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Report of the Department  
of Industries Madras.

1930.



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REPORT OF THE  
DEPARTMENT OF INDUSTRIES  
MADRAS

FOR THE  
YEAR ENDING 31st MARCH 1930



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## ADMINISTRATION REPORT OF THE DEPARTMENT OF INDUSTRIES FOR THE YEAR ENDING 31st MARCH 1930.

### PERSONNEL.

*Direction.*—Khan Bahadur Muhammad Bazl-ul-lah Sahib Bahadur, C.I.E., O.B.E., was in charge of the department until 26th July 1929 when I relieved him and continued as Director of Industries for the remainder of the year. Mr. L. B. Green, M.B.E., continued as Deputy Director throughout the year.

2. *Director's tours.*—Khan Bahadur M. Bazl-ul-lah Sahib was on tour for 18 days and visited Bangalore, Coimbatore, Tudyalur, Pallapalayam, Peelamedu, Ootacamund and Chinnabelgondanapalle. He also visited Chennapatna (Mysore State) for the purpose of inspecting the Government Silk Farm and the working of the aided grainages. I was on tour for 90 days and visited most of the industrial centres in the Presidency including Chittoor, Tindivanam, Mortandichavadi, Varakalpatti, Panruti, Tirukkoyilur, Tanjore, Trichinopoly, Madura, Calicut, Coimbatore, Coonoor, Ootacamund, Salem, Gudur, Nellore, Ekkadu, Conjeeveram, Vellore, Ambur, Melvisharam, Bellary, Markapur, Bezwada and Ellore.

3. *Exhibitions.*—In pursuance of the general policy adopted by the department that exhibitions at district headquarters or other suitable places should be encouraged and assisted as far as possible, the department participated during the year in a number of agricultural and industrial exhibitions held in various parts of the Presidency, e.g., at Tiruppur, Srirangam, Chittur (Cochin State), Cuddapah, Vaniyambadi, Tenali, Attur, Mysore and Madras. A representative range of soaps manufactured at the Kerala Soap Institute, Calicut, was displayed at these exhibitions and wherever feasible, the working of pumping and boring machinery and of improved textile appliances was demonstrated for the benefit of agriculturists and handloom weavers. A very successful departmental display was arranged in connexion with the annual Park Fair held in December 1929 and the exhibits attracted considerable attention and resulted in a considerable number of inquiries from the public. The engineering exhibits on this occasion comprised a power drill, hand-boring set, a high speed pumping set, battery of four Pinto chekkus model of an artesian basin, sugarcane mill, wing rotor, etc., while the exhibits from the Madras Trades School included an automatic traffic controller and a two stroke motor cycle engine made in the workshop of the school. The department participated in the National Health

and Baby Week celebrations held under the auspices of the Madras Corporation by demonstrating a high speed test engine and issuing pamphlets explaining the activities of the Engineering branch, the object of the exhibit on this occasion being to demonstrate that by pumping out the stagnant water in pools, the breeding of mosquitoes and other insects might be prevented. At the Mysore Exhibition a representative range of soaps from the Kerala Soap Institute was displayed and a gold medal was awarded for the exhibit.

Although it had been the practice for several years past to participate in the various exhibitions, the Accountant-General stated that the specific sanction of Government was required to meet the expenditure incurred in connexion therewith. Government was therefore addressed and general sanction was accorded by them to the participation by the department in exhibitions held in the Presidency and to the incurring of expenditure in connexion therewith within the sanctioned budget allotment.

4. The British Industries Fair held at London and the Leipzig International Industries Fair held at Leipzig were brought to the notice of firms in this Presidency and their attention invited to the advantages of participating in them. The response, however, was disappointing notwithstanding the fact that the Indian Trade Publicity Officer had undertaken to meet all expenditure in connexion with displays at these exhibitions, including, in the case of the Leipzig Fair, the charges on the transport of exhibits from London to Leipzig and back. It is understood that the Madras Pencil Factory arranged for the display at these Fairs of two show cases containing different varieties of their products and Messrs. Jonah and Joseph of Narsapur two sets of their lace manufactures. The Chrome Leather Company at Chromepet, Pallavaram, arranged for participation through their London Agent.

#### 5. Committees—

*Agricultural Advisory Committee.*—A number of meetings of this Committee were held during the year all of which were attended by the Director.

*Railway Local Advisory Committees.*—The Director of Industries continued to represent Government on the Local Advisory Committees of the South Indian and Madras and Southern Mahratta Railway Companies.

*Hides Cess Enquiry Committee.*—The Director of Industries was co-opted a Member of the Sub-Committee of the Hides Cess Enquiry Committee which visited Madras and I attended its sittings in Madras.

*The Cottage Industries Committee.*—This Committee was constituted by Government in August 1929 and had five sittings during the year. A reference to this Committee is made in paragraph 23 infra.

*Forests Panchayats Committee.*—I was appointed a member of the Forests Panchayats Committee which was constituted to consider the draft standing orders dealing with forest panchayats, and attended the Committee's meetings.

*Provincial Cotton Committee.*—The Director of Industries continued to be a Member of the Provincial Cotton Committee.

*Textile Advisory Committee.*—A reference to the work of this Committee which was appointed in G.O. No. 1684, Development, dated 5th October 1929, will be found elsewhere in this report. The Director of Industries is an ex-officio member of the Committee and I attended the meeting held during the year under review.

6. *Statutory Board of Industries.*—The composition of the Board of Industries was, at the close of the year 1928-29, as noted below:—

- |                                                                                                   |                                                           |
|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| (1) Director of Industries— <i>Chairman</i>                                                       | } Ex-officio.                                             |
| (2) Secretary to Government, Finance Department                                                   |                                                           |
| (3) W. O. Wright, O.B.E., elected by the Madras Chamber of Commerce.                              |                                                           |
| (4) M.R.Ry. Narayan Doss Girdhar Doss Avargal, elected by the Southern India Chamber of Commerce. | } Elected by the Madras Legislative Council.              |
| (5) F. G. Luker, Esq., elected by the Madras Trades Association.                                  |                                                           |
| (6) J. A. Saldanha, Esq., B.A., LL.B., M.L.C.,                                                    |                                                           |
| (7) M.R.Ry. Diwan Bahadur P. C. Ethirajulu Nayudu Garu, M.L.C.,                                   |                                                           |
| (8) M.R.Ry. Diwan Bahadur G. Narayanaswami Chetti Garu, C.I.E.,                                   | } Nominated by Government under section 3 (2) of the Act. |
| (9) Dr. R. Nagan Gowda, M.L.C.,                                                                   |                                                           |
| (10) M.R.Ry. Rao Bahadur M. K. Venkatachariar Avargal,                                            |                                                           |
| (11) M. Muhammad Ismail Sahib Bahadur,                                                            |                                                           |
| (12) The Registrar of Co-operative Societies,                                                     |                                                           |

M.R.Ry. Rao Bahadur M. K. Venkatachariar completed the full period of three years prescribed in rule 5 of the rules and was reappointed as a member of the Board. In the vacancy caused by the resignation of Mr. W. O. Wright, owing to his departure from India, the Madras Chamber of Commerce elected Mr. G. H. Hodgson as a member of the Board.

Mr. L. B. Green, M.B.E., Deputy Director of Industries, continued to be Secretary to the Board.

7. The application of Messrs. Abbas Magnesite Company, referred to in paragraphs 8 and 9 of last year's report was still under the consideration of Government at the close of the year. The loan of Rs. 500 sanctioned to the Ram Ram Safety Match Works, Tholampalayam, could not be disbursed before the close of the year owing to the observance of various formalities connected with

insurance and registration. These formalities militate against prompt disbursement of loans after their sanction by Government and the question of simplifying the procedure is at present under consideration. The representation of the Tindivanam Co-operative Agricultural and Industrial Society requesting Government to take shares in the Society was finally disposed of, Government expressing their inability on legal grounds to take shares.

8. During the year under review, two meetings of the Board of Industries were held, one on the 23rd July 1929 and the other on the 14th February 1930, at which, besides the application from Mr. H. Lubeck, Bar.-at-Law, for a loan of Rupees two lakhs for the development of his aloe fibre estate and factory, the following applications were considered:—

(1) Application from Mr. J. P. Parry, Proprietor, the Avalanche Estate, Ootacamund, for a loan of Rs. 2,10,000 for the purpose of developing the wattle industry on the Nilgiris.

(2) Application from Messrs. K. Lakshmana Nayak and K. Ganapathi Nayak, Partners, Sri Lakshmi Mills, Kasaragod, for a loan of Rs. 40,000 for the purpose of clearing the liabilities of the concern and developing its saw milling and oil milling activities.

(3) Application from Messrs. M. N. Nair & Son, Calicut, for a loan of Rs. 35,000 for the purpose of clearing the liabilities of and providing working capital for his concern.

(4) Application from Mr. P. Govinda Pillai, Managing Director, The Kumbakonam Industrial Company, Limited, for Government subscription to the extent of Rs. 30,000 for the purpose of purchasing additional machinery.

(5) Application from Mr. K. S. Sankaram Pillai, General Merchant and Tobacco Specialist, Guntur, for a loan of Rs. 10,000 for the purpose of establishing a tobacco redrying factory.

(6) Application from the Co-operative Agricultural and Industrial Society, Limited, Kallakurichi, for a loan of Rs. 3,912 and a subsidy of Rs. 2,500 for the purchase of an oil expeller with roller mill.

(7) Application from the East India Match Company, Rajahmundry, for certain forest concessions for the supply of timber suitable for the manufacture of matches at favourable rates from the surrounding forests.

(8) Application from Mr. B. Abraham, Proprietor, Tanjore Tile Works, for a loan of Rs. 7,500 for the purpose of developing his tile factory.

9. Of the above, the application of Mr. H. Lubeck was rejected unanimously by the Board and Government declined to sanction the loan. Similarly the Board rejected unanimously the application of Mr. J. P. Parry on the ground that the wattle growing project, although of considerable economic importance, could not be considered

to be an industry within the meaning of the Act. The Board also rejected the applications of Mr. P. Govinda Pillai and Messrs. M. N. Nair & Sons, the latter on the ground that the conditions of section 5 (1) of the Act were not satisfied by the concern. The application of Sri Lakshmi Mills, Kasaragod (No. 2), though recommended by a majority of the Board, was rejected by Government on the ground that it was not a suitable case for the grant of aid under the Act. The applications of M.R.Ry. K. S. Sankaram Pillai and Messrs. The East India Match Company were recommended by the Board and were sanctioned by Government. Government were pleased to grant the East India Match Company, a lease of forest land not exceeding 30,000 acres in the Upper and Lower Godavari and Rampa Agency for a period of ten years for the extraction of soft wood required for match manufacture. The lease amount to be paid by the Company has been fixed at the concessional rate of Rs. 3,125 per annum for the first five years and at Rs. 6,250 per annum for the subsequent period of the lease. The applications of the Kallakurichi Co-operative Agricultural and Industrial Society and the Tanjore Tile Works were adjourned for further consideration pending receipt of further information called for by the Board. In point of fact, the latter application was placed before the Board only with a view to ascertaining if they would regard the application as satisfying the provisions of section 5 (1) of the Act.

10. The affairs of the concerns which have received aid under the Act are briefly reviewed below:—

(i) The Carnatic Paper Mills having been handed over to the Andhra Paper Mills, Limited, and the loans and advances paid to them having been cleared partly by the latter and partly written off, this is the last reference to the affairs of the former company that will appear in these reports. The total amount written off was Rs. 3,86,428.

(ii) I was hoping to hear of an improvement in the method of maintenance of accounts by the Sri Lakshmi Silk Factory, Peddapuram, in respect of the year 1928. The auditor, however, has brought to notice that the improvement effected in 1927 has not been even maintained. He has also pointed out that the closing stock lists or inventories were not produced but were reported not traceable. In the absence of these documents it has not been possible for the auditor to prepare the profit and loss accounts and balance sheet, and the statements received from him are therefore incomplete. I have arranged to have the closing stock as on 31st December 1929 taken under the supervision of the Weaving Superintendent, Rajahmundry, so that the auditor may be able to audit the accounts and draw the balance sheet and other statements for the years 1928 and 1929.

The value of the assets of the business excluding closing stock amounted to Rs. 3,19,376-11-8 and after deducting a sum of Rs. 1,91,154-2-2 representing liabilities, the net value of surplus assets as on 31st December 1928 excluding closing stock stood at Rs. 1,75,404-2-2. The firm was, as usual, prompt in repaying the instalments of the loan.

(iii) The Kallakurichi Co-operative Agricultural and Industrial Society earned during the year ended 30th June 1929 a net profit of Rs. 861-13-0. The value of the assets amounted to Rs. 1,05,152-2-0 and after deducting a sum of Rs. 1,03,740-7-0 representing liabilities, the net value of surplus assets on the 30th June 1929 was Rs. 1,411-11-0. The Society repaid by the due date the instalment of loan and also renewed the insurance policies.

