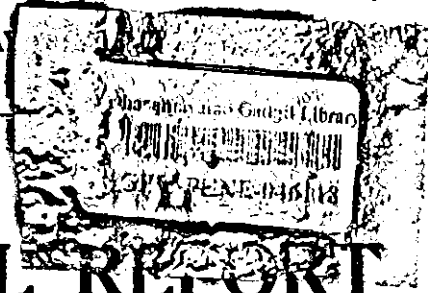


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DEPARTMENT OF INDUSTRIES

BOMBAY



ANNUAL REPORT

1924-25



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No. I 20—3366.

OFFICE OF THE DIRECTOR OF INDUSTRIES,  
OLD CUSTOMS HOUSE :  
Bombay, the 12th November 1925.

FROM

F. E. BHARUCHA, Esq., L.M.E., M.I.M.E., M.I.E.,  
Director of Industries, Bombay ;

TO

THE SECRETARY TO GOVERNMENT,  
General Department,  
Bombay.

*Subject.*—Annual Report, 1924-25.

Sir,

I have the honour to submit the annual report of the Department of Industries for the year 1924-25 (1st August to 31st July).

### POLICY

2. As a result of the resolution of the Legislative Council the post of the Director of Industries was abolished with effect from 19th May 1924, and I, as the Assistant Director, was in charge of the Department till the 17th June 1924 when my designation was altered to Superintendent, Weaving, and I was asked to carry on the work of the Department. My designation as Superintendent, Weaving, was altered to Superintendent of Industries on the 10th September 1924 and on the 14th of July 1925 the appointment of the Director of Industries was recreated and I was appointed to hold it.

3. I was, therefore, in charge of the Department of Industries under different designations throughout the year and the following activities of the Department were under me :—

- (1) Supply of commercial intelligence to private enterprises.
- (2) Professional or technical advice and assistance to minor industries.
- (3) Demonstration in cottage industries, especially in weaving,

4. The above activities were under dual control, the weaving section being under the control of the Co-operative Department, and the industrial activities under the control of the General Department.

### STAFF

5. All the old clerks of the Department having been disbanded and dispersed in May 1924 I had under me only one clerk in the beginning. One typist was subsequently added. Besides these two clerks in the Bombay office I had four weaving assistants and one dyeing and calico printing assistant under me and a staff of 33 weaving masters, demonstrators and their assistants all working in the mofussil. In the absence of sufficient clerical staff to cope with the activities under me as enumerated above, I had to work under great difficulty throughout the year, which can be gauged from the bulk of correspondence work done by my office during the year. Total number of letters received and despatched by this Department during the year under report was 3,120 and 2,742, respectively, as compared with 5,877 and 5,775 in 1922-23 and 5,609 and 5,740 in 1923-24.

### EXPENDITURE

6. The expenditure incurred by the Department during the financial year 1924-25 and the two preceding years has been as follows :—

				Rs.
1922-23	..	..	..	2,39,000
1923-24	..	..	..	1,37,885
1924-25	..	..	..	65,800

7. In 1924 the Legislative Council voted Rs. 1,11,000 plus Rs. 9,000 non-voted for the Department of Industries. As some of the activities of this Department were transferred under certain heads the grants for them were also transferred to their respective heads, leaving Rs. 84,685 for this Department, out of which Rs. 65,800 were spent. This includes the salary of the Director for two months and a half and of the whole of the old staff for three months. Although the grant for the weaving section was transferred to 34—Agriculture, I have included it in the above expenditure under 35—Industries.

### TOURING

8. For want of sufficient clerical staff under me and in the absence of any responsible assistant who could look after the office work in my absence, I could not do much touring during the year. However,

I was on tour for 52 days during the year and my tours included the following places :—

Barsi, Poona, Satara, Than Road (Kathiawad), Ahmedabad, Ankleshwar, Malegaon, Sholapur (three times), Bijapur, Nasik, Sinnar, Ahmednagar, Patherdi, Tukwada, Surat, Broach, Borsad and Karamsad.

### INSPECTION AND INVESTIGATION ON BEHALF OF STORES PURCHASE DEPARTMENTS

9. Workshops, showrooms, shops and godowns of 14 firms in Bombay were inspected by me during the year on behalf of the Stores Purchase Department of the Government of the United Provinces as they had applied for registering their names as approved contractors and suppliers of stores, and reports were submitted.

### DEVELOPMENT OF INDUSTRIES

10. The unusual depression in trade continued throughout the year but owing to the rise in the exchange and fall in the prices of machinery four new cotton spinning and weaving mills were projected at Barsi and one at Sholapur. Two of the new mills at Barsi are already under construction. The New Oil Mills, Bombay, the largest of its kind in the Presidency, stopped work owing to financial stringency, and another oil mill in Bombay changed hands. The oil industry like the textile industry did not fare well during the year and there are no signs of any extensive industrial developments in the near future. Two new cotton mills—one at Dhulia and one at Chalisgaon—completed their construction.

11. There are no circle or district officers attached to this Department through whom information regarding new industrial developments in the various districts of this Presidency could be obtained. I have, however, been able to collect information about some new industrial ventures which I give below.

12. **Satara Industrial Works** have completed their extension and are now equipped with an up-to-date plant for manufacturing agricultural implements and small machines for rural industries.

13. **Ogale Glass Works (Karad)** have largely extended their works and have added a large up-to-date and well-equipped workshops for manufacturing hurricane lanterns complete, including a plant for manufacturing corrugated straw boards for packing the lanterns and other glass articles turned out by the factory.

14. **Pioneer Magnesia Works (Kharaghoda)** did not do much business in manufacturing and selling magnesium chloride prepared from the waste mother liquor or bitters of Prichard Salt Works at Kharaghoda, owing to the formidable rivalry of the imported German stuff. The

works applied to the Tariff Board for protection but it was negated. The Company managing the works is now working on a profit sharing basis with the Government of India instead of paying a fixed royalty.

15. **Sorab Dalal Tile Works (Than Road, Kathiawad).**—The manufacture of flooring tiles of the Minton type having failed, the works devoted their attention to the manufacture of acidproof jars large and small and succeeded in putting them on the market in Bombay, Gujarat and Kathiawad. The jars are now in great demand and the proprietor contemplates opening a branch factory in the suburbs of Bombay in the near future. They also manufacture fire-bricks and allied goods.

16. **Bharat Tile Works (Uran)** have converted their factory from hand-driven to a power-driven one by installing new and most up-to-date labour-saving machines for manufacturing cement flooring tiles. Their tiles are now used in many public and private buildings of Bombay and compete fairly with similar imported tiles in quality and price.

17. **Godrej Soap Works** for manufacturing toilet soap have been shifted to a large and specially built buildings on DeLisle Road, Bombay, and will shortly be producing toilet soap in larger quantity from purely vegetable stuff for which there seems to be a good demand.

18. **Hosiery Works.**—The Katrak Hosiery Works, Bombay, and the Bharat Knitting Works, Poona, are doing well and have been equipped with the most up-to-date automatic power-driven machines. The Poona factory has been converted into a joint stock company to enable it to extend its scope with increased capital.

19. **Gauri Gold and Silver Works Company, Surat**, has been extended and equipped with some up-to-date machines for gold and silver wire drawing, gilding, lametta, tinsel and other articles used in gold and silver embroidery work, and is now electrically driven throughout. Messrs. Shastri and Chhapadia who were given scholarship by this Department to visit Europe and gain first-hand knowledge and experience in the manufacture of these articles seem to have derived much benefit from their excursion abroad and have made many alterations and improvement in their works on their return.

