table:—

1	2 Local.			3 Indigenous.			4 Foreign.			5			
Types of production in which competition is met with.	Whether machine-made or hand-made.	Price.	Durability.	Whether it works as a substitute?	Whether machine-made or hand-made.	Price.	Durability.	Whether it works as a substitute?	Whether machine-made or hand-made.	Price.	Durability.	Whether it works as a substitute?	How long has the competition been in existence?

67. Have you given up the production of any of these types of production on account of competition? If so, which types and since when?
68. Why do you persist in the production of these types in which you meet with competition? Do you believe that you have any special advantages in this industry?
69. What steps do you think would enable you to withstand this competition successfully? Indicate the kind of help which you think you should get from
- (a) the Department of Industries,
 - (b) the Co-operative Department,
 - (c) other Departments of Government.
70. Did you have any guild in your trade? If so, why has it disappeared? Are you in favour of its revival?

VIII

71. Do you employ any workmen to assist you? If so, how many? Classify them by age and sex.
72. What are their daily hours of work? ..
73. Do they get employment for the whole of the year, or only a part? If only for a part of the year, how long do they remain out of work? Do they get work in any other trade during that period?
74. What is your method of wage payment, time-wages or piece-wages? If time-wages, is it daily, weekly or by month?
75. What is the rate of wages that you pay?
76. Do you have any system of fines or return of damaged material to the workman? Please give details.
77. Have you any complaints regarding the efficiency of your workmen? If you have, how do you think they can be remedied?

IX

78. How many persons do you think are employed in your industry including wage-earners? Please classify them separately under (a) *karkhandars*, (b) independent artisans, and (c) wage-earners.
79. What is your estimate of the total output of your industry during the last year?
80. What was the value of that output? ..
81. Are there large variations in the output of your industry from year to year? Please give your estimates of output and prices for the last ten years.
82. If there are large variations in output, what do you think are the reasons? How, do you think, they can be remedied?
83. If there are large variations in price, what do you think are the reasons? How do you think they can be remedied?
84. What is your estimate of the total quantity of raw material used by your industry?
85. What do you think are the defects in the organisation of your industry? And what measures do you suggest to remove them?
86. What in your opinion are the future prospects of your industry?
87. Have you anything to say generally regarding the possibilities of promoting the expansion of your industry?

APPENDIX C.

Questionnaire.

1. Name and address :—

Established in—

Industry.

2. Manufacturers of :—

Kind of products.	Quantity produced in a year.	Value of produc- tion in a year.	Remarks.

3. Number employed :—

Manual staff	..	..
Clerical staff	..	..
Officers ..	..	..
Technical experts	..	..

4. Do you obtain any of your raw materials from abroad? If so, is it possible to replace them by Indian substitutes? If not, why not? ..
5. What is the amount of capital invested in your concern?
6. (i) Is your equipment efficient? In what directions is improvement possible in the same? Do you think the State can help you in securing such improvement? If so, by what means? ..
 - ii) Do you meet with any difficulties in securing equipment? If so, what are they? How, do you think, they can be removed?
 - (iii) Do you use power? If so is it steam, gas, or electricity? What is your annual expenditure on power?
7. How far, in your opinion, do your products compete with the products of Indian cottage industries or of small-scale factories?
8. Is your industry seasonal? If so, why?
9. What is the usual market for your product? Local, district, Provincial, inter-Provincial, or foreign? ..
10. Have you any difficulties in marketing your products? How can they be removed? Do you want any Government assistance in this matter? If so, of what kind?
11. Do you deal only with wholesalers or do you also organize retail sales? ..
12. Do you find any difficulties in obtaining capital? If so, describe them. How, do you suggest, they can be removed?
13. In what types of your production do you meet with competition? Please indicate the sources of competition, whether from Bombay Province or the rest of India or from abroad ..
14. What steps do you think can enable you to withstand the competition successfully? Indicate the kind of help which you think you should get from
 - (a) the Department of Industries,
 - (b) the Co-operative Department,
 - (c) other Departments of Government?