(iv) Owing to the failure of the Canara Rice and Saw Mills, Limited, Coondapoor, to pay the second and third instalments of the unspent balance of loan and the fourth instalment of the loan, the Collector of South Kanara was asked to collect the entire sum due from them as provided for in section 18 (1) of the Act. Before the confirmation of the sale which took place on 29th November 1929, the managing agents of the mills paid almost the entire outstandings and the balance has since been collected.

(v) The request of M.R.Ry. D. Rangaswami Nayudu, proprietor, the Andal Mills, Gudiyattam, for the further postponement by one year of the repayment of the second instalment of the loan due from him was not granted by Government and the Collector was asked to take steps to collect the dues. The second instalment has since been paid but the penal interest thereon and the third instalment which fell due subsequently remain yet to be collected. As there has been no development of cotton cultivation in the area there is no work for the gins and the proprietor has approached the department to find a sale for them. Inquiries have been instituted to this end.

(vi) Consequent on the occurrence of fire in the Bellary Match Factory referred to in last year's report, a dispute has arisen between Muthyala Seenappa Ramanna, the proprietor and the Insurance Company as to the amount of damage caused by the fire and the matter was referred by the High Court for arbitration. The arbitrators not being able to agree as to the extent of the damage, the matter was referred to an umpire. The umpire awarded a sum of Rs. 7,673-10-6 as compensation. Not content with this award, the proprietor moved the High Court and got the award set aside. Ramanna has also filed a suit in the High Court for recovering the full damage claimed by him from the Insurance Company. Since the matter is being indefinitely postponed, it has been resolved to take steps for the sale of the concern in order to realize the loan amount of Rs. 20,000.

(vii) The audit report on the accounts of the Pyrotechnic Match Factory of the Zamindars of Belgam for the year ended 31st December 1929 is not yet to hand. The Zamindars paid the first instalment on the due date. The insurance of match factories is not now generally undertaken by insurance firms and it was only with great difficulty that a firm was induced to insure the factory for a sum of Rs. 7,000. The concern was progressing fairly satisfactorily until a few months ago when, at the instance of the Inspector of Factories, Rajahmundry, the Chief Inspector included the concern under the Factories Act. This places it under certain disabilities which militate against its successful working and the matter has been brought to the notice of Government. Their orders are awaited.

(viii) The management of the Salem Dye Works Syndicate have not yet selected an auditor for auditing the accounts of the Syndicate. The factory has not worked for the last 2½ years on the plea of hardness of water resulting in uneven dyeing. The question of assisting the Syndicate to overcome this difficulty is under consideration. The first instalment of loan was paid on the due date. It is unfortunate that such a well equipped factory should be lying idle.

11. Extensive attempts were made during the year to promulgate the facilities afforded by the State Aid to Industries Act by publishing a small leaflet in the newspapers both English and Vernacular and by getting copies distributed through the revenue officials and departmental agency. The response to this publication has been very encouraging to judge from the large and increased number of applications received recently for state aid.

12. During the year under review, a Bill to amend section 9 of the Act was introduced in the Legislative Council and was passed in an amended form by the Council. The Bill has since received the assent of the Governor and the Governor-General. The section, in its amended form, empowers the grant of loan to a concern up to a limit of Rs. 40,000 even if it exceeds 50 per cent of the value of its net assets.

#### GENERAL ASSISTANCE TO TRADE AND INDUSTRY.

13. This work is carried on in the Bureau of Industrial and Commercial Information, the purpose of which is to provide general and statistical information on industrial and commercial subjects and to answer inquiries relating to the commerce, trade and industries of the Madras Presidency. The organization and work of the Bureau have been so fully discussed in previous administration reports that it is unnecessary to refer to them in any detail here. The inquiries have increased to a marked extent during recent years

and the consideration and answering of them now forms an important part of the activities of the department. The volume of inquiries dealt with during the year under review was well maintained and evidence of the Bureau's usefulness is forthcoming not only in the steady increase in the number of persons who resort to it for advice and assistance but also by the number of letters of thanks received for services rendered and information supplied. A considerable number of visitors call at the office to make verbal inquiries and altogether the Bureau has to deal daily with a large number of inquiries for information covering a wide range of industrial and commercial subjects and more particularly in regard to sources of supply and markets for various articles and commodities.

14. *Commercial and Industrial Intelligence.*—The Director-General of Commercial Intelligence and Statistics, Calcutta, was, as usual, furnished with a number of reports as to the financial standing, business reputation and experience of export trade of firms and individuals who had expressed a desire for overseas trade introductions. In cases where such applications are received direct by this department, the communications are, in accordance with the established procedure, transferred for final disposal to the Director-General of Commercial Intelligence and Statistics with a report on the standing and experience of the firm. The number of references received from Indian firms, merchants and traders requesting to be placed in touch with overseas firms interested in Indian produce and manufacture is not inconsiderable but in not all cases do they prove on inquiry, to be of sufficient financial standing entitling them to an overseas trade introduction through the agency of the Director-General of Commercial Intelligence. Information was exchanged with His Majesty's Trade Commissioner at Calcutta, with the United States Trade Commissioner and with various foreign Consuls at Bombay, Calcutta and Madras with whom close and cordial relations continue to be maintained. In connexion with the application of certain firms and individuals in the Madras Presidency for inclusion in the list of approved contractors for the supply of articles and stores of various kinds required by the Government of India, and other Governments or authorities who utilize the services of the Indian Stores Department in connexion with their purchases, the Chief Controller of Stores was furnished with reports, generally based on an inspection of the firms' works, as to their capacity, financial standing, quality of the articles manufactured and their suitability generally for inclusion in the list of approved contractors. The Deputy Director continued to furnish the Director-General of Commercial Intelligence and Statistics with a short weekly review of trade and market conditions in respect of the main classes of produce.

15. It is not possible to explain or illustrate in a few paragraphs the range and variety of work carried on by the Bureau, or to summarize briefly the scope of the inquiries received during the year, but the following forty examples of measures taken to assist firms or individuals will, it is hoped, serve to illustrate the many and varied ways in which the Bureau is of practical use in supplying information and advice on industrial and commercial subjects:

(i) A Government department in this Presidency was furnished with an analysis of water drawn from the Tambaraparani at Papanasam with a view to considering its suitability for paper manufacture.

(ii) Information as to the method of manufacturing Thymol from Ajowan seed was communicated to an inquirer in Masulipatam.

(iii) A Government department in Bombay was furnished with a list of dealers in graphite in this Presidency and in Ceylon.

(iv) An enquirer at Calicut was provided with a list of exporters of Mowra seeds in Bombay and also information as to the season and probable quantity available annually.

(v) An enquirer in Guntur was furnished with a list of tobacco and cigarette factories in this Presidency and in the Bombay Presidency.

(vi) The American Trade Commissioner in Calcutta was furnished with detailed information with regard to the Madras market for tanned kips.

(vii) An enquirer in Tindivanam was provided with the names and addresses of suppliers of castor, til, cotton and other oilseeds in His Exalted Highness the Nizam's Dominions.

(viii) An enquirer on the West Coast was furnished with a list of ivory workers in Vizagapatam engaged in tortoise shell work.

(ix) A firm in Mori was supplied with the name of a firm in California interested in the import of cashewnut kernels.

(x) His Majesty's Trade Commissioner in Calcutta was furnished with the addresses of important tanneries in the Madras Presidency together with information as to the processes of tanning and chemicals adopted in them.

(xi) An enquirer in Vizagapatam was furnished with the names of tin box manufacturers in India.

(xii) An enquirer in Malabar was given a list of sugar factories in the Presidency.

(xiii) A firm in Madras was provided with information in regard to the supply of pure mineral naphtha.

(xiv) Information in regard to the extraction of lemon grass oil was communicated to an enquirer in Tindivanam.

(xv) A cigar manufacturing factory in Guntur was supplied with the names of the principal manufacturers of cigarette making machines in the United Kingdom.

(xvi) An enquirer in Taliparamba was supplied with the names and addresses of wholesale dealers in blackgram in Godavari and Tinnevely and gingelly seeds in Kistna, Salem and Tinnevely.

(xvii) Information as to the cost of starting a small jute spinning factory on the basis of an annual production of four hundred tons of yarn together with information as to the suppliers of the necessary machinery was communicated to a Government department in the Mysore State.

(xviii) A firm in Guntur was provided with a note on fruit preservation.

(xix) An enquirer in Pernambut was furnished with the names of suppliers of modern confectionery machinery and of sugar machinery.

(xx) A short statement in respect of the mica trade was communicated to the American Consul in Madras.

(xxi) An enquirer in Kotipalle was furnished with the names and addresses of direct importers in the Presidency of yellow and white silk from Shanghai, China.

(xxii) A prominent firm in Madras was furnished with a detailed account of the process of refining coconut oil for technical purposes as worked out in the Technological Institute, Cawnpore.

(xxiii) The names of the principal exporters of coconut oil to Calcutta were communicated to a Government department in Bengal.

(xxiv) A Government department in Bombay was supplied with the names and addresses of breweries in the Presidency.

(xxv) The German Consul in Colombo was furnished with the names of factories manufacturing umbrellas in the Presidency.

(xxvi) An important oil mill in Vizianagram was provided with information and advice in regard to certain aspects of the extraction of oil in its mill.

(xxvii) The American Consul in Madras was furnished with information in respect of the principal dealers in the Punjab of isaphgoul together with its ruling price.

(xxviii) The American Consul in Madras was supplied with a statement showing the quantity and value of pepper imported into and exported from the Madras Presidency during 1928-29.

(xxix) Information in regard to suitable oil expeller for the extraction of groundnut oil was communicated to an enquirer in Muddanur.

(xxx) A firm in Tindivanam was supplied with information as to the uses of barytes and the places in which it is available.

(xxxii) A firm in Narasapur was furnished with a list of lace manufacturers in this Presidency as well as in other Provinces in India.

(xxxiii) Information in regard to the purification of crude camphor was communicated to a firm in Coonoor.

(xxxiv) A Government department in the Punjab was furnished with the name of a camphor manufacturer in the Presidency.

(xxxv) An important firm in Bombay was provided with information in regard to the varieties and prices of gingelly grown in the Presidency and the harvesting period.

(xxxvi) A firm in Amritsar was furnished with a list of small slate factories in the Presidency.

(xxxvii) A cinema firm in Rajahmundry was provided with the names of manufacturers of talking apparatus in the United Kingdom and the names of manufacturers of sound films in New York.

(xxxviii) The French Trade Commissioner in Calcutta was furnished with the names of suppliers of cattle horn, tannery fleshings, etc., in the Presidency.

(xxxix) The Director-General of Commercial Intelligence and Statistics, Calcutta was supplied with a list of manufacturers of micanite in Nellore.

(xl) A Zamindar in Madras was provided with a list of manufacturers of the common type of groundnut decorticators in use in the Presidency together with data in respect of their performance.

(xli) The French Trade Commissioner in India at Calcutta was supplied with a list of manufacturers of harmoniums in Madras.

16. *Library.*—The library attached to the central office contains a large number of books on subjects relating to commerce, technology and manufacture, besides a considerable number of monographs, bulletins, transactions of societies and miscellaneous scientific and technical publications, directories, trade and market reports, catalogues, statistical publications and the publications of other Government departments. The library, although primarily intended as a reference library for the use of departmental officers, is open during office hours to the public and is freely resorted to, the number of visitors during the year under review having been over three times as great as in the previous year. The library contains 3,170 volumes, 130 books dealing with such industries and questions as are now engaging the attention of the department having been added during

the year. About 40 journals and periodicals on scientific technical and commercial subjects are also received in the department and placed on the table in the library for consultation and reference by the general public.

17. *Statistics*.—The department continued to compile statistics relating to industries including statements of cotton, jute, paper and woollen mills, planting products, mines and minerals, as also an annual review of the working of the Indian Mines Act. The usual summaries on the subjects of manufactures, mines and quarries were also prepared for inclusion in the Administration Report of the Presidency. During the year under review the compilation of the consolidated fortnightly statement of wholesale prices of certain basic commodities was abolished by the Government of India and in its stead a fortnightly return of wholesale prices of certain products at Madras was substituted to enable the Director of Contracts, Army Headquarters to exercise control over rates paid to the agents for military purchases. The Director-General of Commercial Intelligence and Statistics continued to be supplied with a quarterly statement of the retail price of Indian made matches at Madras. During the year, arrangements were made for the annual returns relating to large industrial establishments, cotton mills, paper mills, tea, coffee and rubber production and the annual return of exports of coffee, so far as they relate to the Madras States, which were hitherto prepared by the Director of Industries, to be obtained by the Director-General of Commercial Intelligence and Statistics direct from the Agent to the Governor-General, Madras States. The adoption of the revised procedure should result in a saving of delay in the submission of the returns relating to the Madras Presidency as much time was lost in waiting for the returns from the Madras States and in reconciling discrepancies found in them. The accuracy of the statistics compiled by the department was well maintained during the year.