20. **Great Eastern Engineering Works, Bombay**, have been largely extended during last year and equipped with some very good high speed tools for manufacturing small industrial machines as has been stated under the heading of " Manufacture of Machinery " in this report.

#### MANUFACTURE OF MACHINERY

21. Two large works have lately been established in this Presidency for manufacturing machinery suitable for agricultural and small industries. These are the Satara Industrial Works at Satara and the Great Eastern Engineering Co., Ltd., at Bombay.

22. The Satara Industrial Works manufacture agricultural implements such as iron ploughs of various kinds, sugarcane crushers, rope-making machines, etc. They have largely extended and equipped their works with modern tools during the year, putting down a large gas engine to drive their workshops. The ploughs and other articles manufactured at these works are well spoken of and are in good demand.

23. The Great Eastern Engineering Company have lately put down a large workshop and foundry at DeLisle Road, Bombay, occupying an area of about 60,000 square feet, and are well equipped with high speed machine tools for manufacturing cotton gins, corn grinding mills, rotary oil mills, sugar cane mills, pumps, ground nut openers, saw benches, etc.

24. Manufacture of machinery in this country has been almost entirely neglected partly through lack of scientific knowledge and partly through lack or dearness of raw material. Now as large iron and steel works have been permanently established in this country and as well-trained engineers are also available, there is no reason why this industry should not expand and flourish in this country. The special features of some of the machines turned out by the above named works as compared with those of the imported ones are that practical experience gained in this country on the spot under local labour and local circumstances has been brought to bear on the designs and constructional details of these machines. As, for instance, large accumulated experience is now available in this country regarding the difficulties and defects that often come across in working the imported cotton ginning machines which if made in this country could be greatly improved so as to eliminate them. Similarly rotary oil ghanis, flour grinding mills, etc., must be designed to suit and answer the local demands and local circumstances which are often different in various districts.

### MATCH FACTORIES

25. With a view to protect the match industry of this country Government of India levied an import duty of Rs. 1-8 per gross boxes of matches in 1922. In order to evade paying this duty some match factories were set up in the suburbs of Bombay for manufacturing matches from imported ready made undipped splints and veneers for boxes, the process of dipping or providing the chemical tips to the imported splints having been carried out locally by hand work.

26. Later on in order to further protect our match industry using indigenous wood Government of India levied duty on splints and veneers imported from foreign countries, the import duty on the finished matches remaining the same. The Bombay factories, therefore, ordered out machinery last year and began to manufacture matches by power from logs of matchwood imported from Sweden, Finland and Japan, and some of the factories worked day and night last year in order to take the fullest

advantage of the protection given to the industry by the heavy import duty which amounted to 150 to 200 per cent. on the cost of matches.

27. There are now 14 match factories in this Presidency, seven of which have been established in the suburbs of Bombay. Their approximate total output is estimated at 30 to 40 lakhs gross boxes annually, and except three or four factories that use indigenous wood from our forests all the others import and use match wood logs from foreign countries. According to the customs authorities match wood logs worth Rs. 4,37,752 were imported from foreign countries into Bombay port during the year 1924-25 on which the import duty was paid at 15 per cent *ad valorem*.

28. A circular letter was issued by me to all the match factories asking their requirements of match wood and it was roughly estimated from the replies received that the total quantity consumed by the factories would be about 20,000 tons annually.

29. I received several enquiries regarding information on match wood available from the forests of this Presidency, but in the absence of any reliable data I could not supply them and referred the applicants to the Forests authorities. The notes and classification of some kinds of match wood given in "Prospects of Match Industry" by Mr. R. S. Troup, Imperial Forest Economist to the Government of India, is now very old and obsolete as it was published about sixteen years ago. An abstract was published from these notes by this Department in the form of a small pamphlet for the benefit of the enquirers, but it seems to have not satisfied the demand as it does not give the fullest information. The forest department was therefore asked to revise and supplement these notes, but the very little extra information that has been supplied is practically of no use to the industry.

I am of opinion that in order to satisfy the growing demand for more accurate and reliable information on the subject, it is necessary to have our forests explored and reported upon by a match technologist after having actually tried in a match factory the various species of match wood that may be discovered. This has already been done by the Governments of Bengal and Bihar and Orissa. Much important and original research work can be done in this subject with the help of a match technologist and with the co-operation of the forest and this departments. Government has, therefore, been requested to arrange for a suitable and sufficient supply of match wood from our forests, as far as it may be practicable through the forest department which is now investigating the whole problem.

### POTTERY

30. The proprietor of Sorab Dalal Tile Works at Than Road (Kathiawad) complained to this department regarding the undue competition set up by the newly started semi-commercial pottery factory

at Sir J. J. School of Art, Bombay, in the manufacture of acid proof jars. As the control of the pottery section was transferred to another department last year, the complainant was directed to apply to that department, which he did. I was then asked by Government to investigate into the complaint and submit a report, which was done, with the result that the semi-commercial pottery factory at Sir J. J. School of Art has been stopped.

### TECHNICAL ADVICE AND HELP

31. I visited the following places to give technical advice and help.

**Lokmanya Mills, Barsi.**—Helped in laying out the whole mill on the most economical and labour saving lines. Also specified and helped in the selection of the power plant, humidifying plant, etc.

**Satara Industrial Works.**—Helped in designing and laying out the whole works and subsequently its extension. Advised on the most economical way of producing power and on the method of the reduction of foundry slag and waste.

**Sorab Dalal Tile Works, Than Road (Kathiawad).**—Advised on the best method of firing the furnaces for producing uniform heat throughout and on the repairs of the furnaces that had cracked.

**Pioneer Silk Works, Ankleshwar.**—Gave general technical advice on silk weaving and power plant.

**New Oil Mills, Bombay.**—Gave general technical advice on various matters and on boiler setting, etc.

**Jam Mills, Sholapur.**—Inspected the power plant and the mill and submitted a report as to their condition and necessary improvements needed.

**Criminal Tribes' Settlement, Sholapur.**—Advised in the laying out of a hand weaving factory on the most modern lines.

**Bharat Tile Works, Uran.**—Advised on converting the hand machines into power driven ones and gave general technical advice.

**Tukwada Co-operative Society.**—Gave technical advice and instructions on the pumping plant for agricultural purposes.

**S. P. Sagar's Sugar Refinery, Bombay.**—Gave technical advice on the method of working and converting the factory into a power driven one.

**Godrej Soap Works, Bombay.**—Gave general technical advice on the layout and power for the newly constructed buildings on the DeLisle Road.

**Gowarikar & Co.'s Iron Works, Sholapur.**—The works were inspected on behalf of the Registrar of Co-operative Societies and a report was submitted to him on the valuation of the plant, and stock and buildings, etc.



**Great Eastern Engineering Co.'s Works, Bombay.**—Gave general technical advice on the most modern methods of doing work.

32. I was invited to visit Karachi to give technical advice and help to various industrial concerns of a firm, but I could not spare myself for the journey for want of an assistant under me, who could look after office work in my absence.