15. What is your total annual wage bill? ..

Please give separately your wage-total for :—

(a) manual workers

(b) clerical staff

(c) officers

(d) technical experts

16. Have you any complaint regarding the efficiency of your workmen? If you have, can you suggest any remedies? ..

17. What, do you think, are the difficulties in the organization of your industry, and what measures do you suggest to remove them?

18. What, in your opinion, are the future prospects of your industry? ..

Have you anything to say about the possibility of promoting the expansion of your industry?

19. Can you suggest the establishment of any ancillary or subsidiary industry, arising from your industry? ..

If there are possibilities of doing so, why have they not been established? ..

20. What in your opinion, are the steps that the Government should take to facilitate such establishment? ..

21. Has the Government of Bombay taken any action during the last 17 years which has resulted in encouraging or promoting the development of your industry?

If so, please describe the steps taken by them in this connexion

22. Can you suggest any specific ways in which Government can assist in the development of your industry? or of subsidiary or ancillary industries? ..

APPENDIX D.

List of officials, chambers, firms, non-officials, etc., from whom memoranda were received by the Committee.

(a) OFFICIAL.

- Secretary, Government of Bombay, Home Department (Jails).
 Officers of the Forest Department of the Government of Bombay.
 Officers of the Public Works Department of the Government of Bombay.
 Officers of the Agricultural Department of the Government of Bombay.
 Officers of the Co-operative Department of the Government of Bombay.
 Senior Inspector, Factory Department of the Government of Bombay.
 Officers of the Industries Department of the Government of Bombay.
 Commissioner of Labour of the Government of Bombay.
Mamlatdars, Deputy Collectors and Collectors in the Province.
 Secretary to the Government of Bihar.
 Secretary to the Government of the North-West Frontier Province.
 Secretary to the Government of Assam.
 Secretary to the Government of the Central Provinces and Berar.
 Secretary to the Government of the United Provinces.
 Secretary to the Government of Orissa.
 Chief Secretary to the Government of Sind.
 ✓ Director of Industries, Punjab.
 The Diwan of Bhavnagar State.
 Prime Minister of Kolhapur State.
 ✓ Secretary to the Government, Department of Commerce and Industries, His Exalted Highness The Nizam's Government.
 Chief Secretary to Government, Travancore State.
 ✓ Secretary, Commerce Department, Gwalior State.
 ✓ Secretary to Government, Development Department, Mysore State.
 ✓ Director of Industries and Commerce, Mysore State.
 ✓ Director of Industries and Labour, Baroda State.
 ✓ Commissioner of Customs, Commerce and Industry, Indore State.
 The Joint Secretary to Government, Cochin State.

(b) NON-OFFICIALS.

(i) *Chambers, Associations, etc.*

- Indian Merchants Chamber.
 Maharashtra Chamber of Commerce.
 Karnatak Chamber of Commerce.
 Association of Indian Industries.
 Industrial Association, Rajamundry.

- Indian Motion Pictures Producers Association.
 Bombay Salt Merchants and Shilohtris Association.
 Gram Udyog Mandir, Modasa.
 Harijanashram, Ahmedabad.
 Seva-Mandir, Kasare, West Khandesh.
 Bhil Seva Mandir, Dohad.
 Bombay Machinery Merchants and Manufactures Associations.
 Lord Reay Industrial Museum, Poona.
 Northern Division Industrial Co-operative Association. Ahmednagar.
 ✓ Industrial Co-operative Association, Yeok.
 ✓ Industrial Co-operative Association, Malegaon.
 ✓ Industrial Co-operative Association, Ahmedabad.
 ✓ Industrial Co-operative Association, Hubli.
 ✓ Industrial Co-operative Association, Sholapur.
 ✓ Brihan-Maharashtra Weavers Association, Poona.
 ✓ District Weavers Association, Bagalkot.
 Khadi Pratisthan, Calcutta.
 Swakul Sali Mandal.
 Akhil Koli Samaj Parishad.
 Karnatak Kurbar Sangh, Gadag.