18. *Coir Industry on the East Coast*.—The experiments referred to in the report of last year in respect of this industry were commenced during the year at Thopputurai in the Tanjore district. During the course of the experiment questions relating to the nature of water essential for successful retting, the relative quality and yield of fibre from husks when retted in brackish and in ordinary fresh water respectively, and the possibility of shortening the time required for retting by the employment of husk crushing machines were studied by the Leather Research Chemist under practical working conditions. People in the villages nearby where facilities exist for soaking were induced to soak husks with the assistance of the department. The use of the spinning wheel was also demonstrated to those who at present spin with the hand. The coir maistri employed there and

his wife have rendered very useful work in the neighbourhood of Thopputurai with the result that several families, principally women, have taken to the spinning of ropes of marketable variety.

Assistance was also rendered to those who are already engaged in the coir industry in other districts, e.g., Chittoor. The chief centres in Chittoor district where husks are soaked were visited by the Leather Research Chemist and improved methods of soaking and spinning the fibre were demonstrated to the villagers.

There is considerable scope for the development of this industry in the Presidency. There are localities where large quantities of coconut husk are available, but the ryots are ignorant of the proper method of retting coir and producing useful ropes. In several cases coconut husk is being used as fuel to the detriment of a valuable industry. This is mostly the case in the Ceded districts. It is therefore proposed that after the completion of the coir retting experiments carried on at Topputurai, the coir maistri now employed there should be deputed to other centres to start coir industry.

19. *Lace and embroidery industry*.—Reference was made in the last year's administration report to certain proposals in regard to the appointment of an agent in London for promoting the sale abroad of the products of Madras cottage industries and as a corollary to the establishment of a central warehouse at Madras to supply the agent with samples, collect and inspect goods and execute his orders. The need for the establishment of a central emporium at Madras was stressed by the Special Officer for the survey of cottage industries. The Registrar of Co-operative Societies submitted to Government during the year a proposal for opening a central weavers' depot at Madras, while certain suggestions were put forward by the Indian Trade Commissioner as to the best methods of developing the London market for Indian artware. At the instance of Government, these proposals were considered by the department and a report submitted to Government in which it was pointed out *inter alia* that the handloom industry was of sufficient importance to justify such an organization as a central weavers' depot in Madras for its sole benefit, that as industrial products other than textiles and cottage industries required separate treatment, a separate organization was necessary for marketing finished goods pertaining to these industries and that there was therefore room and real need for both the schemes. The proposals relating to the central weavers' depot were considered by the Textile Advisory Committee recently and were referred back to the Registrar of Co-operative Societies for further information. As regards the central depot for the sale of industrial products other than textiles, Government desired, before passing orders on the proposals, to have more detailed information in respect of the

Bihar and Orissa agency now held by Mr. Ryland in England. This information has been called for from the Director of Industries of that Province.

20. *Deputation of an officer of the Co-operative Department to work under the Director of Industries.*—It has recently become evident that several of the cottage industries in the Presidency could develop on proper lines if the workers could be induced to work on a co-operative basis. The Special Officer for the Survey of Cottage Industries has laid stress on the importance of the formation of co-operative societies among the cottage workers, and the enquiries made by me in the course of my tours have confirmed this view. Instead of asking the Co-operative Department to start societies wherever the department thought the formation of such societies desirable and expedient, it would be preferable if an experienced Assistant Registrar or Deputy Registrar could be deputed to work in this department. The Cottage Industries Committee has also supported this proposal. This will be included in Part II Scheme for the year 1931-32 due to Government shortly.

21. *Research Engineer.*—With a view to evolve improved appliances requisite for the encouragement of indigenous industries, particularly those relating to textiles, Government have been pleased to sanction the post of a Research Engineer for a period of two years. M.R.Ry. Rao Sahib Ramachandra Ayyar, B.E., Assistant Industrial Engineer, has entered upon this work. I feel sure that his efforts in the direction of assisting the local industries will bear ample fruit in due course.

22. *Museum of industrial products.*—There is a small museum of cottage industrial products in the Head office where articles of indigenous manufacture are collected and exhibited. Government have authorized me to purchase samples worth collecting, not exceeding Rs. 25 in value in each case and Rs. 500 in a year. A catalogue of the samples with particulars of origin and cost will be prepared and maintained by the Librarian for ready reference by the members of the public, interested in indigenous industries.

23. *Cottage industries.*—The salient feature of the year's work is the decisive step taken towards the development of cottage industries. It was stated in the Administration Report of the past year that the Special Officer deputed for the survey of cottage industries in the Presidency completed his work and that his reports on individual districts, and the consolidated report for the whole Presidency, had been duly published for general information. In pursuance of a resolution moved by M.R.Ry. G. Harisarvothama Rao Garu at

the meeting of the Legislative Council held on 8th August 1929, Government constituted a Committee consisting of—

- (1) The Director of Industries, Chairman.
  - (2) M.R.Ry. L. K. Tulsiram Avargal, M.L.C., Madura.
  - (3) " R. Nagan Gowda Avargal, M.L.C., Hospet.
  - (4) " T. N. Kalidoss Ayyar Avargal, B.A., B.L., President, Cottage Industries Association, Tanjore.
  - (5) C. E. Wood, Esq., M.L.C.
  - (6) The Rev. Victor Theill, Danish Mission, Panruti,
- to examine the Special Officer's Reports and to submit proposals for an effective organization of such of those industries as deserve encouragement.

24. The Committee entered on its duties in October 1929, had five sittings at which the several questions connected with the development or resuscitation of particular cottage industries were fully threshed out, and the Committee formulated definite proposals in March last, in regard to fifteen industries in respect of which immediate action is called for, and indicated the exact lines of work in each case. The report has since been published, and steps are now being taken towards giving effect to the Committee's recommendations.

25. During the year under report, the department rendered valuable service to cottage industries in the several centres of the Presidency. The following instances give an idea of the action taken in this direction:—

(i) *Toy industry—Kistna.*—The well-known Kondapalli toys made in the neighbourhood of Bezwada still continue to hold their own, thanks to the endeavours of the Victoria Technical Institute, Madras, which has been placing orders with the makers, for regular consignments of these toys, trays, jewel boxes and the like. The industry has received a check, however, due to unhealthy competition among the workers and the consequent cutting down of prices. The light wood necessary for the purpose is available in the zamindari forests and what is required to sustain the industry is even distribution of orders among the workers. There are six prominent *Kharkhanas* engaged in this industry and at my instance the Victoria Technical Institute has very kindly consented to distribute the orders among these workers. This has given the desired relief. A co-operative society for the workers is most needed to keep down competition. One was formed and given up as unworkable. Attempts will be made to resuscitate it.

*South Arcot.*—The toy-makers of Panruti are excellent imitators of nature. Their clay and paper models of fruits, animals, birds and the like are unrivalled. The images made by them sell as rapidly

as they are completed. They belong to a community known as *pathars*. In order that their workmanship might be more scientific and faultless with regard to size and proportion, I have arranged for the admission of an educated *pathar* lad into the School of Arts and Crafts where he would learn clay modelling on scientific lines. He is given a small stipend. This seems to me the best means of systematizing the industry.

**Madura.**—At Iravadanallur, a suburb of Madura, toys representing household articles, cooking utensils, small containers, balls and mallets, rulers and the like are made of a light wood known as *Veppalai*. For some time past the toy-makers were experiencing some difficulty in securing the wood at reasonable rates owing to the intervention of contractors. Arrangements have now been made by the District Forest Officer, Madura, whereby the toy-makers can take wood directly from the coupes at a cost of about Rs. 16 per ton as opposed to Rs. 30 they had to pay hitherto for the same quantity. This has afforded real relief to the toy-makers.

**Tinnevely.**—Vadakangulam at the southern end of Tinnevely is the home of a famous sculptor who has learnt his art from an Italian priest. He works on *mavalingai* wood, and produces fine specimens of gospel personages. He keeps the secret of the art to himself. Arrangements have been made to subject his work to the scrutiny of the Principal, School of Arts and Crafts, a sculptor of no mean order, so that the industry may be stabilised and improved.

(ii) **Mat Industry—Nellore.**—The mat-makers of Nellore, as in the case of toy-makers of Madura, had to be released from the interference of the contractor-middlemen. The latter take the *tunga* (*korai*) in river and channel banks, and the water-spread of tanks, on lease from the Public Works Department or the Revenue Department, as the case may be, and sub-lease the produce to the mat-workers, at rates several times in excess of the lease amount. At my instance, the Executive Engineer, Nellore, has kindly agreed to lease *tunga* blocks to the mat-makers at an average rental based on previous lease amounts. The Collector of Nellore has also undertaken to permit *bona fide* mat-makers in the deltaic parts of the Nellore district to remove mat grass free of charge. The matter is now under the consideration of Government.

Government have also ordered that the Yerukulas of Vinukonda taluk, engaged in the date mat industry, should be permitted to remove date leaves from reserved forests, free of cost subject to such conditions as may be prescribed by the Forest Department.

(iii) **Slate industry—Kurnool.**—Slate manufacture is a thriving industry in Markapur. In the hills opposite the railway station, at a few feet below the ground, nature has provided fine

slabs of slates. They have merely to be pulled out, split and fashioned into school slates of convenient sizes. The wood required for frames is available from the forests at Chelama not far from Markapur. The slate dealers get ready-made frames also from the Kallai timber works, Malabar. In order to facilitate the conveyance of wooden frames the South Indian Railway Company and the Madras and Southern Mahratta Railway Company have agreed to grant concessional freight rates. The Madras and Southern Mahratta Railway Company has also agreed to charge freight on the wood obtained by the slate dealers from the Chelama forest, with reference to actual weight instead of per wagon as had been the practice hitherto irrespective of whether the wagon was fully loaded or not. The slate dealers were long trying for this concession and now that it has been secured, I feel no doubt that it will go a considerable way in stabilizing the industry.

As in the case of toy makers of Bezwada there is very keen competition among the slate dealers leading inevitably to the ruin of the industry. They now place on the market a packet of 48 slates for a paltry price of Rs. 2-8-0 to Rs. 3 as against Rs. 12 for a similar packet of foreign slates. The dealers have now reached the irreducible margin of profit and the lowering of prices has had the natural consequence of deterioration in work. The wages of the slate grinder and the carpenter have been so cut down that they scamp through their work and this has affected the quality and finish of the slates turned out. If this untoward result has to be arrested, a Co-operative Society or Union has to be formed among the slate dealers. The Co-operative Department cannot step in since co-operative societies are intended for the benefit of slate makers and not for that of slate dealers who are only middlemen and feed upon the toil of slate diggers and grinders. A deadlock has thus been reached. The slate dealers have been advised to form a joint stock company, and this would have been done but for some dissensions among the vaisya merchants engaged in this industry. It is hoped that they will settle their differences and form a company: there seems no other alternative for the future welfare of the slate industry.

(iv) **Chank industry.**—Owing to the conduct of chank fishery in the Gulf of Mannar and its neighbourhood, enormous quantities of chanks of different sizes are available. These are mostly exported to Dacca and other places in Northern Provinces for the manufacture of chank bangles and rings. In Kilakkarai and Periapattanam there is a thriving industry in the manufacture of chank bangles, rings, feeding cups, blowing conches, chank beads and the like. Bangles are made to order for sale in Northern India since people here no longer fancy chank bangles. The chief difficulty experienced by

chank workers lies in cutting the chanks. They do it now with chisel and hammer resulting in considerable damage and loss. After an inspection of the industry with me, the Superintendent, Madura Industrial Institute, now Research Engineer, has designed a lathe for cutting the chank by means of a circular saw. This is being demonstrated now at Periapattanam and finds favour with the chank workers.

*Button manufacture.*—There seems considerable scope for the manufacture of buttons with mother of pearl available in large quantities along the sea coast. Arrangements have been made for the purchase of a simple machine from Dacca.

(v) *Palmyra industry.*—This industry which thrives so well in Tinnevely and Travancore is not found in Cuddapah. Palmyra baskets, mats and the extraction of palmyra fibre used for brushes and the like is unknown. With a view to introduce this industry in Cuddapah attempts were made to get workers from Travancore and Tinnevely district but without success in spite of very favourable terms offered to them. Even the workers in Northern Circars have not responded to the call. I have not given up my attempts in this direction.

Samples of palmyra baskets prepared at Pulicat were obtained and sent to the Indian Trade Publicity Officer, London, with a view to ascertaining the marketability of the baskets. Small baskets seem eminently suited as containers for chocolates, sweets and the like, and the larger ones as knitting boxes, market bags, etc. In Tirupulani palmyra basket industry is a specialty. In every family, women make these boxes during their leisure hours and they find a ready sale in Rameswaram, Madura, Tirupati and other religious centres. A fine variety of boxes for keeping the sacred ash or tiruman (namakatti) is made, and is extensively used by orthodox Hindus.