33. Besides the above visits a large number of people called and visited me in my office to consult me on various industrial and technical and commercial matters, and I was often asked to accompany them to the offices or showrooms of machinery dealers to help them in selecting machinery or power plant for their industrial concerns. Similarly technical advice and opinions were given to a number of applicants from various parts of the Presidency on various engineering, technical and industrial subjects, such as selection of power plants for new factories, the layout of machinery, defects in machinery, water softening plant, pumping water, scheme for a technical school for Mahomedans, re-organisation and layout of the workshops of the Ratnagiri Technical school, designing and planning of the Kareli Co-operative Society and selecting power plant and machinery for the same, best rope driving arrangement for the Jaishankar Mills at Barsi, etc., etc.

#### ROSHA OIL

34. Nothing has been done so far in working and demonstrating the new still for the distillation of rosha grass oil since its arrival from England in 1923 as the contract for collecting the rosha grass has been given to a syndicate. It is however proposed to conduct the experiment departmentally next cold season, if sufficient quantity of grass and facilities for the experimental demonstration are available.

#### FISH OIL

35. The sardine oil plant at Majali (District Karwar) remained idle throughout the year for want of adequate supply of fat sardines suitable for extracting the oil. It is proposed to make a demonstration next cold weather if the supply of suitable sardines is available.

#### BUTTON MAKING MACHINERY

36. The machinery for manufacturing buttons from horns, bones and some kinds of dried nuts, that was designed and made for this Department in the Dapuri Workshops, Poona, was loaned to the Department of Industries, United Provinces, for experimenting purposes, but the machinery was not put to work during last year. It appears however from a letter recently received that the machinery will shortly be put to work in the United Provinces.

## STATE AID TO INDUSTRIES

37. Four applications were received during the year requesting for financial help from Government through this Department. One application was from a very large industrial concern asking for a loan of several lakhs of rupees and offering their whole property as a mortgage to Government, but as the industry that was carried on by the concern was not a nascent one and as the concern could have easily secured a loan from a bank or private financier, nothing could be done in the matter. The applications of two other firms could not be considered as they were not willing to offer their property by way of security while the fourth one is still under consideration.

38. A loan of Rs. 15,000. was sanctioned to an industrial concern in Surat in 1923, and half the sum was borrowed by them, but as they subsequently differed on certain clauses in the mortgaged deed to be executed by them they declined to receive the balance last year and refunded Rs. 7,500 with interest which they had received in the beginning.

## COMMERCIAL AND INDUSTRIAL INTELLIGENCE

39. A representative list of enquiries received during the year is given in Appendix B and shows their general nature and the magnitude of work done in digging out the information from various sources and supplying the same to enquirers with the help of only one clerk under me. This is the most popular section of this department, and, in spite of the general depression in the trade, people did not fail to avail themselves of the services that this department could render in supplying information on wide and varied commercial and industrial subjects as well as in engineering and technical matters.

40. In addition to the enquiries enumerated in Appendix B as many as 112 enquiries on other miscellaneous subjects were received and disposed of which cannot be strictly classed with commercial or industrial ones.

41. As a rule enquiries from overseas firms for trade connections with Bombay merchants were passed on to H. M. Trade Commissioner, and those from Indian merchants for trade connections with foreign countries were passed on to the Director-General of Commercial Intelligence and Statistics, Calcutta.

## CHEAP POWER

42. A petition was received by me from several owners of small industrial factories of Poona who use electrical energy supplied by the Poona Electric Supply Co., Ltd., to ask the company to reduce the rate of power-supply from 2½ annas per unit to 1½ annas. This question was referred to the Electrical Engineer to the Government of Bombay for opinion who

reported that it was not possible for the Company to reduce the rate as the Company was not making a reasonable return on the capital invested.

43. This opens up the most important question of supplying cheap power to small industrialists wherever it may be possible in this Presidency. Bombay with its huge schemes of supplying hydro electric energy ought to be able to supply cheap power to small industrial factories, but the Bombay Electric Supply and Tramways Co., Ltd., charge 2 annas per unit for installations of from 5 to 10 brake horse power, while the rate charged by Messrs. Tata Sons, Ltd., for supplying electrical energy to large cotton mills from their several hydro electric works range from '5 to '9 of an anna per unit. It appears that the Tramways Co. now purchase electrical energy in bulk from Tata Sons, Ltd., at a very low rate of '425 annas and after using a large quantity in their own work, sell the surplus to small industrial concerns at a rate varying from 1'5 anna to 2 annas per unit. Of course the Tramways Company use their own transformers and mains, etc., for distributing the power, and they are therefore entitled to a reasonable profit on their retail business, but it is for consideration if the rate of retail supply charged by the Company could not be reduced so as to help the small industries.

44. In motors of small power and low efficiency one unit of current supplied at the terminals of the motor produces one brake or actual horse power at the driving pulley. In large power motors one unit replaces about 1'25 horse power.

45. With the price of crude fuel oil @ Rs. 65 per ton at present in Bombay the cost per one horse power per hour in a crude oil engine comes to from '75 to 1 anna. This engine is, therefore, a formidable rival of electrical energy in Bombay, and, had it not been for the restrictions to its installation in Municipal areas, the crude oil engine would have been more widely adopted by small industrial concerns in Bombay in spite of various advantages and facilities offered by the electrical drive. For varying and intermittent loads, however, an oil engine drive is not so economical as an electrical one.

46. I am of opinion that much impetus and help could be given to small industrial factories in Bombay and its suburbs, if it can be arranged to supply electrical energy at from 1 to 1'5 annas per unit.

47. The following pertinent remarks appear on the subject on page 137 in paragraph 207 of the Report of the Industrial Commission :—

“ In towns and cities where there is a public electric supply the use of electro motors for driving small machines has been but very slightly encouraged. We have not the least doubt that they will ultimately prove most helpful to the artisans and will greatly facilitate the introduction of a more organised system of production.”

## COTTAGE INDUSTRIES

48. The most important cottage industry of this Presidency is the hand weaving, because almost a third of the population following cottage industries in this Presidency depend wholly or largely on hand loom weaving and allied crafts.

49. Hand loom industry is not dying as is wrongly believed but it is actually flourishing and expanding. The importance and magnitude of this industry can be gauged from the fact—which can be proved by actual figures—that of the total cloth consumed in this country about one-third is produced on hand looms, about one-third on power looms, and about one-third is imported from foreign countries.

50. **Hand Weaving Industry.**—The Department of Industries, therefore, is paying particular attention towards helping and reviving this industry by demonstrating and introducing the most modern and improved methods of producing hand woven goods by means of improved flyshuttle looms and other preparatory appliances such as hand driven machines for winding, warping and sizing, and mechanical dobbies for weaving patterns or borders.

51. The type of hand loom which has become the most popular amongst the weaving community and has given the greatest benefit to the weavers is the flyshuttle loom by means of which the production of a weaver is increased by about 40 per cent. as compared with that on the old fashioned throw-shuttle loom. Besides giving the increased production the flyshuttle loom enables a weaver to weave a cloth of greater width and use longer warps. This loom as well as the mechanical dobby are almost entirely made of wood in this Presidency, and their increasing demand has set up a new subsidiary industry for manufacturing them in various weaving centres.

52. These improved methods and appliances are introduced amongst the hand loom weavers in two ways, *viz.*, by means of weaving schools and weaving demonstrations.