(ii) *Industrial Concerns.*

- Shewade's Camera Works.
 Vivekanand Crushing Mills.
 Ravi Udaya Vijaya Fine Art Litho Works.
 Western India Match Company.
 Ogale Glass Works.
 Hasba Fruit Products, Poona.
 Karnatak Industrial and Chemical Works, Dharwar.
 N. Powell and Co.
 Western India Oil Distributing Co.
 Rural Products Company, Poona.
 The Kirki Drug Stores.
 Golden Tobacco Company.
 Vora and Co., Bombay.
 Bombay Soap Factory.
 Gujerat Soap Works.
 Bharat Rubber Works.
 Tata Oil Mills Co., Ltd.
 Bombay Silk Mills.

Doshi Brothers, Anand.
 Shrinivas Slate Works.
 Premier Fruit Product Co., Belgaum.
 Bombay Dyeing and Manufacturing Co., Ltd.
 Ekbote Brothers, Nasik District.

(iii) *Individuals.*

Mr. R. C. Surkatha.
 Mr. S. K. Kallapur.
 Mr. Revashanker M. Raval.
 Prof. P. M. Trivedi.
 Mr. M. N. Patel.
 Mr. N. G. Apte.
 Mr. G. R. Deshpande, Sholapur.
 Mr. Mohanlal Dahyabhai.
 Mr. D. S. Pawar.
 Prof. B. H. Yellburgi.
 Mr. Pragji M. Mehta, Surat.
 Mr. H. H. Punjabhai.
 Mr. C. P. Singani.
 Mr. Manakchand Kisandas.
 Mr. Sorabji Byramji Patel.
 Mr. S. S. Bhatm, Baroda.
 Mr. C. C. Jariwala.
 Mr. S. S. Sakri.
 Mr. B. B. Joshi.
 Mr. Sankalchand G. Shah.
 Mr. Khatri Suleman Abdul Rehman.
 Mr. Rustomji Nowroji Bapasola.
 Dr. K. H. Ogale.
 Rev. Loy Long, Ahmednagar.
 Mr. R. L. Kanbur.
 Mr. B. V. Sathe.
 Mr. K. C. Tiwari, Nasik.
 Mr. N. H. Pherwani.
 Mr. G. G. Gulrajaney.
 Mr. S. G. Barve.
 Mr. G. D. Saraff, Belgaum.
 Mr. V. V. Dastane, Bhusawal.
 Diwan Bahadur A. U. Malji, Broach.
 Mr. Raojibhai N. Patel, Kaira.
 Mr. B. G. Athalye, Bombay.
 Mr. Hiralal B. Buch, Bombay.

APPENDIX E.

INTERVIEWS

(a) with the secretary.

Mr. K. T. Karulekar, Thana.

Mr. N. G. Chapekar, Thana.

Mr. G. L. Joshi, Thana.

Mr. N. P. Nakhva, Thana.

Manager, Thana Bone Mill, Thana.

Indian Salt Makers Association, Thana.

Resident, Gold and Silver Workers Union, Bombay.

Dr. L. C. Jariwala of Jasco Chemicals and Allied Industries Co.

Messrs. G. H. Adarkar and V. M. Adarkar of Vengurla.

Mr. G. H. Kothari of Kothari Brothers & Co., Bombay.

Mr. Amritlal P. Parikh, Proprietor, Business Art Printery.

Mr. Ambalal Jayantilal of Govind Roller Flour Mills, Dohad, Godhra.

(b) with the committee.

Mr. P. V. Kelkar, Inspector of Weavers Societies.

Mr. M. A. Parekh, Representative of Dun Aluminium Works.