In the Aided Industrial Schools at Erode and Tinnevely, the school girls make a fine set of palmyra boxes. If an opening can be found for this industry in England, it will form a lucrative subsidiary industry.

(vi) *Millinery.*—To find a market for the embroidery and cross stitch work practised in various aided schools in the Presidency, the department obtained from Mr. Ryland to whom reference has been made in the earlier portion of this report a sample of race jacket worn by ladies in England. Duplicates made in waste silk cloth by the nuns of the Nungambakum Aided School were forwarded to Mr. Ryland who has approved of them and has promised to secure orders. In case these orders come in, it is proposed to circulate the sample to the aided school at Palmaner and the Madras Seva Sadan where adult women turn out fine embroidery, cross stitch and jigina work.

(vii) *Cane industry.*—In the course of my tour in the South Arcot district, I came across a growth of cane near Nellikuppam, used by the people in the neighbourhood for making baskets, sieves, winnows and similar articles. Samples of the cane were taken and sent to the Superintendent, Danish Mission Industrial School, Panruti, and the Superintendent, American Arcot Mission Industrial Works, Katpadi, for test if the cane could be used for chairs manufactured by them. The Superintendents have reported that the cane could not be used for firm stripping work. Attempts are, however, being made to obtain a supply of seed of the Singapore variety now used for the purpose and to introduce it, if possible, in the locality in question. The Revenue Divisional Officer, Cuddalore, has evinced considerable interest in the matter and is waiting for the Singapore seed. The Director of Agriculture has addressed the Director of Botanical Gardens, Singapore, for the seed and its receipt is awaited.

(viii) *Bangle industry.*—There is not much hope for this industry since the indigenous rough bangles can no longer stand competition with fine foreign varieties, charming and at the same time cheap. Some sections of Hindus prefer black beads and bangles of the old variety during marriage occasions and pongal festivals. To meet this limited demand the manufacture of black beads and black bangles is still being carried on in scattered centres on a limited scale.

With a view to help some bangle manufacturers in the Bellary district, quotations for block glass were obtained from a firm in Ferozabad and communicated to them.

On behalf of the bangle makers in a village in Penukonda taluk the Collector of Anantapur, at my instance, moved the Board of Revenue for the grant of two fuel coupes of 50 acres each in Guttur East Reserve at concessional rates, and his proposals have been approved by the Board.

(ix) *Match industry.*—A struggle is being kept up between indigenous matches produced on cottage industry lines, and the foreign variety. The latter is considered superior for the reason that sticks take fire on the first strike, and are easily put out, while the indigenous matches require repeated striking, the sticks are brittle and often break while lighting. The difference is due to the kind of wood used. Aspen wood is used for foreign matches and the splints and veneers are white and clear cut, whereas those made of bombax malabaricum (Elavan panju) used by indigenous makers are grey, brittle and less pliable. It is also becoming increasingly difficult to procure adequate supplies of this wood from Malabar forests. However, since local matches are sold slightly cheaper than the imported variety—Re. 1-4-0 a gross on an average as opposed to Re. 1-8-0 a gross for foreign variety—cottage workers are enabled to continue the industry. There are 23 indigenous match factories in the Presidency

run on cottage lines. The Swedish Match Company has opened a factory in Madras—the Western India Match Company—and manufactures matches with imported aspen wood. There is an import duty of 15 per cent *ad valorem* on the raw material. The local makers are deterred from importing this wood as it is subject to a further duty of Rs. 5 per ton levied by the Madras Corporation. The Western India Match Company is not however liable to this duty since it is outside the Corporation limits. At the instance of some of the local manufacturers I have moved the Madras Corporation for a waiver of this additional duty so that the indigenous workers may be freed from the handicap. They can then hold on until the Swedish Match Company reduces its price to the level of the local matches.

(x) *Carpet industry*.—Pile carpets are a specialty in Ellore, but the industry has sustained a check in recent times due to the use of inferior wool known as tannery wool or chunam wool, as opposed to cut wool, and inferior fugitive dyes. The industry is at present in the hands of a few carpet dealers who pay the actual weavers on piece-work system, the weavers supplying the dyed wool and yarn. Inferior wool is largely resorted to since carpets made of such wool are cheaper and sell faster. If a co-operative society can be formed for the actual weavers and the supply of good wool is assured, it might perhaps be possible to rehabilitate the industry to some extent. An attempt will be made in this direction if an Assistant Registrar of Co-operative Societies is attached to this department as has already been proposed by me, and supported by the Cottage Industries Committee.

One of the carpet merchants who has extensive dealings with foreign markets through the agency of Madras firms, suggested that if a dye house was started at Ellore and fast dyes were ensured, the industry would be greatly assisted. The point will be examined in detail and definite proposals formulated in this behalf when the Superintendent of Cottage Industries proposed by the Cottage Industries Committee is appointed.

Curiously enough, spinning of woollen yarn is done at Ellore with the old method of twisting on the thigh, while at Bellary, which is a large cumblu manufacturing centre, spinning of woollen yarn is done with the help of a spinning wheel and lathe. Having observed this I purchased a Bellary spinning wheel and had it demonstrated at Ellore by the Superintendent of the Peripatetic Weaving Party. This would accelerate spinning and save time and even if the carpet industry were abandoned, the manufacture of blankets and jamkhanas could be set-a-foot at Ellore.

(xi) *Lime burning*.—This industry is being carried on extensively in Trichendur and Tuticorin taluks by members of the depressed classes and is subject to a licence fee of Rs. 6 per annum, per kiln, levied by the Taluk Board, Tuticorin. They use both lime

tone and sea shells. Having regard to the proverbial poverty of the kiln owners, the local boards were approached for a remission of the licence fee. Though the district board was inclined to remit the fee, the taluk board, however, declined either to waive or reduce the fee. This department could afford no relief though honest efforts were made in that direction.

(xii) *Coir industry*.—This industry has already been dealt with in paragraph 18 above.

(xiii) *Soap stone vessels*.—In Saidapuram village, about nine miles from Gudur, there are good soap stone deposits. Oddars of the locality quarry soap stone and make vessels and pots, much prized by the caste Hindus on account of their usefulness as cooking and boiling pans. A co-operative society has also been started for the benefit of the workmen. Unfortunately, however, the society could not achieve much owing to underselling on the part of a shrotriyamdar who started quarrying in the same locality, but without legal rights. The matter having been brought to the notice of the Collector, steps were duly taken by him to put the unauthorized competitor out of action.

(xiv) *Brass, silver and horn insects*.—This industry is practised by a few families of goldsmiths (*Asáris*) at Madura. The insects made are fine and the workmanship elegant. They find an easy sale on the station platform. The Victoria Technical Institute is also one of the generous purchasers who has helped to keep the industry alive. The *Asáris* ask for small financial aids to help them to continue the industry. A small co-operative society can perhaps afford them relief. This is a matter eminently for the Co-operative Deputy Registrar whose services have been applied for by this department.

When the proposals for the appointment of a Cottage Industries establishment with a Cottage Industries Superintendent materialize, there will be greater activity in the direction of stimulating cottage industries and more interesting results will be recorded in the annual report.

(xv) *Bee-keeping industry*.—It is under contemplation to introduce the industry of bee-keeping on modern lines. A few persons have come forward to start the industry after some preliminary training at the Y.M.C.A. reconstruction centre, Coimbatore. A note on the subject drawn up by the Superintendent, reconstruction centre, is appended to this report.

26. Experiments are now in progress in the following directions:—

(i) *Extraction of lemon-grass oil*.—Large areas under lemon-grass are found in Tinnevely district and in order to utilize the grass which is otherwise wasted, an experiment is being conducted

by the department to extract oil from the grass. The particular species of grass obtained from Tinnevely district did not yield oil of a very high citral content, but as it is understood that there are several species of grass on the West Coast of which only a few yield marketable lemon-grass oil, experiments are being continued so as to determine the right species that will yield oil of a high citral content. Extraction of oil from screw-pine flowers is also in progress in the Industrial Institute.

(ii) The bell metal factories of Kalahasti are using crucibles imported from outside. Since this materially adds to the cost of manufacture, experiments were started, at the instance of the bell metal workers, to make crucibles which will stand the furnace just as well as the foreign variety. The Superintendent, Industrial Institute, has achieved tangible result and it will be published after the experiments are complete.

(iii) Experiments are being conducted by the Leather Research Chemist in the manufacture of hand-made paper with a view to reduce the cost of production while improving the quality. As a result of these experiments it has been found possible to reduce the period of soaking the waste paper, and it has been shown that cheaper kinds of starch could be used in the place of rice with equal effect. Blue and brown sheets of paper, card boards, docket sheets and flat file cases were made and submitted to Government with a report. The financial aspect of the manufacture of these articles is under examination and the results will be published as soon as they are ready. The industry which appears to have been thriving some time ago has gone down considerably, but if improved methods are adopted, there may perhaps be a revival of the industry. Steps will be taken in due course with a view to secure, for the benefit of the indigenous paper manufacturers, waste papers from Government offices in respect of which contractors at present enjoy a monopoly.

(iv) At the instance of M.R.Ry. V. Krishna Menon of Malabar arrangements are being made to conduct experiments in the manufacture of starch from tapioca available in Malabar in large quantities. The industry presents special problems: since tapioca is harvested during the rainy season the ryots find it difficult to dry the stuff and convert it into starch. Some cheap means of drying the tapioca during wet weather and speedily converting it into starch have to be found. The experiment will be directed towards this end.

#### GENERAL CONDITION OF THE IMPORTANT INDUSTRIES IN THE PRESIDENCY.

27. In accordance with G.O. No. 918, Development, dated 23rd June 1927, the condition of the important industries in the Presidency during the year is reviewed below and my thanks are due to the several Chambers of Commerce and private firms for their co-operation in furnishing information.

28. *New industrial undertakings.*—The year witnessed an abnormal increase in new registrations, 105 companies having been registered as against 70 in the previous year. Forty companies ceased to exist as against 42 in the previous year. Of the new registrations, nearly 35 per cent were trading and industrial concerns, and 32 per cent banking and loan companies, the remainder consisting mostly of insurance and transport companies. Among the new registrations may be mentioned the Vasanta Mills, Limited, Coimbatore, with an authorized capital of Rs. 20,00,000, Coimbatore Cotton Mills, Limited, Coimbatore, with an authorized capital of Rs. 16,00,000 and Indian Mills, Limited, Coimbatore, with an authorized capital of Rs. 10,00,000, the objects of these companies being ginning, spinning and weaving of cotton. Five film companies were registered during the year with the object of manufacturing and exhibiting films.

29. *Mining operations.*—The following prospecting licences and mining leases were granted during the calendar year 1929:—

|                                                                 |                                         |                         | ACS.       |
|-----------------------------------------------------------------|-----------------------------------------|-------------------------|------------|
| Twenty-five                                                     | P.Ls. for prospecting for Barytes       | over an area of         | 360.22     |
| Thirteen                                                        | P.Ls. for prospecting for Mica          | do.                     | 338.55     |
| Six                                                             | P.Ls. for prospecting for Asbestos      | do.                     | 5,041.40   |
| Four                                                            | P.Ls. for prospecting for Manganese ore | do.                     | 2,061.08   |
| Three                                                           | P.Ls. for prospecting for Pyrites       | do. 2 square miles, and | 1,484.00   |
| One prospecting licence for prospecting for diamonds and copper |                                         |                         |            |
|                                                                 |                                         | over an area of         | 8.65       |
| Nine mining leases for working mica over an area of             |                                         |                         |            |
|                                                                 |                                         |                         | 104.48     |
| One mining lease for working Phosphatic nodules and             |                                         |                         |            |
|                                                                 |                                         | gypsum                  | do. 430.22 |
| One mining lease for working China clay                         |                                         |                         |            |
|                                                                 |                                         | do.                     | 14.54      |

Mining was carried on in the districts of Bellary, Vizagapatam, Salem, Nellore, the Nilgiris, Kurnool, Cuddapah and Trichinopoly and the minerals raised were manganese, magnesite, mica, barytes, corundum, asbestos, phosphatic nodules and gypsum.

30. *Manganese.*—The mining of manganese continued to be carried on in the districts of Vizagapatam and Bellary and the total quantity mined was 35,068½ tons against 34,351½ tons mined in the previous year and 37,983 tons in the year 1927. There was a decrease during the year in the output of manganese in the Vizagapatam district and the total value at the mines of the mineral raised was Rs. 1,91,695 against Rs. 2,11,431 in the previous year. In the Bellary district the output of manganese was double that of the previous year, although the number of mines worked during the period was only four as against five in the previous year.

31. *Magnesite*.—The output of magnesite in the Salem district decreased from 22,542 tons to 22,134 tons and the value of the mineral raised from Rs. 1,41,742 in the previous year to Rs. 1,08,722 during the period under review. The increase in the United States import duty on calcined magnesite in 1927 has resulted in a very heavy reduction in the tonnage exported to that country, while the profit on the reduced shipments has also declined. A larger percentage of the production now appears to be going to Europe, whilst the demand in India for magnesite in the form of flooring tiles has shown slight expansion.