53. **Weaving schools** are opened in important weaving centres or large towns and are usually equipped with eight to ten flyshuttle looms—khadi looms for beginners and saree and fancy cloth looms for more advanced pupils. Boys belonging to the weaving community are admitted into these schools to whom instructions are given in weaving various kinds of plain and fancy cloth as well as in pattern and dobby work, and the advantages obtained by using improved healds, reeds, shuttles, pirns, etc., are explained and shown to them practically. When available, sons of weavers who have received primary education up to vernacular standards III and IV are given preference for admission so that they may easily understand the simple arithmetical calculations in the art of weaving which is taught in these schools; but provision is also made for giving

preliminary lessons in simple arithmetic to those who require. No fees are charged but a monthly stipend of Rs. 3 is paid to each boy of the weavers' community for the first three months, and regular attendance and skill in working are encouraged by the award of small monthly cash prizes. As the boys advance in practice they produce marketable goods, and the proceeds of their production are paid to them after deducting the cost of yarn, or they are permitted to bring their own yarn and weave on the improved looms under the supervision of the teachers. All help and encouragement are given to the pupils to deposit their earnings in the Post Office Savings Bank so that they may be able to buy a flyshuttle sley and a dobbie and set up for themselves when they leave the school.

54. These schools are placed under a headmaster and an assistant master and are supervised by the weaving assistants of this department who travel almost continually from place to place. Local committees of prominent persons of the particular place are also appointed to visit and supervise the work of the school.

55. These schools are allowed to be kept in a place for a year or two, and, when the object of introducing a sufficient number of improved appliances amongst the weavers of the surrounding locality is achieved, the school is closed and transferred to another weaving centre.

56. **Weaving Demonstrations.**—These are peripatetic, travelling from one weaving centre to another, and are arranged on a smaller scale than weaving schools in small villages specially. The object of these is to demonstrate the working of the flyshuttle loom to the weavers using throw-shuttle ones and to enable the weavers to receive practical instructions under the demonstrator on flyshuttle sleys. The demonstrator is posted to a weaving centre with two flyshuttle looms, on one of which he works and demonstrates the improved method of weaving the kind of fabric usually woven in the village on old throw-shuttle looms, and on the other he invites weavers to come and practice for themselves and gain special instructions as to the mode of working. These demonstrations usually are held from six to twelve months in a place till a sufficient number of flyshuttle looms is taken up by the weavers, which would serve as an object lesson for other weavers to copy. These weavers have a deep-rooted conservatism against adapting any new methods, which takes a long time to break down, and in this way the flyshuttle sley continues to spread slowly but surely amongst the weavers of a particular centre.

57. **Situation of weaving schools.**—In the beginning of the year under report there were five weaving schools held at Parola (East Khandesh), Patherdi (Ahmednagar District), Bijapur, Betgiri (Dharwar District) and Sinnar (Nasik District). They all helped towards introducing the flyshuttle looms in the surrounding districts. The Sinnar school was, therefore, closed and transferred to Vinchur (Nasik District) in November 1924

as the result was satisfactory. The number of flyshuttle looms introduced in Parola, Patherdi, Bijapur, Betgiri, Sinnar and Vinchur are 250, 75, 62, 48, 150 and 60 respectively.

58. **A Weaving School for Agriculturists.**—At the suggestion of the Provincial Board of Agriculture and as per sanction obtained by G.R., G.D., No. 2786 of 20th April 1923 the experiment of training agriculturists to take up weaving as a spare time occupation was carried on in Hoshalli (Dharwar District) till April 1925. After having introduced about a dozen hand looms amongst the agriculturists there, the school was transferred to Benkanhalli (Belgaum District) on the agricultural farm of Mr. V. S. Phaterpekar. There are eight looms working in the school and pupils from agriculturists only from surrounding villages attend the school. They are taught to weave plain cloth only such as gudar, khadi, dhoti, shirting, etc.

59. A full and interesting report of the working of this experimental school for the past three years is given in the Appendix A at the end of the report.

60. **Situations of Weaving Demonstrations.**—Seven demonstrations were in progress during the year in Central and Southern Divisions. They were situated at Pimprala (Khandesh District), Barsi (Sholapur District), Alur (Dharwar District), Kerur (Bijapur District), Guralhusar (Belgaum District), Deshnur (Belgaum District) and Rajapur (Satara District). These are small villages and the number of flyshuttle looms introduced uptil now is 30, 18, 54, 48, 7, 4 and 3, respectively. The weavers of some of the places in the Southern Division where the demonstrations were held requested to have the period of demonstrations extended from six months to one year which was granted.

61. In the year under report the demonstration at Broach was closed and transferred to Barsi in April 1925, that at Ond was transferred to Rajapur in November 1924, and that at Guralhusar was transferred to Deshnur in June 1925.

62. **Weaving schools and demonstrations in Gujarat.**—About two years ago Government approved of a scheme for extending the operations of helping the hand loom weaving industry in Gujarat, and sanction was obtained to open schools and demonstrations on the 25th August 1924. Thereupon one of the weaving assistants was asked to visit and select certain places, and a Gujarati knowing weaving assistant was engaged to organise and open weaving schools and demonstrations with necessary staff and equipment. In the year under report three schools were opened at Surat, Broach and Bulsar, and three demonstrations were opened at Abrama (Surat District), Borsad (Kaira District) and Karamsad (Kaira District). Although these schools have been in operation for a few months only during the year and the staff engaged is new, they have done some good work and aroused interest amongst the weaving community

by introducing flyshuttle looms in their vicinity as given below, and better results are expected as the work progresses.

Surat	..	..	..	6 Looms
Broach	..	..	..	16 "
Bulsar	..	..	..	12 "
Abrama	..	..	..	7 "
Borsad	..	..	..	8 "
Karamsad	..	..	..	35 "

63. **Demonstrations of hand sizing machines, automatic looms and other modern preparatory appliances for hand weaving.**—About three or four years ago a demonstration in the improved method of preparing a sized warp by means of a hand worked yarn sizing machine imported from the Weaving Institute of Bangalore was opened at my suggestion at Ahmedabad ; but it failed for various reasons, one of which was that the machine did not suit the local circumstances and requirements, and another reason was that the demonstrator was not an experienced hand. I took the machine subsequently to Amalsad and placed it in charge of a mill-trained mistry who carried out many improvements in the machine at my suggestions, and it worked successfully. The machine was afterwards taken to Dhulia, and, taking advantage of the skilled labour and facilities available there, an altogether new machine was designed and evolved under my supervision. The machine attracted much attention of the hand weavers, and a weaving factory owner of Faizpur (Khandesh) purchased it for his own use. This warping and sizing machine is suitable for a weaving factory containing from 15 to 20 hand looms but is too expensive and too large for an individual weaver. Taking encouragement from this success, another larger machine was designed and built for this Department at Dhulia and taken to Sholapur last year, where hand weaving is largely done on factory scale by some of the wealthy weavers. This machine has aroused so much interest among the weavers of Sholapur that they have repeatedly applied to me to extend the period of the demonstration at Sholapur. Even a weaver (factory owner) from Rajkot went specially to Sholapur to take down sketches and particulars of this machine and stayed there for a fortnight to learn its working.

64. The story of the success of the warping and sizing machine having reached Surat, I received last year a petition signed by about 80 weavers of that place to take the demonstration there for their benefit. Surat has, therefore, been earmarked for such a demonstration after having finished at Sholapur.