Messrs. Kurji Goverdhandas, M. T. Patel, Nursi Monjee, representing Indian Cigarette Manufacturers Association.

Messrs. K. B. Dundur and G. D. Dhongdi, representatives, Industrial Co-operative Association, Hubli.

Messrs. Abdulhusein Gulamalli, Gordhandas Virchand Shah, Ambalal Parekh, representatives, Metal Exchange Association.

Messrs. Sankalchand G. Shah and F. Moos and G. G. Joshi, representing Association of Indian Industries.

Messrs. Bet, Regal and Ramlan rep : Ind : Cop : Association, Sholapur.

Sir C. V. Mehta, Sir H. P. Mody, Mr. Wadia, Mr. D. M. Khatau, and Mr. Iyer representing Mill Owners' Association, Bombay.

Mr. H. J. Ormerod, Dr. Antia and Mr. Nair representing Indian Roads and Transport Development Association.

Messrs. Walawalker, K. R. Koshti, R. S. Sangli, T. S. Goonda, representing Brihan Maharashtra Weavers' Association, Poona.

Messrs. S. L. Dikonda, R. G. Bhondarde, representing Indian Co-operative Association, Ahmednagar.

Sheth Kasturbhai Lalbhai, Sheth Shantilal Mangaldas and Mr. B. L. Umarwadia, representing Ahmedabad Mill Owners' Association.

Mr. Munshi, Marketing Officer, Department of Industries.

Mr. Savkur, Textile Designer, Department of Industries.

Mr. Haskell, Industrial Engineer, Department of Industries.

APPENDIX F.

*Spare-time occupations for agriculturists.**Ahmedabad District*

- .. Hand-spinning.
- Hand-weaving.
- Carpentry.
- Smithy.
- Masonry.
- Manufacture of *dal*.
- Grinding.
- Preparing wire cages for trapping rats.
- Knitting.
- Preparing toys of wood and clay.
- Preparing dry ginger and dry turmeric.
- Preparing paper pulp for toys.
- Preparing *gulabjal* and *gulkand*.
- Lac and lacquer work.
- Cane work.
- Wood-turning.
- Carving on wood and metal.
- Country soap-making.
- Collection of gum.

Kaira District

- .. Hand-spinning.
- Hand-weaving.
- Carpentry.
- Smithy.
- Masonry.
- Manufacture of *dal*.
- Grinding.
- Preparing wire cages for rats, etc.
- Knitting.
- Preparing of toys (of wood, clay and tin).
- Bamboo-making.
- Chunam*-burning.
- Drying rayon.
- Country soap-making.

Surat District

- .. Hand-spinning.
- Hand-weaving.
- Rope-making.
- Carpentry.
- Bamboo basket-making.
- Coal-burning.
- Collecting leaves.
- Cleaning of *tur dal*.
- Grinding.
- Knitting.

Surat District—contd. .. Brick and tile-making.
 Preparing dry ginger and turmeric.
 Preparing *randeri bor*.
 Preparing paper pulp.
 Preparing *gulabjal* and *gulkand*.
 Lac and lacquer work.
 Toy-making.
 Wood-turning.
 Wood and metal carving.
 Collecting gum and honey.

Thana District .. Hand-weaving.
 Carpentry.
 Basket-making.
 Mat-making.
 Coal-burning.
 Collecting leaves.
 Grinding.
 Rope-making.
 Umbrellas and fan-making.
 Preparing wire cages.
 Toy-making.
Chunam-burning.
 Pottery.
 Brick and tile-making.
 Collecting honey.
 Country soap-making.

BROACH AND PANCH MAHALS.

Panch Mahals Division.
 Hand-spinning.
 Hand-weaving.
 Rope-making.
 B a m b o o basket-
 making.
 Collecting leaves of
Khakhra.
 Collecting *bidi* leaves.
 Grinding cereals.
 Knitting.
 Toy-making.
 Brick and tile-making.
Chunam-burning.
 Paper pulp-making.
 Collecting tanning
 materials.
 Lac and lacquer work.
 Wood-turning.
 Country soap-making.
 Snuff-making.