32. *Mica*.—There was a slight increase in the output of mica in the Nellore district, the year's output being 555 $\frac{3}{4}$  tons as against 521 $\frac{1}{2}$  tons in the year previous. The industry showed some slight signs of improvement during the year under review, but the market continued to be dull and several persons who applied for concessions expecting an improvement in commercial conditions withdrew their applications owing to the continued dulness of the market, while a few others relinquished their leases. There was a decrease in the output of mica in the Nilgiris district where a mine was at work during the year. Competition in the mica market is very keen, but over a period of years there should be a good future for the mica mining industry as the mineral, on account of its superiority as an insulating material, has come to be indispensable in the electrical industry.

33. *Barytes*.—The output of Barytes mined in the Kurnool district rose from 620 tons in the year 1928 to 762 tons in the year under review, whilst 43 tons was also mined in the Cuddapah district.

34. *Phosphatic nodules and Gypsum*.—A mining lease for a period of five years was granted during the year to a mining engineer for phosphatic nodules and gypsum over an area of 430.22 acres in Therani village in Perambalur taluk of Trichinopoly district and the total quantity raised during the year was 22 $\frac{1}{2}$  tons of each kind.

35. *Textile Industries—Cotton mills*.—There are at present 19 mills working in the Madras Presidency, three each in Madras and Madura, two each in Calicut, Coimbatore, Peelamedu and Pandalapa and a single mill each in Pappaniseri, Ambasamudram, Koilpatti, Tuticorin and Cannanore. Six hundred and ninety-seven thousand five hundred and sixty-four spindles were at work in these mills, during the year, of which 5,040 were in course of erection in Sri Radhakrishna Mills, Limited, Peelamedu. The number of looms at work was 5,039. The fall in the number of mills during the year by two as compared with that of the previous year is due to the amalgamation of the Mall Mills Company, Limited, with the

Coimbatore Spinning and Weaving Company, Limited, and to the closure of the Malabar Weaving Company, which is understood to have gone into bankruptcy.

The construction of the Mahalakshmi Spinning Mills in Madura referred to in the last year's administration report is almost finished and it is expected to start work shortly. Cotton spinning in common with most other industries suffered severely during the year from general depression due to the rapid fall in prices and all-round lack of confidence, but the general tone of the yarn market had improved by the end of the period under review.

The quantity of cotton passing through ginning and pressing factories during the year showed an improvement of 12 per cent as compared with the previous year owing to the increase in the size of the cotton crop in the Presidency as a result of favourable weather. Practically the whole of the crop was marketed before the slump in prices occurred which was a feature of most basic commodities during the year and has since been reflected in the world prices of cotton.

36. *Jute mills*.—There are four jute mills in the Presidency and these are situated in Nellimarla, Chittivalasa, Ellore and Guntur. The number of looms installed in these increased from 889 in the previous year to 941, while the number of spindles decreased slightly from 20,600 to 20,176 during the period under review.

37. *Hosiery mills*.—There are 20 fairly large factories in the Presidency and the Madras Hosiery Works that was not working last year has been merged with the Sri Lakshmi Hosiery Works. Two hosiery factories are now at work in the city of Madras (the Sri Lakshmi Hosiery Works and the Azeem Hosiery Works) while two more concerns (the Radhakrishna Hosiery Works and the Excelsior Indian Knitting Works) have been started at Trichinopoly and three factories in Karur have installed additional net power-driven banian machines. Rib top machines have been installed by the Premier Hosiery Works, Calicut, and rib top and French net machines by the Malabar Hosiery Works, Calicut. As a result of Japanese competition, the markets are still restricted to the finer class of goods with the exception of net work for which a satisfactory demand appears to continue. In addition to the effects of heavy Japanese competition, the indiscriminate introduction of Barfuss looms in small hosiery factories in the Malabar district has resulted in a heavy accumulation of stock in such factories causing very unhealthy competition and consequent loss to the whole trade. Production in Malabar appears to be far in excess of the buying capacity of the markets the industry in that district is able to command.

38. *Madras handkerchief industry*.—The section of the handloom industry of the Presidency devoted to Madras handkerchiefs was well employed during the year, the demand having been active and shipments in excess of the last few years. Although employment has been steady, the weavers have, owing to growing competition, to be content in many instances with lower wages, and in order to maintain their income they frequently resort to measures which has a prejudicial effect on the development of this trade such as reducing the quality by the use of inferior yarns and dyes or reducing the lengths of the pieces. The deterioration in the quality is undoubtedly the result of competition although some demand has sprung up for a lower grade of cloth. The real difficulty is that owing to the steadily decreasing kaili trade with the Straits, there are now double the number of looms engaged on the production of Madras handkerchiefs and many of the weavers operating them are inexperienced. In fact, to-day there are far more looms engaged in the weaving of Madras handkerchiefs than in previous years and the total export and value have increased as shown below :—

|         |    |    |    | Number.   | RS.       |
|---------|----|----|----|-----------|-----------|
| 1928-29 | .. | .. | .. | 3,008,780 | 28,24,664 |
| 1929-30 | .. | .. | .. | 4,785,914 | 43,52,417 |

39. *Tanning industry—General*.—The tanning industry throughout the Presidency suffered in common with other industries from the present commercial depression and this was particularly the case during the last six months of the year under review. Tanned hides and skins exported from the Madras Presidency decreased from 20,949 tons valued at Rs. 807.70 lakhs to 18,595 tons valued at Rs. 689.44 lakhs. The heavy fall in the receipts of tanned hides and skins by the chief consuming countries may be attributed to the phenomenal financial stringency in the London and New York money markets, and the protracted suspense in which the Tariff Bill of the United States of America held the American as well as the London importers. Values as will be seen from the following paragraphs declined in sympathy with the falling off in demand. The outlook for the industry is not bright as the enhanced tariff in the United States of America on all classes of leather including rough tanned leather such as E.I. Kip, sheep and goat must inevitably affect the industry in the Presidency adversely. America has been taking large quantities of leather from Madras and if this market is closed, shipments will probably be far in excess of the demand in England and consequently prices may perhaps fall.

40. *Tanned cow hides*.—Exports decreased by 1,619 tons and by Rs. 72.88 lakhs in value. The market was fairly steady from April to June and during the next three months there was an appreciation

in values due largely to American buying in anticipation of the Tariff Bill, prices increasing from 10 per cent to 15 per cent during this period. With a falling off in the demand for leather, however, the supply of hides came to be in excess of the demand and prices dropped steadily. From the middle of October a rapid decline in prices set in and prices at the end of the year were fully 20 per cent below opening prices while since the end of the year there has been a further fall of 10 to 15 per cent.

41. *Tanned buff hides*.—The fluctuations in this market were naturally less than in the case of cow hides, but generally speaking, the price of buffs is always governed by the prices ruling for cow.

42. *Tanned cow calf*.—These were fairly steady in price during the year except for the last month or so when a rapid decline set in and prices have since fallen to a lower level than at any time during the past ten years.

43. *Tanned buff calf*.—Until the end of September these were high in price but they declined subsequently owing to the lack of buying from America and went back to the prices ruling in 1926. Apparently the demand for embossed leathers made from these skins has fallen to a considerable extent.

44. *Tanned goat skins*.—There has been a slow but steady fall in prices throughout the year under review but skins have not been so badly affected as hides. The lower qualities and rejects however have suffered more severely than good middle tannages. The prices of average goat skins are approximately 10 to 12 per cent lower than they were at the beginning of the year.

45. *Tanned sheep skins*.—These have been less affected than goat skins and fell only between 5 to 10 per cent during the year. The commoner qualities and rejects in contrast to goat skins were in better demand and have been firm in price.

46. *Wattle bark*.—Receipts of wattle bark from Natal for tanning purposes declined by 24,192 cwt. to 258,135 cwt. in quantity and by Rs. 6.60 lakhs to Rs. 18.75 lakhs in value. The fall is attributable to the depression in the tanning industry in Madras produced by a falling off in the demand from foreign countries for tanned hides and skins. The removal of the import duty on wattle bark at the close of the year will be of some assistance to hide tanners in the difficult time they are passing through since it should have the effect of reducing their tanning costs by about 3 pies per pound.

47. During the year under review the Government of India appointed a Hides Cess Enquiry Committee to investigate the question of imposing a cess on hides and skins, the proceeds to be

applied for the purpose of improving the tanning industry. A sub-committee visited Madras and examined a number of witnesses. The Director of Industries who was co-opted a member of this committee attended the meetings of the committee in Madras.

48. *Oil-milling industry.*—The industry does not appear to have undergone any material improvement during the year under review, the prices of coconut copra and coconut-oil having been very low during the year under review. In spite of low prices the demand was not satisfactory and many mills on the West Coast could not be worked to full capacity. There was practically no export of copra to European ports although there was some demand from Calcutta and Karachi. There does not appear to be any prospect of the price of coconut-oil rising in the near future. Groundnut crushers on the East Coast experienced a poor year, the selling price of groundnut-oil seldom, if ever, covering the cost of production with the inevitable result that mills worked only spasmodically and in some cases had to close down altogether. There was no demand for export by sea and the usual demand from the north of India and Bengal fell owing to the relatively low prices of other edible vegetable oils such as rape and mustard.

In view of the severe competition which Indian oil-seeds are meeting from the increasing number of sources of oil of a similar character, e.g., palm-oil and soya bean-oil, it is probable that the decline in the price of the oil-seeds produced in this Presidency can in the long run be arrested only by the setting up of factories using vegetable oils as a raw material such as soap factories or factories for the manufacture of vegetable fats or ghee substitutes. As will be seen elsewhere in this report, Government have recently sanctioned the conduct at the Kerala Soap Institute, Calicut, of experimental work on the refining and deodorization of oils and fats, and the hydrogenation of oils and fats, and it is hoped that these experiments will result in some development in the desired direction.

49. *Sugar and jaggery industries.*—From the beginning of the year under review sugar prices gradually declined reaching a very low level in February 1930. On the 1st March 1930 the import duty on sugar was increased by Rs. 1-8-0 per cwt. and the rates of locally refined sugar responded to some extent. Java export prices, however, declined still further, due to world over-production and prices in India again fell relatively. As a result sugar was available in April 1930 at lower prices than those ruling at the same time in the previous year in spite of the enhanced duty. The jaggery industry showed an improvement as compared with the previous year since owing to more favourable conditions larger crops were recorded.

50. *Tile industry.*—The general condition of the tile industry in Malabar during the year under review appears to have been good. The demand in South India has been good and also the overseas markets such as Rangoon and Colombo have taken large quantities of tiles. It is understood that several small factories have been started in the Coimbatore district. Rail freight on tiles from the West Coast to the East Coast lines has been enhanced rendering business difficult. Given favourable rates, the manufacturers would prefer to send by rail as shipment of tiles results in heavy breakage.

Government have sanctioned the creation of a post of Ceramic Assistant with a view to carry out a preliminary survey of the several known deposits of raw materials in the Presidency in order to determine their extent and the facilities available for their exploitation. The officer appointed will investigate inter alia the present position and potentialities of the West Coast tile industry and the problems, if any, with which the factories are confronted.

51. *Chemical industries.*—The demand for chemicals manufactured in this Presidency was steady and encouraging, considering the dull tone of the industrial market during the year. The value of imports of the various articles comprised under the head "Chemical—Chemical preparations" declined slightly from Rs. 33.76 lakhs to Rs. 32.84 lakhs.

52. *Manure industry.*—Imports of manures (mostly artificial and mineral manures) consisting mainly of muriate of potash, nitrate of soda and sulphate of ammonia increased from Rs. 34.16 lakhs to Rs. 46.02 lakhs in value. The increase may be attributed to the greater interest shown by the ryot in the use of artificial manures. Notwithstanding the definite depression in most planting activities the manure works on the West Coast worked under normal conditions. The consumption of fertilizers in the West Coast other than natural manures, is confined largely to the tea, coffee and rubber estates although the coconut garden owner and the paddy cultivator have recently begun to show interest in and to appreciate the value of manuring. Shoals of sardine continue to be absent from the West Coast waters and the fish guano and manure industry were idle.

53. *Match industry.*—The value of imports from foreign countries declined still further from Rs. 2.54 lakhs to 0.50 lakh indicating an expansion in the output of the local manufacturers, the most important of which is the Swedish Manufacturing Company established at Madras—The Wimco Match Factory. This company manufactures matches with imported raw materials in the shape of

aspen wood for splints and veneers, and chemicals for the match head. The competition of indigenous manufacturers operating with local wood remains unequal.

54. *Saw mills.*—The timber industry of the West Coast experienced a disappointing year. Owing to the increased cost of extraction in many areas the cost of timber in the Kallai market also increased, but the buyers were not prepared to consider higher prices when purchasing timber with the result that business during the year was done at a very low margin of profit and in many cases at an actual loss.