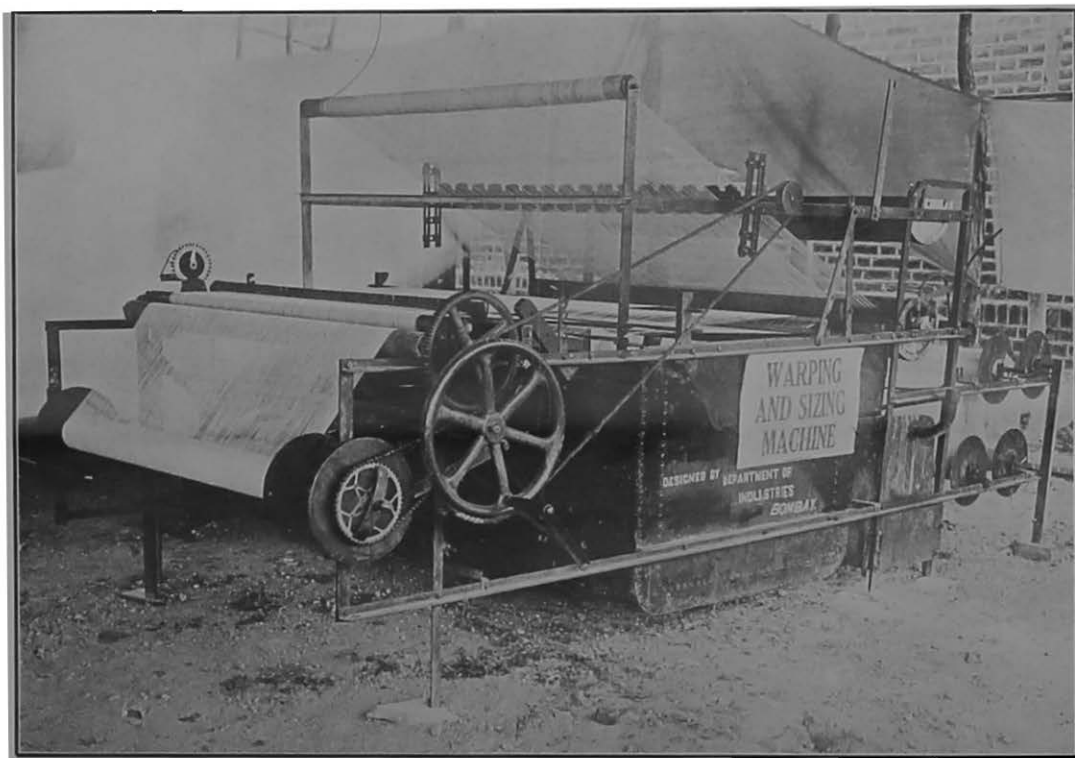
65. Besides the large warping and sizing machine which can size, dry and prepare a warp of about 2,400 ends of 120 yards length in one operation of 8 hours, a small cottage warping and sizing set suitable for



Cottage Hand Sizing and Warping Machine (suitable for an individual weaver).

(See page 14)





Large Hand Sizing Machine (suitable for a hand-loom factory).

(See page 14)

individual weavers has also been designed, made and demonstrated at Sholapur, and it has become so popular there that several weavers of that place are having it copied and made for their own use in their cottages.

66. But this sort of experimental and research work cannot be done in a peripatetic demonstration, and what has been done upto now has been done under great difficulty and inconvenience. I had to go and stay at Amalsad for a fortnight and go to Dhulia and Sholapur several times to advise and help the weaving assistant in charge of this experimental work and I saw the difficulties he worked under. Much more can be done in the direction of designing and evolving bobbin and pirn winding machines, finishing machines, etc., and in improving the preparatory methods of hand weaving industry. This can only be done in a well-equipped weaving institute permanently established in a large and important weaving centre such as Surat. I have already got a large quantity of the requisite equipment in the demonstration of the sizing machine and automatic looms now held at Sholapur, which can be easily transferred to the institute. Besides the sizing and warping machines and bobbin and pirn winding machines all worked by hand, the Sholapur demonstration contains various kinds of looms, such as the English Hattersley loom worked by feet like a sewing machine, the Koshti Kalyan loom (copy of the original Churchill loom of Ahmednagar), the salvation army loom and the flyshuttle looms of various types. All of these would make a very interesting and instructive collection of the most modern and improved appliances in the art of hand loom weaving with the addition of a jacquard loom for weaving high class patterns and doing fancy work in a permanent weaving institute.

67. **Dyeing and Calico Printing Demonstration.**—Dyeing and calico printing industry is a cottage industry, perhaps next in importance to hand loom weaving, as a large number of persons are engaged in it. Calico printing is mostly done in Ahmedabad district and Sindh, but dyeing of cloth and yarn is carried out in all important towns and villages. Persons engaged in these handicrafts are almost wholly illiterate and do their work according to their primitive and ancient methods, which are often uneconomical and non-efficient.

68. A demonstration in these crafts on the most modern and scientific lines is held by this department with the help of a qualified dyer and printer for the benefit of dyers and printers in their own localities in important centres of this Presidency, and they are invited to attend the demonstration of the new methods and learn them. The dyers and printers are allowed to take any samples to the demonstrator in his laboratory and request the demonstrator to show them the methods of reproducing them, and the demonstrator frequently visits the cottages of the dyers and printers to show them the defects of their primitive methods and and teach them the new ones. In this way considerable interest is aroused.

in this demonstration, old prejudices are broken down and new and up-to-date methods of dyeing and printing are making slow but sure progress.

69. In the beginning of the year the demonstration was at Malegaon which is a large centre for hand-loom industry and yarn dyeing, almost the whole of the population of the place having been engaged in these two crafts and allied work. A large quantity of dyed yarn is imported into Malegaon from Bombay and Petlad dye houses, though some quantity is dyed locally by native dyers who use indigo and alizarine dyes but do not know the modern methods of dyeing. Malegaon consumes a large quantity of Turkey red yarn dyed with alizarine and blue or black yarn dyed with indigo which are woven into sarees suitable for Deccan women. The demonstrator introduced a process of dyeing yarn by sulphur and naphthol dyes and other methods hitherto not known to Malegaon dyers, and it aroused much interest in the beginning as about 40 dyers learned the new methods and began to practise them in their dye houses. Feeling jealous of the success and economy of the new methods some old local dyers who would not learn the new processes started an agitation backed up by some influential and wealthy merchants dealing in imported dyed yarn against the demonstration opened by this department with the result that the dyers abstained from attending the demonstration.

70. I visited Malegaon in November 1924 and interviewed several local dyers and learnt from them that Bombay and Petlad dyed yarn was in great demand at Malegaon and as some local merchants had secured sole selling agencies in these lines they thought that if some local dyers learned the art of dyeing yarn to the same shade and colour as the yarn imported and sold by them their trade would be ruined. They therefore instigated the local dyers to boycott the demonstration of this department. The dyers called a meeting of their Jamat (fraternity) and resolved that no dyer should dye yarn according to the new methods demonstrated and introduced by this department, and he who did it was made liable to a fine of Rs. 15. I was informed that even the yarn merchants refused to supply undyed yarn to such dyers and the cloth merchants would not purchase goods woven from yarn dyed according to the new methods.

71. About a dozen dyers who had learnt the new methods and established in the bazar found themselves boycotted. Some of them told me that owing to the competition set up by the cottage dyers with dealers in the mill dyed yarn, the latter reduced their prices which ultimately benefitted the handloom industry.