Broach Division.
 Hand-spinning.
 Hand-weaving.
 Rope-making.
 Carpentry.
 Coal-burning.
 Collecting leaves of *Khakhra*.
 Collecting *bidi* leaves.
 Grinding cereals for flour.
 Preparing wire cages.
 Knitting.
 Toy-making.
Chunam-burning.
 Preparing of dry ginger.
 Preparing *gulabjal* and *gulkand*.
 Lac and lacquer work.
 Collecting honey.
 Toy-making.
 Country soap-making.
 Wood-carving.

- Nasik District* .. Hand-weaving.
Basket-making.
Coal-burning.
Collecting leaves of trees for *bidis*.
Grinding.
Knitting.
Chunam-burning.
Preparing wire cages.
Wood-turning.
Country soap-making.
- Poona District* .. Hand-spinning.
Hand-weaving.
Rope-making.
Bamboo basket-making.
Coal-burning.
Collecting leaves.
Cleaning of *tur dal*.
Toy-making.
Snuff-making.
Mat-making.
Brick and tile-making.
Knitting.
Preparing wire cages.
Preparing *gulabjal* and *gulkand*.
Collecting honey.
Country soap-making.
Chunam-burning.
- Ahmednagar District* .. Hand-spinning.
Hand-weaving.
Rope-making.
Carpentry.
Bamboo basket-making.
Coal-burning.
Cleaning of *tur dal*.
Grinding.
Snuff-making.
Preparing wire cages.
Toy-making.
Chunam-burning.
Collecting gum.
Collecting tanning materials.
Lac.
Collecting honey.
Soap-making.
- Sholapur District* .. Hand-spinning
Hand-weaving.

- Sholapur—(contd.)* .. Rope making.
 Coal burning.
 Cleaning of *tur dal*.
 Brick and tile making.
Chunam burning.
 Country soap-making.
 Toy making.
- Satara District* .. Hand spinning.
 Hand weaving.
 Rope making.
 Coal burning.
 Manufacturing *tur dal*.
 Collecting *bidi* leaves.
 Knitting.
 Brick and tile making.
Chunam burning.
 Paper pulp making.
 Lacquer work.
 Collecting honey.
 Wood turning.
 Country soap-making.
- East-Khandesh District* .. Hand spinning.
 Hand weaving.
 Toy making.
 Preparing turmeric.
 Preparing paper pulp.
 Country soap-making.
- West-Khandesh District* .. Hand spinning.
 Hand-weaving.
 Rope making.
 Coal burning.
 Preparing wire cages.
 Toy making.
 Knitting.
Chunam burning.
 Preparing paper pulp.
 Collecting gum.
 Lac and lacquer wares.
 Wood turning.
 Country soap-making.
- Belgaum District* .. Hand spinning.
 Hand weaving.
 Rope making.
 Basket making.
 Collecting leaves for *bidis*.

- Belgaum District—(contd.)* Toy making.
 Brick and tile making.
 Coal burning.
 Paper pulp making.
 Collecting honey.
 Lac.
 Country soap-making.
- Bijapur District* .. Hand spinning.
 Hand weaving.
 Basket making.
 Country soap-making.
 Rope making.
 Knitting.
- Dharwar District* .. Hand spinning.
 Hand weaving.
 Rope making.
 Knitting.
 Basket making.
 Collecting *bidi* leaves.
 Toy making.
 Paper pulp making.
 Lac.
 Country soap-making.
- Kolaba District* .. Hand spinning.
 Hand weaving.
 Rope making.
 Basket making.
 Mat making.
 Preparing wire cages.
 Brick and tile making.
 Toy making.
 Pottery.
- Ratnagiri District* .. Hand spinning.
 Hand weaving.
 Coal burning.
 Rope making.
 Collecting leaves for *bidis*.
 Toy making.
 Preparing turmeric.
 Collecting honey.
 Mat making.
 Basket making.