The sleeper cutting business of the West Coast has also decreased to a very considerable extent owing to the railways having curtailed their sleeper requirements.

55. *Pencil industry.*—The Madras Pencil Factory received good support from the public during the year as well as from the Central Government who placed large indents with the factory for their "Star of India" pencils. The concern continued, however, to suffer from severe foreign competition and still has to rely on imported wood in the absence of suitable indigenous species.

56. *Coir industry.*—The coir industry more or less maintained its position during the year. Prices ruled high from July to December when a decline set in with little business passing due to trade depression abroad. The production of coir was affected by a serious shortage of husks during part of the year. The general trend of business in mats appears to be towards commoner qualities at cheap prices whilst in matting the reverse is the case, the demand being for the highest qualities in a range of attractive designs.

57. *Soap industry.*—The activities of private soap factories in the Presidency underwent expansion during the year. There are about 86 factories in the Presidency, the Malabar and Tanjore districts accounting for as many as 17 each and Madras for 14. The total output of these factories may be estimated roughly at from 200 to 250 tons. In the Tanjore district soap-making has assumed as much importance as in Malabar, but the soaps made are of inferior quality. In the Andhra districts soap-making has not spread as rapidly as in the Southern districts. The private factories at present make only washing soaps and no toilet soap has yet been put on the market by any of them, the factory in Calicut which erected a toilet plant some time ago not having commenced the manufacture of toilet soaps. Some of the students who completed their course of training at the Kerala Soap Institute, Calicut, started factories where soap of a satisfactory quality is being made.

58. *Aluminium hollow ware industry.*—Aluminium is not manufactured in this country, but Indian labour is largely employed on the manufacture of hollow ware utensils which has replaced brass and copper vessels to a very large extent. The price of the imported metal now stands at a lower figure than ever in the history of the trade. This has been due to very keen competition by manufacturers who are anxious to secure a good share of the Indian market. The demand for aluminium ware has increased enormously but owing to keen competition prices are below an economic level and most manufactures are reported to be barely able to pay expenses. The industry is not likely to show any improvement so long as the present policy of price cutting is persisted in.

59. *Cigar manufacture.*—There seems to have been a slight increase in the output of cigars during the year as compared with the previous year, the demand for the high priced brands of mild quality especially registering an improvement. There seems no doubt that the demand for such mild smoking cigars is on the increase as compared with strong flavoured Indian blended cigars irrespective of the growth of the cigarette habit. New brands have been introduced to compete with the Dutch and Manilla cigars imported into this country with which they compare more favourably in quality and price.

60. *Rubber industry.*—The position of the rubber industry during the year under review was one of continuous depression. Owing to overproduction and accumulation of stocks in London the price during the year was little more than the cost of production and as a result the rubber companies have had an unsatisfactory year. Exports of raw rubber decreased from 14.14 million lb. valued at Rs. 138.84 lakhs to 13.33 million lb. valued at Rs. 124.38 lakhs. Since the close of the year the price of the commodity has fallen to a lower figure than has hitherto been recorded and with possibly one exception none of the South Indian estates can operate profitably at the price ruling at the present moment.

61. *Tea industry.*—Tea passed through a period of depression during the year under review. Prices have fallen particularly those for medium and low grown teas and in order to bring about an improvement a majority of producers have agreed to a scheme whereby the output for the calendar year 1930 will be restricted by varying percentages on the actual crop obtained during the previous year. The percentage of restriction will be graduated according to the average price obtained for the three years 1926—28 so that the medium and low grown teas which have been hardest hit by the reduced prices, will restrict to a greater extent the demand for the high grown teas.

62. *Coffee industry.*—There has been a heavy fall in the price of coffee due to the inability of Brazil, which produces the bulk of the world's coffee, to maintain its valorization scheme in the face of economic causes. Market prices have fallen about 30 per cent since September and it is only too apparent that the conditions of coffee planting generally will have to be adjusted to meet this change of values. Prices will no doubt recover to some extent in time but the immediate future for coffee planting is the reverse of bright.

63. *Groundnuts.*—The value of foreign exports of groundnuts during the year amounted to Rs. 1,355.38 lakhs as compared with Rs. 1,432.65 lakhs in the previous year. It will thus be seen that shipments of groundnuts, which formed 94 per cent of the trade in seeds, declined in value by Rs. 77.27 lakhs. The total area under groundnuts is reported to have been reduced by about 12 per cent partly owing to late and short south-west monsoon rains and partly owing to the decline in Continental prices which occurred about the time of sowing. Consequent on the less favourable weather conditions the crop yielded about 19 per cent less than in the previous year. The prices obtainable for groundnuts in foreign markets declined during the year to a lower level than any reached since the war. This decline may be attributed to the following causes:—(a) The general trade depression and decline in commodity values, and in particular the world wide agricultural depression resulting in a falling off in the demand for cattle-feeding stuffs which has affected to a marked extent the price of and the demand for oil seed cake and compounds made therefrom; (b) the competition which groundnut is meeting with from the increasing sources of oil of a similar type and (c) the formation and development of the powerful European buying combine. The first factor may be regarded as more or less of a temporary character as the agricultural and general trade depression will doubtless pass in time, but the increasing competition which groundnut is meeting with from other oils the production of which is going up by leaps and bounds, and the presence in the market of a powerful buying combine seem likely to have the effect of keeping down the price of groundnuts. If the price remains for any length of time at its present level or decline further, there is every probability of the area under groundnut undergoing a sharp contraction, giving place to cereals which groundnut so completely replaced.

#### MANAGEMENT OF MANUFACTURING CONCERNS OWNED BY GOVERNMENT.

64. *Kerala Soap Institute, Calicut—Staff.*—M.R.Ry. A. K. Menon was in charge of the Institute as Superintendent throughout the year except for a period of one month from the 8th of May 1929 when he was on leave and M.R.Ry. P. S. Srinivasa Ayyar, First Assistant, acted as Superintendent in his absence.

65. *Production and accounts.*—Trade conditions during the year were most difficult and unsatisfactory throughout the country and it is not surprising in the circumstances that the results of the Institute's trading as a commercial concern compared unfavourably with those of the previous year. The year opened with a stock of 203 tons 19 cwt. 40 lbs. of soap, and 218 tons 8 cwt. and 7 lbs. of all classes of soap valued at Rs. 1,11,825-5-8 were manufactured during the year as against 405 tons 15 cwt. 82 lbs. valued at Rs. 1,87,067-1-4 in the previous year. The sales decreased in value from Rs. 2,89,873 in the previous year to Rs. 1,72,070-8-10 during the year under review. The result of the year's working was a loss of Rs. 21,352-9-11, after debiting to profit and loss account a sum of Rs. 19,648-3-3 on account of interest on capital, and all overhead charges. The decrease in the volume of sales during the year as compared with the two previous years was due mainly to the fact that the Institute was not able to secure appreciable orders from the Director of Contracts for the supply of soaps to the Military department. The Auditor has pointed out that it is desirable to make special arrangements for securing orders from the military and other big consuming departments if the loss in the working of the Institute is to be minimised. It is not possible, however, to make any special arrangements for securing orders from such departments. I am in constant communication with the Director of Contracts and everything possible is being done to secure his orders. As regards other large consumers, individual letters descriptive of the soaps offered by the Institute have been issued during the last few years to all large consumers south of a line drawn from Bombay to Calcutta as well as the leading consumers in industrial centres further north, such as Cawnpore and Ceylon. Railway administrations, mills, factories, estates and hospitals have all been addressed and their enquiries invited when they are in the market for soap. There is no golden rule for the securing of contracts and the Director of Contracts and other large consumers buy in the cheapest market. The Kerala Soap Institute is somewhat disadvantageously situated in regard to the distribution of its products in that it is considerably handicapped by the high cost of freight to the large centres of consumption in Northern India and elsewhere. A Government factory is also at a disadvantage as compared with a private factory in securing contracts. In spite of the fact that rock bottom prices, which would have left no margin of profit, were quoted to the Director of Contracts during the year, but only a small proportion of his total orders was secured. It is very desirable that the heavy overhead charges of the factory should be spread over as large an output as possible, but in view of the increased competition from manufacturers in India whose factories are nearer to the large centres of consumption, and

the ever-increasing competition of imported soaps, it is doubtful whether the Institute can hope to secure, in the future, as large a volume of business from the Director of Contracts as it has received in the past. The manner in which colourable imitations are passed off as the products of the Kerala Soap Institute is also having an increasingly adverse effect on the development of its business. Owing to intensive propaganda and advertisement year by year, the soaps manufactured at the Kerala Soap Institute have become popular in the markets and it pays other manufacturers now to pass off their goods as the Institute's products and to trade on the Institute's established reputation by putting on the market colourable imitations. Many complaints were received in regard to this during the year not only from the agents, stockists and shopkeepers, but also from private customers. In a few cases it has been found possible to induce firms or individuals to change their marks or the designs or form of their cartons or wrappers so as not to resemble the products of the Institute, but the Institute as a Government Institution is rather in a difficult position in a matter of this kind since it is inadvisable that any ground should exist for criticism that the aim of the department is to attempt to set up a monopolistic factory rather than to develop the soap industry of the Presidency on a broad basis.

66. *Insecticidal soap.*—There continued to be a good demand for the insecticidal soap, a speciality of the Institute, the usefulness of which as an effective destroyer of many kinds of insect pests is widely recognized by planters, horticulturists and others. Evidence of the usefulness of this soap is afforded by the fact that orders for its supply were received during the year from countries outside India.

67. *Sales organization.*—Mr. R. C. Dalal continued to act as agent for Malabar, Coimbatore, the Nilgiris and the State of Mysore including Bangalore. Though there was no marked improvement, the volume of business transacted during the period by Mr. Dalal may be regarded as fairly satisfactory in view of the difficult trading conditions which prevailed. Messrs. Unni Brothers, now known as the Anglo-German Trading Company, who were appointed as agents for Cochin and Travancore, have made a good start and it is hoped that this agency will prove a success. Mr. Adam Hajee Muhammad Sait, the Madras Agent, did everything possible to push the sales of soap in Madras and the adjoining areas in the face of severe competition from foreign and indigenous soaps and his efforts were attended with some measure of success. The agency of the Deccan General Trading Company, Secunderabad, was terminated owing to the unsatisfactory results forthcoming from it, and M.R.Ry. K. Visvanatham Chetti, a leading merchant in Secunderabad, was appointed

as stockist at that centre and he has placed some fairly satisfactory orders. M.R.Ry. Palaniappa Mudaliyar, the Madras Agent, displayed considerable energy in introducing Kerala soaps in the several markets in his jurisdiction. Messrs. Devar & Co. continued to act as agents in Ceylon and made every endeavour by means of extensive advertising to improve the sales in Ceylon where foreign competition is intense. The agency of M.R.Ry. S. G. Venkatachala Ayyar, the Bombay Agent, was terminated as owing to the disturbed condition of trade in that centre very little business was forthcoming. The prospects of trade in Bombay appear for the present to be most unfavourable. M.R.Ry. K. Raghavendra Rao, stockist at Kumbakonam, introduced a satisfactory volume of business during the year. The other stockists have not proved satisfactory.

68. *Visits to consuming centres.*—During the year the Superintendent visited the Northern Circars, Ceded districts, Nizam's Dominions, Bangalore, Madras, Malabar and South Kanara. The visits of the Superintendent and the discussions which he had with the agents and stockists generally led to increased business and I attach great importance to the maintenance and development of such personal contact. In the course of his tours the Superintendent visited a number of private soap factories and gave useful advice to the proprietors in regard to improving their products and introducing new lines of soap. In several cases, estimates of the plant and equipment required to develop operations were supplied. Unfortunately, the tendency amongst small soap makers is generally to turn out inferior soaps. It is a pleasant feature however that some of the soap makers have decided to send their boys to the Institute for a course of training in soap manufacture and it is hoped that in time it will be possible to raise the standard of the products turned out by the small factories or concerns.

69. *Training of apprentices.*—During the year five students were admitted for the first year's course and five students continued their training in the advanced course. The course of training includes instruction in general chemistry, oil technology and soap manufacture, and besides receiving theoretical instruction, the students undergo practical training both in the laboratory and factory. A few of the ex-students, who have set up factories of their own, referred to the Superintendent for advice which was freely given and a number of soaps sent by them were analysed and reports furnished thereon. It is satisfactory that the students who have completed their training at the Institute are desirous of developing the industry on the right lines.