72. The dyers working with the new methods persisted and applied to this department for extending the period of the demonstration which was done, and the boycott died its natural death. The progress at Malegaon

was therefore satisfactory and the demonstration was closed there in February 1925 and transferred to Sholapur at the request of Sholapur District Weavers' Central Co-operative Union. While at Sholapur the demonstrator resigned and opened his own dye house in partnership with some other dyer. Another qualified demonstrator was, therefore, recruited and engaged and several dyers as well as the weavers have already taken advantage of it.

73. The demonstrator has been regularly visiting the cottages of the dyers and helping them in improving their methods and the later reports from Sholapur are very satisfactory.

### CONCLUSION

74. In spite of the existence of this department for the past six years I have come across many industrialists and others who did not know of its existence. This is because no district circle officers and industrial surveyors have been appointed to tour round to collect information regarding the manufacturing as well as the cottage industries of each of the districts of this Presidency and thus bring the industrialists and cottage workers in intimate contact with this department by offering help to those who may be in need of it. There are many industrial districts in this Presidency which no officer of this department has ever visited, and it is not the fault of the people if a large portion of the population of this Presidency do not know what this department is doing or has been created for. The small industrialists are in greater need of technical help and advice than the owners of cotton mills and other large and well established concerns. There is a large number of small power-driven factories in towns and villages such as cotton ginning and pressing factories, oil mills, flour mills, ice factories, rice mills, etc., which are usually driven by the cheapest and the most out-of-date power plants, placed in charge of engineers who are willing to serve on the lowest wages. These plants are therefore fuel eaters of the worst type and could be improved much or replaced by the most modern and economical ones with the help and advice of this department, if desired by the owners. Two circle officers were actually appointed by this department and kept under training in the Dapuri Workshops for about two years, but owing to retrenchment they were not confirmed.

75. It is also necessary to have a complete industrial survey made of the whole Presidency to find out what arts and crafts or cottage industries and other manufacturing industries by power-driven factories are carried on, and what facilities for obtaining raw material, demand for the finished products, and prospects for expanding exist in various districts. Much more similar useful information could be collected if the industrial survey is carried out on proper lines with the help of circle officers with technical knowledge and experience.

76. The staff on the whole worked with efficiency, though the staff in the Bombay office was much over-worked.

I have the honour to be,

Sir,

Your most obedient servant,

F. E. BHARUCHA,

Director of Industries.

## APPENDIX A.

## ✓ HAND-LOOM WEAVING FOR AGRICULTURISTS

1. At the meeting of the Provincial Board of Agriculture held at Poona in 1921 I had submitted a paper at a very short notice on rural secondary occupations and cottage industries in which I had laid a great deal of stress on hand-weaving as the most suitable one for the agriculturists amongst other cottage industries.

2. The Honourable Sir Chunilal V. Mehta, (the then) Minister in charge of Forest and Excise, Bombay, who had presided over the meeting of the Board, subsequently asked the opinion of the Director of Industries who suggested that the introduction of hand-weaving amongst agriculturists should first be tried in a rural village to be selected by the Department of Agriculture.

3. The suggestion was accepted and the Director of Industries approached Government on the 27th September 1921 to sanction additional weaving staff and incidental expenses for opening a weaving school specially for agriculturists only. This was obtained on 29th November 1921, and the weaving assistant of the Department of Industries was deputed to visit Hebsur, a village in the Hubli Taluka, and Aminbhavi, a village on the Dharwar-Savadatti Road, which were suggested by the Department of Agriculture and to report on their suitability for opening a weaving school, and Hebsur was finally selected. It is situated at about three miles from Dundur station on M. & S. M. Railway, and has a population of about 2,500. Hand-weaving is not quite unknown here as there are about 250 throw-shuttle hand-loom of the primitive type on which "gudar" or durries for threshing floors are woven by some of the local agriculturists during the non-cultivating season, but at the cultivating and harvest time the weaving work is practically stopped altogether.

4. It was thought that amongst a population of agriculturists accustomed to weaving of this kind it might be easy to introduce the weaving of plain shirting, coating, khadi dhoties, sarrees and such other cloth as is ordinarily used by the villagers. A weaving school for agriculturists was therefore opened at Hebsur in March 1922, and boys as well as adult agriculturists were admitted to the school of the age ranging from 15 to 40 years. Weaving of plain cloth was taught on six flyshuttle looms and two looms were specially reserved for more intricate weaving such as twill, drill, chudders, towels, etc. The school work was supervised by a committee consisting of six leading local members of the village.

5. Before the opening of the weaving school at Hebsur "gudars" were woven there with narrow warps in short strips of 8 inches width on the throw-shuttle looms. The usual size of gudar is about  $13 \times 12$  feet which is made up of 13 narrow strips 8 inches wide all sewn together to form a total width of 12 feet. With the flyshuttle loom the local weaver can now use a warp of 24 inches width. He has also been taught the manipulation of longer warps, so that he can now weave a piece of about 90 feet long and 2 feet wide. This can be cut into suitable lengths and 12 feet wide gudar can now be easily and cheaply made by sewing only 6 pieces together instead of 18. The use of longer warp saves not only time and labour but wastage of about 1 yard of warp which is necessary each time a new warp is put on the loom.

The cost of preparing warp by old and new methods is the same; but the weaving charges and sewing charges have been considerably reduced by the introduction of improved flyshuttle looms as given below:—

*Throw-shuttle loom.*

Gudar $13\frac{1}{2} \times 12$ feet.		Rs. a.
Charges for weaving 18 pieces $13\frac{1}{2}$ feet $\times$ 8 inches at 1 anna per piece	..	1 2
Charges for sewing 18 pieces at 1 anna per seam	.. ..	1 1
		<hr/>
Total ..		2 3

*Flyshuttle loom.*Gudar  $15\frac{1}{2}' \times 12'$ .

Charges for weaving 6 pieces $15\frac{1}{2}' \times 24''$ at $1\frac{1}{2}$ anna per piece	..	Rs.	0-9-0
Charges for sewing 6 pieces at 1 anna per seam	..	..	..
			0-5-0
			<hr/>
		Rs.	0-14-0

From the above it will be seen that the cost of manufacturing a gudar has been reduced from Rs. 2-3-0 to annas 14 only by adopting new and improved methods by the agriculturists. The reduction in the cost is more than half per each gudar, while obtaining a gudar  $15\frac{1}{2}' \times 12'$  instead of  $13\frac{1}{2}' \times 12'$  owing to the facility obtained in using longer warps. At the end of a year's working of the school about 24 flyshuttle looms were introduced at Hebsur, 14 of which were used for manufacturing gudars and the rest for weaving plain khadi, dhoti, shirting, etc.

6. In April 1923 the weaving school for the agriculturists was transferred from Hebsur to Hulkoti, another village in the Dharwar District, with the concurrence of the Department of Agriculture. The population of Hulkoti is about 1,500 and before the school was opened the agriculturists were not familiar with the hand-weaving industry. Here 10 flyshuttle looms were fitted up and some of the agriculturists were trained in weaving plain khadi, gudar, twill, dhoties, sarrees, etc. A committee of 8 prominent members of the village was formed to supervise the working of the school. During the period of one year the school was at Hulkoti, a small weaving factory with four flyshuttle hand-looms was opened by a land-owner and 20 flyshuttle looms were purchased by other agriculturists.