Kanara District

- .. Hand spinning.
- Hand weaving.
- Rope making.
- Collecting leaves for *bidis*.
- Coal burning.
- Chunam* burning.
- Toy making.
- Mat making.
- Basket making.
- Lac and lacquer work.
- Collecting honey.
- Working in bamboos.
- Country soap-making.

APPENDIX G.

OFFICE OF THE CHIEF CONSERVATOR
FORESTS, PROVINCE OF BOMBAY,
Poona, 12th November 1938.

Dear Dr. Rao,

The Government of Bombay has held no formal enquiry into the question of the better exploitation of the forest resources of Bombay, and there is therefore no copy of a report available.

Government has, however, been taking considerable interest in this question and I append a very brief note showing the subjects now under investigation.

Yours sincerely,

D. B. SOTHERS.

To .

Dr. V. K. R. V. RAO, M.A., Ph.D. (Cantab.),
Member and Secretary,
Bombay Economic and Industrial Survey Committee,
Old Customs House Yard, Bombay, No. 1.

NOTE.

1. *Bamboo pulp*.—Test surveys of the bamboo areas in the Kalinadi and Gangavali valleys in Kanara to be made. Several firms are interested in this and are making enquiries.
2. *Vegetable tanning materials*.—Brief survey of present supplies completed.
3. *Catechu production*.—Inquiries under progress.
4. *Preservative treatment for soft woods*.—Under consideration.
5. *Development of charcoal in the Southern Circle*.—Being undertaken by (a) instruction of local labour (b) by introduction of Frikiln.
6. *Producer gas for lorries*.—Under consideration in connection with (5).
7. *Kiln seasoning of woods*.—Under consideration and awaiting results from Dehra Dun on supply of a cheap reliable kiln.
8. *Development of plywood and lamin*.—Partly dependent on (7), but Government are asking for services of Dr. Bor to investigate the possibilities of soft wood supply for plywood industry from the Gersoppa evergreen forests.
9. *Development of supply of timbers for industries such as bobbins, shuttles, picking sticks, shoe heels, axe handles, shooks for packing cases, etc.*—Dr. Kapur from Dehra Dun recently visited Bombay and has given much valuable information. He is being supplied with various timber samples for testing at the Forest Research Institute. Government has ordered submission of proposals for appointment of a Utilisation Officer to develop this work.
10. *Actinodephne hookeri fat*.—The Forest Research Institute is conducting experiments and supplies of the *barries* from Mahableshtar have been made to that Institution for the purpose. The seeds contain about 96 per cent. trileurin from which lauric acid is obtained.
11. *Kullu gum*.—The gum of *Sterculia Urans* is known as *Kullu gum*. Attempts are in progress in the Northern and Central Circles to introduce systematic tapping so as to develop the industry. The income from the sale of this product in Khandesh at present is over 7,000 rupees.
12. *Bidi leaves*.—The leaves of the *temburni* tree are used for *bidi* making. Experiments are being made with a view to producing larger and more pliable leaves by means of pollarding the trees.
13. *Fibres*.—It has been arranged to supply samples of fibre of 12 different trees to the Director of Industries, Bombay, for discovering their industrial and commercial possibilities.
14. *Tere pods*.—Information has been supplied to an American firm through the Director-General of Commercial Intelligence and Statistics in regard to the quantity of *tere* (*Wagatea spicata*) pods annually available and the price per ton c. i. f. New York and Boston. Result awaited.
15. *Mahua (Bessia latifolia) seeds*.—An American firm of oilseed importers has been supplied, through the Director of Industries, Bombay, and the Imperial Council of Agricultural Research, New Delhi, with information regarding the total quantity of *mahua* seed available and the centres of production. Result awaited.