70. *Laboratory.*—The high quality and reputation of the Institute's soaps are, as has been pointed out before in this report, largely due to the fact that the raw materials as well as the finished products are carefully examined in the laboratory. During the year under review, 620 analyses were carried out in the laboratory. This analytical work affords also useful training to the students. Among the miscellaneous analyses carried out may be mentioned, twelve kinds of toilet requisites made by the Toilet Manufacturing Company, Chittoor and three samples of Cardole oil sent by Messrs. Peirce, Leslie & Co., Ltd., Mangalore. From the seeds of 'Drumsticks'—*Moringa pterygosperma*, 'Ben oil' was extracted in the laboratory which appears to be useful for the lubrication of delicate machinery, although it is not possible to say anything definite on this point without further experiment as the quantity of oil extracted was small on account of a dearth of seed on the coast. A series of experiments were conducted on the refining and bleaching of groundnut oil supplied by a well-known firm from their mills on the East Coast, and a detailed report and specimens of purified oil were sent to the firm and approved by them. Later, one of their representatives visited the Institute at Calicut when the processes of refining and bleaching the oil were shown to him in detail. The processes employed in manufacturing Marseilles soap, monopole soap and olive oil soap were explained to a firm in Gudiyattam. A number of inquiries in connexion with the manufacture of soap, refining of oils and miscellaneous questions affecting the oils and fats industry were received and answered during the year under review and they showed a considerable increase over that of the previous year.

71. *Visitors.*—The Institute was, as usual, visited during the year by a considerable number of visitors, and several parties of students from educational institutions including a party of students undergoing training in oil technology in the Harcourt Butler Technological Institute, Cawnpore. Dr. R. L. Datta, Industrial Chemist, Department of Industries, Bengal, visited the Institute in order to study the methods employed in the Institute with a view to starting a factory in Bengal. The Institute was visited by the members of the Banking Enquiry Committee during their stay in Calicut.

72. *Future of the Institute.*—In the report of the previous year it was stated that proposals had been submitted to Government for the continuance of the Institute for a period of five years from the 31st March 1929 so that it might, in addition to the training of students in soap manufacture, undertake the conduct of experimental work on essential oils, on the refining, deodorization and hydrogenation of oils and fats, but that the continuance of the Institute had been sanctioned by Government only for another year up to 31st March 1930. The proposals in regard to the conduct of these experiments

were again submitted to Government during the year and Government have now sanctioned the continuance of the Institute for a period of three years from 1st April 1930 for the purpose of training candidates in the art of soap manufacture and undertaking the experiments referred to in connexion with the refining and hydrogenation of oils and fats. It has been stated elsewhere in this report that, in view of the increasing competition which Indian oil seeds meet with from other oils, the decline in the price of oil seeds produced in this Presidency can be arrested only by encouraging the setting up of factories using vegetable oils as raw material. The experiments on oils and fats which have been initiated at the Institute therefore are of very great economic importance and deserve to be watched with the closest attention. The Institute will in future function mostly as a centre for research and demonstration in connexion with the vegetable oil industry of the Presidency and for the training of students in soap manufacture, the manufacture of soap on a commercial scale being regarded as of secondary importance. It would not be possible to carry on the experiments in oil refining, deodorization and hydrogenation of oils and fats independently of the soap factory except at a prohibitive cost, for not only would special buildings, laboratory and staff be required for the purpose, but there would also be difficulty in finding an outlet for the experimental oils produced which can suitably be used up in the manufacture of soap.

#### GOVERNMENT INDUSTRIAL INSTITUTE, MADRAS.

73. *Staff.*—M.R. Ry. S. Venkatarama Ayyar continued to be in charge of the Institute throughout the year.

74. Messrs. Narasimham & Co., to whom certain assets of the Ink Factory section of the Institute had been handed over, continued the manufacture of fluid inks, powders, tablets, etc., under the style of the Standard Ink Works. The firm often sought the assistance of the Superintendent in the manufacture and sale of inks and this has been freely afforded.

75. *Printer's ink.*—The experimental manufacture of printer's ink was the chief item of work engaging the attention of the Superintendent during the year. The machinery installed for the purpose consists of three grinding machines, two mixers and one small centrifugal. The largest grinding machine, which is capable of turning out about a cwt. of inferior quality ink a day, is most useful for grinding news ink since it is not adapted for finer quality inks. Of the remaining two machines one is a roller grinding machine and it is useful for experiments as its outturn is only a few pounds a day, while the other is a laboratory model of a grinding machine and is employed for

grinding inks in ounces and for testing the utility of pigments and other raw materials. These machines were fitted up in December 1929 and the installation of electric motors for the working of the machines was completed by the end of the year. Experiments have been carried out in the manufacture of blue litho, green ink, violet ink, blue ink, news black ink and jobbing ink, and recipes evolved from small scale experiments. The presses which tested the sample inks have expressed satisfaction with their quality and have also placed small orders with the Institute.

The most interesting item of work carried out was the manufacture of ink for rotary presses as it is this grade of ink that is most in demand by newspapers with wide circulation. It was made on a small scale after a number of preliminary tests. One of the main ingredients formerly obtainable locally was found to be no longer available in India and the work was held up temporarily; the recipe was however modified and another indigenous material available locally substituted. The product was tested by one of the leading vernacular dailies, who later placed an order for it.

Over 32 experiments were carried out with a view to evolving new recipes and modifying old ones. A number of specimens of inks were sent to the various printing presses in Madras and have been favourably reported on; a sum of Rs 31-9-0 has also been realized by the sale of printing ink to these presses.

76. The question of bringing the Printer's Ink section of the Institute under Chapter II of the Account Code was under consideration during the year and Government have since passed orders accepting my recommendation that the Institute need not carry out pioneer manufacture on a commercial scale, but that it will be sufficient if it tests the commercial possibility of manufacture of each variety of ink and publishes the data in a pamphlet, leaving private enterprise to undertake the manufacture of the product on a commercial scale. *Pro-forma* accounts will, however, be maintained and audited and will be available to the public for reference.

77. *Lamp black experiments.*—Government sanctioned the conduct of experiments in lamp black in March 1929; and the requisite plant for the purpose was made by the engineering section of the department. The plant was put in operation but was found to require slight modifications and these are being attended to.

78. *Miscellaneous Experiments*—(i) *Lemon grass oil.*—In G. O. Ms. No. 411, Development, dated 22nd February 1930, Government sanctioned the conduct of experiments in the extraction of oil from lemon grass and perfumes from screwpine flowers. A copper still

and condenser for distillation of lemon grass was made locally and distillation was effected with one variety of grass obtained from the Tinnevely district. The results are described in this report under the head experiments.

(ii) *Camphor.*—An experiment was carried out in the purification of crude camphor from the Nilgiris, and a report on a suitable process was communicated to an enquirer.

(iii) *Crucibles.*—An investigation was initiated with a view to ascertaining whether crucibles could be made in India with indigenous materials for use in the smelting of iron, bronze, and similar materials or alloys. These experiments have since proved successful, crucibles of varying compositions having been made from improvised moulds, and one of them resisting successfully the high temperature required for smelting iron. The matter has also been referred to under the head experiments.

#### TEXTILE SECTION.

79. Mr. D. M. Amalsad continued as Assistant Director of Industries (Textiles) and Principal of the Textile Institute throughout the year and Mr. K. T. Achaya as Sericultural Assistant. Messrs. S. Swaminathan and P. Sundaramurti were Lecturers in Textiles and Textile Chemistry respectively. Messrs. O. T. Krishnan, K. Swami Sarma, A. Ramalingaswami, G. Krishna Rao and M. Narasayya served as Superintendents of Textile Demonstration.

80. The Textile Branch of the Department of Industries has been constituted mainly for the rehabilitation of the textile cottage industry of the province, and in developing this industry, the department has to watch carefully the progress that is being made by the power textile industry in India and abroad. If the handloom weaving industry is to continue to exist, as a full-time occupation, and flourish side by side with the power industry, it follows that the former should, in a measure, keep pace with the latest developments and organization of the mill industry.

81. The existence or development of cotton-spinning mills is essential to the well-being of the handloom weaving industry. Cotton-spinning mills which supply yarns to the handloom weavers at favourable rates form an important 'link' in the organization of the handloom weaving industry. As several new spinning mills have been floated in this province within the last few years and others are under construction, the department does not consider it necessary to take steps with a view to the starting of a co-operative spinning mill for producing yarns for the weavers. The attention of the department is concentrated in eliminating the middlemen and arranging for the supply to the weavers' co-operative societies of yarns of the required tensile strength and correct count, at low transport charges.

82. The existence of power-weaving mills cannot be regarded as a serious danger to the handloom weaving industry. If the products of power-weaving mills compete directly with handloom cloths and if the powerloom has deprived the handloom of a good portion of the demand, which the latter would otherwise have supplied and if, by curtailing the work of the handloom weavers, it has diminished their income and thus arrested the progress of the handloom weaving industry, it is because there has been keen organization of the mill industry. If, in spite of such competition, the handloom industry still continues to exist as a principal village industry next to agriculture, it is not because the industry affords a living wage to nearly two million people dependent upon it, but because tradition and natural bent make them cling to their hereditary occupation, in the entire absence of any other equally suitable and more remunerative rural industry, and there are certain lines, thanks to the conservatism of the people, in which power looms cannot compete with handlooms and produce the cloths demanded by the community at large.

83. The problem which the department has been grappling during the year under report is to bring about an adjustment in the spheres of activities of the power and the handlooms, and this can be automatically achieved by the organization of the handloom weaving industry on a commercial basis. But the task which faces the department is of no mean magnitude, because any effective attempts taken to solve the problem must, in the present condition of the industry, take some time to mature, owing to the delay on the part of the weavers, as a result of their illiteracy, ignorance and indebtedness, to readily fall in line with any organization contemplated by the department. Time is an essential factor in the resuscitation of the handloom weaving industry and all efforts should be directed towards assisting the weaver in removing the disparity in prices between the hand-made and the mill-made cloths. The survey of cottage industries by a Special Officer who has dealt with the existing state of the main textile cottage industries, the convening of a Textile Conference to suggest means for the development of the textile industry, the appointment of a Cottage Industries Committee to report on the steps to be taken for their development, and the creation of a Textile Advisory Committee have all helped the department in laying down a definite policy to be pursued in the development of this important industry which affords a means of subsistence to a very large portion of the rural population.

84. The Textile Advisory Committee referred to above was constituted by Government in G.O. No. 1684, dated 5th October 1929, in pursuance of a recommendation of the Textile Conference. It is intended to advise Government in all matters relating to the

improvement of the textile industry and the betterment of the weaving classes. The Hon'ble Minister for Development is Chairman of the Committee and the Director of Industries is a member (ex officio). One meeting of the Committee was held during the year at which the following subjects were discussed and definite recommendations made to Government:—The introduction of a hire purchase system for the sale of comparatively costly textile appliances; purchase of small units of power-driven machinery suitable for linking with the handlooms, their supply to persons who are in a position to work them for the benefit of the weavers and recovery of their cost progressively by annual instalments, the amount being free of interest; prescription of a standard strength test, etc., for Indian mill yarns supplied to the handloom weavers; reduction in the transport charges in the case of yarns and handloom cloths; removal of the import duty on cotton yarns of counts above 40s; removal of the duty on gold thread; revision of the duty levied on imported silks with reference to the quality and price; grant of bounties to silk filatures in the Presidency; assignment of land free; provision of borings for water and supply of cheap fuel, for such pioneering enterprises as need the aid of small units of power-driven machinery to be linked with handlooms, for instance, power dresser sizing plants, wool spinning plants, silk filature plants, silk throwing plants and dyeing machinery.

85. *Hand spinning*.—The attention of the Textile branch was also devoted during the year under report to the evolution of an improved hand-spinning wheel, so that spinning may be taken up as a suitable spare-time occupation for women and children in rural areas. Attempts were first made to study the construction of the various types of the so-called improved spinning wheels placed on the market in India. All of them being found to be defective, steps were taken to ascertain through a firm in Madras whether an improved spinning wheel could be obtained from the Continent which would enable the spinners to produce yarns fairly uniform in thickness and nearly regular in tensile strength and which would reduce the cost of spinning. The firm, after a good deal of correspondence, eventually obtained a combined carding and spinning machine, valuable for the many devices it contains and placed it in the Textile Institute for trial tests. The machine was found to be a great improvement over the charka, but some mechanical modifications were found to be necessary for the purpose of working South Indian cotton. A successful attempt to carry out these modifications will enable the department to evolve an improved spinning machine and thus supply the long-felt want not only of the cotton but also of the wool spinners. This will engage the attention of the Research Engineer who has recently entered upon his duties.

Kalahasti, Vaniyambadi, Arni, Arcot, Gudiyattam, Conjeeveram, Bellary, Adoni, Rayadurg, Nandyal and Kodumur, Kurnool district. A dyeing demonstrator visited Panruti and gave demonstration in the working of the spraying machine and printed a table cloth at the Danish Mission Industrial School. As a result of the efforts of the dyeing party, three private parties from Mori, Cannanore and Gudiyattam purchased serograph printing machines and there are demands for the machine from aided industrial schools where weaving is taught. The party enabled dyers to study latest methods of dyeing cotton, silk and wool with synthetic dyes.