7. As the experiment of introducing hand-weaving amongst agriculturists was sanctioned by Government to be carried on for three years only the school from Hulkoti was transferred to Hoshalli in April 1924. This village is in the Dharwar District and was also selected by the Department of Agriculture. The population of this village is about 600 only and the art of weaving plain cloth suitable to the requirements of the agriculturists was taught to those who attended the school. The working of the school was supervised as usual by a committee of 9 members of the village and during the period of one year the school was able to train 18 agriculturists in the art of plain weaving and to introduce 12 flyshuttle looms in the village.

8. Almost all the agriculturists in the village and many others of the neighbouring villages who came to Hoshalli on bazar days visited the school and evinced much interest in the school work. This could be gauged from the fact that nine applications were received by me from various surrounding villages to open such weaving schools amidst them, some of them offering to place a house free of rent at my disposal for this purpose.

9. The period of three years sanctioned for this experiment having expired at the end of March 1925 the Government have recently extended it to a year more, and the school at Hoshalli has been transferred to Benkanhalli in Belgaum District on Mr. V. S. Phaterpekar's agricultural farm from 15th May 1925.

10. The progress of the experimental schools at Hebsur, Hulkoti and Hoshalli has been satisfactory.

Generally an agriculturist requires about six months to get himself trained on flyshuttle looms for weaving plain cloth such as khadi, panjas, dhoti, gudar, chuddar, shirting, etc. The following

figures illustrate the kind of yarn and cloth woven as also the net income earned by some agriculturists trained at our weaving schools at Hebsur and Hulkoti :—

Counts of yarn.	Name of cloth.	Hours required to weave.	Width and length of cloth.	Selling price of cloth.	Cost of yarn including warping charges.	Net income of agriculturists.
				Rs. a.	Rs. a.	Rs. a.
20's grey yarn ..	Plain Khadi or Punjas.	12 hours.	36"×12 yards.	4 4	3 4	1 0
" "	Dhoties ..	16 "	45"×12 yards.	7 0	4 12	2 4
10's grey yarn ..	Gudar or cotton durry.	8 "	27"×12 yards.	6 4	5 4	1 0
" "	Chuddar ..	16 "	45"×12 yards.	12 0	9 8	2 8
30's grey yarn ..	Shirting ..	24 "	36"×16 yards.	9 0	6 0	3 0
20's black yarn ..	Plain bordered saris.	12 "	45"×9 yards.	8 8	6 0	2 8

An agriculturist after six months' practice on flyshuttle looms weaves 5 to 6 yards of plain cloth and earns Re. 1 to Rs. 1-4-0 if he works for 8 hours a day. Winding and warping is done by the agriculturists' family members and the expense of each sized warp of 12 yards long comes to 12 annas which, if he or his family members prepare the warp, remains with him, and this income is over and above the net earnings of the agriculturist who only weaves the cloth.

With fine weaving, intricate designs and long practice, earnings would be double those recorded above, but agriculturists who only follow handloom weaving as a part-time occupation have not the hereditary skill and cannot obtain sufficient practice to enable them to specialise in the art of weaving finer and most costly fabrics.

11. Agriculturists being altogether novice in the art of weaving cannot be expected to be skilled weavers within a short time during which they receive their training in the school, but the number of handlooms introduced in these villages—small though it is—will serve as object lesson for others to copy and tend to promote and introduce the art of weaving gradually amongst these people to enable them to earn a living in time of the failure of crop or famine.

12. I am of opinion that three or four or even more such experimental schools should be opened in purely agricultural villages of various districts of this Presidency for teaching hand-weaving to agriculturists only. Uptil now the Department of Industries has confined the activities of its weaving section to introducing improved flyshuttle looms and preparatory appliances amongst weavers only, while the teaching of the art of weaving to men other than professional weavers has not been done or encouraged by the department, because the staff and the cost of the weaving section of this department are smaller than those of the most of the departments of industries of other provinces of this country. There is ample scope for enlarging the hand-weaving section of this department with a view to introduce hand-weaving as one of the most useful, suitable and simple cottage industries in purely rural area. Hand-loom weaving is a cottage industry in which the raw material is always handy and in which the finished product always finds a market at the door of the weaver. If it fails to do it, the weaver can use whatever he makes in his own household.



## APPENDIX B.

## COMMERCIAL AND INDUSTRIAL ENQUIRIES 1924-25.

Subject of enquiry.	Number of enquiries.
1. Acetone. Manufacturers of— .. .. .	1
2. Acetone oil. Dealers in — .. .. .	1
3. Acid Citric. Machinery for Manufacture of— .. .. .	1
4. Acid Citric. Dealers in — .. .. .	1
5. Acid Citric. Imports of— .. .. .	1
6. Alumina. Prices of— .. .. .	1
7. American cloth. Manufacturers of— .. .. .	1
8. Animal breeding. Information re — .. .. .	1
9. Animal Puree. Sources of— .. .. .	1
10. Amonium Carbonate. Demand for and possibilities for Manufacture of— .. .. .	1
11. Annatto seed. Uses of— .. .. .	1
12. Apparatus, Chemical and Scientific. Dealers in — .. .. .	1
13. Apprentices. Admission into Aluminium Factory. .. .. .	2
14. Babul Bark. Buyers of— .. .. .	1
15. Bags. Dealers in — .. .. .	1
16. Baling machines. Dealers in — .. .. .	1
17. Bangles and Mangalore tiles. Information re Manufacture of — .. .. .	1
18. Barks. Exporters of— .. .. .	1
19. Benzol. Manufacturers of— .. .. .	1
20. Biscuits. Manufacture of— .. .. .	1
21. Bleaching and Dyeing. Information re — .. .. .	1
22. Bobbins. Manufacturers of— .. .. .	2
23. Boiled oil. Manufacturers of— .. .. .	1
24. Bone Mills. Names of— .. .. .	1
25. Boots. Estimates for factory. .. .. .	1
26. Bristles. Dealers in — .. .. .	2
27. Cane. Dealers in — .. .. .	1
28. Carpets. Manufacturers of— .. .. .	1
29. Casein. Importers of— .. .. .	1
30. Casein Industry. Prospects for — .. .. .	1
31. Casings and Guts. Dealers in — .. .. .	1
32. Castor-seed and Lin-seed. Sources of— .. .. .	1
33. Catalogue of—Indian goods. .. .. .	1
34. Catechu. Dealers in — .. .. .	1
35. Cement, glass, oils, paints, etc. Manufacture of— .. .. .	1
36. China clay. Imports of— .. .. .	1
37. China clay. Dealers in — .. .. .	1
38. China clay. Sources of— .. .. .	3
39. Chemists, Industrial. Names of— .. .. .	1
40. Chemical firms. Names of — .. .. .	1
41. Chemists and Druggists. Names of— .. .. .	1
42. Chemicals. Suppliers of— .. .. .	2
43. Chemical Analysers. Names of— .. .. .	1

Subject of enquiry.	Number of enquiries.
44. Cigars. Manufacturers of — .. ..	1
45. Cochineal. Information re Manufacture of — .. ..	1
46. Cociojem. Suppliers of — .. ..	1
47. Coal. Prices of — .. ..	1
48. Colour. Dealers in — .. ..	1
49. Cotton prints. Manufacturers of — .. ..	1
50. Cotton goods (grey and bleached). Dealers in — .. ..	1
51. Cotton piecegoods. Dealers in — .. ..	1
52. Cotton "AK". Buyers of — .. ..	1
53. Cardboard boxes. Suppliers of — .. ..	1
54. Curios and Arts. Dealers in — .. ..	1
54a. Cotton Waste. Exporters of — .. ..	1
55. Cutting Institutes. Names of — .. ..	1
56. Crude Sodium. Manufacturers of — .. ..	1
57. Crucibles (Japanese). Importers of — .. ..	1
58. Distemper. Manufacturers of — .. ..	1
59. Distemper, Colour and Wax. Literature on — .. ..	1
60. Divi Divi. Exporters of — .. ..	1
61. Dress makers (Ladies). Names of — .. ..	1
62. Drugs—Ayurvedic. Dealers in — .. ..	1
63. Drums (Empty). Dealers in — Manufacturers of — .. ..	1
64. Dyes. Dealers in — .. ..	3
65. Dye peoric. Manufacturers of — .. ..	1
66. Ebony wood. Consumers of — .. ..	1
67. Electric Casings. Imports of — .. ..	1
68. Electric furniture. Dealers in — .. ..	1
69. Electric power. Users of — .. ..	1
70. Engineering Colleges. Names of — .. ..	1
71. Exhibitions. Promoters of — and addresses. .. ..	1
72. Factories and Mills. Names of — .. ..	2
73. Feathers and Horns. Buyers and Exporters of — .. ..	1
74. Fertilisers. Imports and Exports of — .. ..	1
75. Fibre. Exports of — .. ..	1
76. Fibre. Machinery for extracting, bleaching, etc. — .. ..	1
77. Fibre (palmyra). Exporters of — .. ..	1
78. Fruits. Foreign dealers in — .. ..	1
79. Fruit preservation. Information re — .. ..	2
80. Fuel-Liquid. Prices of — .. ..	1
81. Gall nuts. Dealers in — .. ..	1
82. Garnets—Rough. Dealers in — .. ..	1
83. Garnets—sand fine. Dealers in — .. ..	1
84. Glass. Manufacturers of — .. ..	1
85. Glass Factories. Names of — .. ..	1
86. Glassware. Imports of — .. ..	1
87. Glue. Suppliers of — .. ..	2
88. Glue. Manufacturers of — .. ..	1

Subject of enquiry.	Number of enquiries
89. Glue. Possibilities of Manufacture of— .. .. .	1
90. Glycerine Dynamatic. Manufacturers of— .. .. .	1
91. Glycerine plants. Information re Sellers of— .. .. .	1
92. Glycerine refined. Manufacturers of— .. .. .	1
93. Gold. Conditions re sale of— .. .. .	1
94. Gold and Silver. Information re registration of—Assayers of— .. .. .	1
95. Gold thread, Colour powder and Lace. Dealers in— .. .. .	1
96. Goolkand. Process of Manufacture of— .. .. .	1
97. Ginns. Dealers in— .. .. .	2
98. Gramophone, Cutlery (German make). Dealers in— .. .. .	1
99. Gypsum. Manufacturers of— .. .. .	1
100. Handloom factories. Names of— .. .. .	1
101. Horn articles. Dealers in or Manufacturers of— .. .. .	1
102. Hosiery. Enquiry re import duty on— .. .. .	1
103. Hubbucke's. Address of the factory of— .. .. .	1
104. Ice Machinery. Dealers in— .. .. .	1
105. Iron and steel. Imports of— .. .. .	1
106. Lac. Cultivation of— Information re— .. .. .	2
107. Lametta. Dealers in— .. .. .	2
108. Leather—Buffalo. Dealers in— .. .. .	2
109. Lime juice. Enquiry re Machinery for— .. .. .	1
110. Locks. Buyers of— .. .. .	3
111. Machinery. Confectionery—Manufacturers of— .. .. .	1
112. Machinery. Envelope making—Manufacturers of— .. .. .	1
113. Machines. Grinding—Dealers in— .. .. .	2
114. Machinery. General—Dealers in— .. .. .	1
115. Machinery. Jewellers—Manufacturers of— .. .. .	3
116. Machinery. Jute Mill—Manufacturers of— .. .. .	1
117. Machinery. Oil Mill—Manufactures of— .. .. .	1
118. Machinery. Rope and Mattress—Manufacturers of— .. .. .	1
119. Machinery. Soap Manufacture—Dealers in— .. .. .	1
120. Machinery. Trimmings—Manufacturers of— .. .. .	1
121. Machinery. Umbrellas—Manufacturers of— .. .. .	1
122. Magnesium Sulphate. Dealers in— .. .. .	1
123. Match boxes. Imports of— .. .. .	1
124. Match Manufacture. Institutes giving training in— .. .. .	2
125. Mechanical Engineering. Institutes giving training in— .. .. .	1
126. Mica. Source of— Dealers in— .. .. .	1
127. Mines—Copper. Names of— .. .. .	1
128. Minerals. Literature on— .. .. .	1
129. Minerals. Foreign buyers of— .. .. .	1
130. Molasses. Imports of— Uses of— .. .. .	1
131. Mouldings—Picture frame. Imports of— .. .. .	1
132. Motors and Dynamos. Manufacturers of— .. .. .	1
133. Nickle sheets. Dealers in— .. .. .	1
134. Nuts—Ivory. Buyers of— .. .. .	1

Subject of enquiry.	Number of enquiries.
135. Nux Vomica. Exporters of — .. .. .	1
136. Oil. Exporters of — .. .. .	1
137. Oil. Information re Analysis of — .. .. .	2
138. One bath chrome. Demand for — .. .. .	1
139. Oil. Information re percentage of — in certain seeds. .. .. .	1
140. Oil. Castor—Suppliers and Manufacturers of — .. .. .	1
141. Oil cake. Exporters of — .. .. .	1
142. Oil. Cotton seed—Dealers in — Manufacturers of — .. .. .	2
143. Oil. Fish—Dealers in — .. .. .	1
144. Oil. Linseed—Manufacturers of — .. .. .	1
145. Oil Mills and Soap factories. Names of — .. .. .	2
146. Oil seeds and other products. Literature on — .. .. .	1
147. Packing materials. Dealers in — .. .. .	1
148. Paper corrugated. Manufacturers of — .. .. .	1
149. Paper crackers. Enquiry re license for — .. .. .	1
150. Paper Mills. Names of — .. .. .	3
151. Paper Industry. Information re — .. .. .	1
152. Paraffin Wax. Sources of — .. .. .	1
153. Patents. Information re — .. .. .	1
154. Pearls—Ceylon. Particulars re — .. .. .	1
155. Piecegoods. Indian Demand for — in Bagdad. — .. .. .	1
156. Picture post cards. Dealers in — .. .. .	1
157. Potteries. Names of — .. .. .	1
158. Prints. Indian—Manufacturers of — .. .. .	1
159. Rags and Waste. Exporters of — .. .. .	1
160. Registration of firms. Enquiry re — .. .. .	1
161. Rings clay. Manufacturers of — .. .. .	1
162. Rosha grass. Buyers of — .. .. .	1
163. Sheep guts. Buyers of — .. .. .	1
164. Silk. Artificial—Manufacturers of — .. .. .	1
165. Silk. Piecegoods—Dealers in — .. .. .	1
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