90. The main obstacles with regard to the progress of these parties have been (a) the absence of a co-operative organization for affording credit facilities to the weavers and dyers to enable them to introduce the improved methods and appliances carried to their very doors, (b) absence of an organization for supplying the weavers and the dyers with raw materials at favourable rates and the absence of an organization for the disposal of the finished products and (c) lack of facilities for the evolution of improved textile cottage appliances.

91. *Evolution of improved textile appliances.*—Improved textile appliances to suit cottage weavers can be devised only as a result of co-ordinated efforts of the Textile Expert and a mechanical Engineer. In pursuance of G.O. No. 509, Development, dated the 22nd March 1929, a beginning was made by the appointment of a Mechanic for the purpose of improving defects in the existing appliances, but it was not possible for him to devise any mechanical adjustment to suit the requirements of the Textile Section. Government were therefore addressed for the appointment of a Research Engineer and orders sanctioning the appointment of a Research Engineer were received about the close of the year.

92. *Linked organizations.*—All attempts so far made by the department have fallen far short of giving the handloom weavers a chance against mill competition. Improvement in the quality of cloths produced on the handlooms and a reduction in its price, particularly in cotton, silk and wool industries could be effected only by linking the weavers with organizations for speedier and more economical preparatory processes conducted by power-driven machinery. Just as the spinning mill forms a 'link' in the organization of the handloom weaving industry, so also must a warp preparation organization supplant street sizing wherever this process when conducted by hand is found to be uneconomical. But, if the condition of the weavers is to be bettered by the scheme of 'linked' organizations and if they are to be freed from their dependence on sowcars or master weavers, the plants should be worked on co-operative basis. It was pointed out in last year's administration

report that a private firm Messrs. Mupparty Mahalakshmi Bros., Mori, Razole taluk, were induced to instal a power dresser sizing plant and the department rendered assistance in the erection of the plant in Mori. The firm have been satisfied with the working of the plant, the output of sized warp attainable per day and the quality of the warp of 20s, 40s, 60s and 80s counts produced and the weavers who used these warps were also satisfied with their quality. The plant is capable of a minimum production of 1,200 yards per day of 10 hours working. The firm, however, have been unable to organize a group of weavers for the regular absorption of the daily output of the plant and to conduct cash transaction in the sale of sized warps in long lengths as well as take back the cloth from the weavers and market the same. The department is therefore considering the possibility of transferring the dresser sizing plant to a co-operative organization of weavers.

#### SERICULTURE.

93. *Sericultural section—Coonoor Farm.*—The activities of the farm are now confined to the hybridisation of worms and cultural improvements of mulberry plantations. On account of the fungus disease persisting during the first nine months of the year, hybridisation of worms had a set back and one batch of worms actually suffered from pebrine. Now that the plantation has been free from fungus disease for the last five months, better results in hybridisation are expected.

A good crop was raised out of  $1\frac{1}{4}$  oz. of seed of French univoltine worms. Manuring of the plantation is being regularly done on scientific lines and the results as far as leaf production is concerned cannot yet be definitely stated though the plantation looks fresh and better.

Two successful crops of Mysore worm were reared during the year and the cocoons were reeled in the farm itself with the Italian domestic reeling machine. One student was trained during the year.

94. *Peripatetic Rearing Party.*—The party consists of a Silk Superintendent, five Moth Testers, one Rearer and one Silk Reeling Demonstrator stationed at the village of Kamakere (Kollegal taluk). The activities of the party fall under four heads: (1) Moth testing at the house of rearers, (2) propaganda on improved and rational methods of rearing, (3) training intelligent rearers in the use of microscopes, (4) assisting literate rearers in the starting and maintaining of grainages, and (5) assisting the installation of improved types of reeling machinery by private parties.

The Peripatetic Rearing Party tested during the year 234,999 layings belonging to 229 rearers in a group of 24 villages as against 142,245 layings tested during the previous year. Rearers who used tested seed have on each occasion harvested successful crops, and the efficacy of seed examination has been understood by the majority of rearers. Hence the work for moth testing is gradually increasing and it seems doubtful whether the party will be able to cope with the increasing testing work. The party also taught some of the intelligent rearers the work of moth testing, so as to make them self-reliant in the matter of testing their own seed. The party hired out 200 spinning trays to the rearers of Kamakere and surrounding villages and a sum of Rs. 150-6-6 has been realized. The party supplied mulberry cuttings to Coonoor, Parlakimedi, Coimbatore and Chittoor during the year for starting mulberry plantations. Three thousand three hundred and sixty-three layings of disease-free-seed were supplied to district sericultural centres and the only source of supply in spite of unfavourable circumstances is from Kollegal at all seasons of the year. The Kollegal area also serves as a disease-free-seed distribution centre.

95. *Starting of aided grainages.*—Three of the rearers who were taught the work of moth testing started grainages with the aid of the department one at Kamakerai, one at Singanallur and the other at Honderbalu. Another has started a grainage at Kollegal but he has not yet learnt microscopic work. Two of these private grainers are being selected for the grant of concessions sanctioned in G.O. Ms. No. 315, Development, dated 18th February 1930, during the current year.

96. *Silk reeling.*—With the assistance of the department Mr. Silva of Bangalore has started a filature of 40 basins in the village of Mudigundam (Kollegal taluk) which commenced work from the middle of November 1929. A large quantity of reelable cocoons produced by the rearers of Kollegal taluk is being consumed by this filature with fair cash transactions. This has helped the quick disposal of cocoons by the village rearers which was hitherto a slow process on account of the customary credit transactions. The example set by the present enterpriser together with the proposed starting of a silk-throwing plant for which machinery has been ordered by a private capitalist is sure to induce many others to start filatures.

One domestic reeling machine of five basins started by Nanjundaswami of Bastipuram worked throughout the year. All the silk reeled on this machine found a ready market at remunerative prices. The owner has decided to extend his reeling concern

by installing another unit of five basins. He has applied for a loan of Rs. 750 under the State Aid to Industries Act and the application is under the consideration of Government.

Many of the reelers are anxious to start five basin units provided they are given certain concessions which the Mysore Government are extending to the purchasers of these basins.

97. *Sericultural Co-operative Society at Doddindwadi.*—The society purchased 53,750 seed cocoons during the year, converted them into disease-free-seed and distributed them to the village rearers. Satisfactory results were obtained by the rearers who used these seeds. Many of the rearers are in the habit of crowding ripe worms during spinning time for want of adequate number of spinning trays. The action of the co-operative society in hiring out spinning trays to them at a nominal rent is highly appreciated by the members and other rearers. The reeling quality of the cocoons has been thereby improved. With greater financial assistance, the society may be able to turn out more useful and substantial work than at present.

98. *Hosur Silk Farm.*—The farm was opened with 2½ acres of land taken on lease at the village of Chinnabelugondapalli in May 1929 and mulberry cuttings were planted in July 1929. The plants were ready for leaf picking in December 1929. The farm could not therefore rear more than one breed of worms during the year. Out of that successful rearing, 31,120 seed cocoons (53 lb. in weight) were harvested and the whole produce was sent to the Silk Superintendent, Kamakere, who prepared disease-free-seed out of the cocoons and distributed them to the rearers of Kollegal. The rearers who used the Hosur Farm seed obtained very successful results and they were satisfied with them. If the seed cocoons raised in this farm suit Kollegal conditions, there is a great future for this farm.

99. *District sericultural work.*—The following localities have so far been found to be suitable for the introduction and development of sericulture:—(1) Parts of Tinnevely district, (2) Kolli Hills in Salem district, (3) Palmaner and other parts of Chittoor district, (4) Parlakimedi in Ganjam district, (5) Coimbatore and (6) Melrosapuram. There are only four Practical Sericulturists working at present in the following centres:—(1) Madanapalle plateau (Palmaner and Chittoor), (2) Parlakimedi (Ganjam district), (3) Vadakangulam (Tinnevely district), and (4) Kolli Hills (Salem district). Considering the scope and possibilities of sericultural work, the number of sericulturists has been found to be inadequate.

Mulberry plantations were started in the following parts of Tinnevely district :—

|                          | ACS. |
|--------------------------|------|
| (1) Vadakangulam .. .. . | 5    |
| (2) Avarikulam .. .. .   | 1½   |
| (3) Pushpavanam .. .. .  | 0.5  |
| (4) Palamecottah .. .. . | ½    |
| (5) Rochmanagar .. .. .  | 2    |

Several rearings of silk worms were conducted successfully at the R. C. Lace School, Vadakangulam, six rearings at Rochmanagar and one rearing at Palamecottah. Rearing of worms will soon be started in other localities of the Tinnevely district.

An improved and simple type of reeling machine was erected at the R.C. Lace School and reeling work has commenced. Practical instruction is being imparted to the girl students by the Departmental Silk Reeling Demonstrator stationed there. It is proposed to find out whether Vadakangulam can be made a seed cocoon producing centre. A microscope with accessories is being sent there to test the seed. The Practical Sericulturist well versed in this work will attend to it.

**Kolli Hills.**—Two and a half acres of land belonging to Rev. Thrower were brought under mulberry. The Practical Sericulturist conducted many successful rearings. The Silk Reeling Demonstrator who was working at the Government Textile Institute was sent to Kolli Hills in order to reel all the cocoons raised at the farm. The silk produced was sent to Kollegal for being woven into cloth at the request of Rev. Thrower. This is another important centre for our operations. The silk industry affords a very congenial and subsidiary occupation for the hill tribes. Rev. Thrower who has great influence over them is confident of inducing them to take to this lucrative industry.

**Palmaner.**—Miss Jongewaard, Superintendent, Women's Industrial School, Palmaner, was induced to plant an acre of land with mulberry which has come up well. One successful crop of cocoons was also raised. The cocoons (7½ lb. in weight) the best of the kind were received at the Government Textile Institute for reeling. This centre will serve the purpose of extending the industry to the Madanapalle plateau.

**Parlakimedi.**—Mulberry was cultivated at the Raja's Home Farm and rearing work has commenced.

**Work in Toda Colony, Fern Hill, Oolacamund.**—The mulberry plantation has proved a failure due to the prevalence of heavy frost for some months in the year, and permission has since been granted to the owner to close the farm.

## INDUSTRIAL ENGINEERING.

100. The work of the engineering branch consists mainly of the conduct of boring operations, the maintenance of pumping installations and industrial machinery already at work, the supply, erection and maintenance of pumping plants suitable for irrigation as well as industrial machinery and the investigation of applications for loans under the Agriculturists' Loans Act and of certain applications received under the State Aid to Industries Act.

101. **Staff.**—Mr. L. S. Pinto held the appointment of Industrial Engineer during the year assisted by five Assistant Industrial Engineers, one solely in charge of the Industrial workshops and four in charge of Bezwada, Bellary, Coimbatore and Tanjore divisions, the Industrial Engineer holding direct charge of Madras and Chingleput districts.

During the year under review, the Bezwada division which was found too unwieldy for a single officer, was bifurcated, a new division being formed comprising of the districts of Bellary, Kurnool, Cuddapah, Anantapur, Nellore and Chittoor under an Assistant Industrial Engineer, with headquarters at Bellary. The subordinate staff of the Engineering section consisted on the 31st March 1930 of 19 supervisors, 51 mechanics and 226 boring maistris, drillers and apprentices.

102. The following table shows the distribution of the executive staff :—

| Districts comprising the divisions. | Name of sub-division in charge of supervisor. | Headquarters of subdivision. | Supervisors. | Mechanics. | Boring maistris, drillers and assist. aut. drillers. | Apprentice boring maistris. | Surveyors. |
|-------------------------------------|-----------------------------------------------|------------------------------|--------------|------------|------------------------------------------------------|-----------------------------|------------|
| Industrial Engineering Workshops.   | Madras .. ..                                  | Madras ..                    | 1            | ..         | ..                                                   | ..                          | ..         |
| Drawing Branch ..                   | Do. .. ..                                     | Do. ..                       | 1            | 1          | ..                                                   | ..                          | ..         |
| <b>Bezwada Division</b>             |                                               |                              |              |            |                                                      |                             |            |
| Ganjam and Vizagapatam.             | Vizagapatam .. ..                             | Vizagapatam ..               | 1            | 2          | 7                                                    | ..                          | ..         |
| Godavari East and West..            | Godavari .. ..                                | Rajahmundry ..               | 2            | 2          | 14                                                   | 8                           | ..         |
| Kistna and Guntur ..                | Bezwada .. ..                                 | Bezwada ..                   | 1            | 2          | 14                                                   | 2                           | ..         |
| <b>Bellary Division</b>             |                                               |                              |              |            |                                                      |                             |            |
| Nellore and Chittoor ..             | Nellore .. ..                                 | Nellore ..                   | 1            | 1          | 13                                                   | 1                           | ..         |
| Bellary and Kurnool ..              | Bellary .. ..                                 | Bellary ..                   | 1            | 3          | 20                                                   | 1                           | ..         |
| Cuddapah and Anantapur.             | Cuddapah .. ..                                | Cuddapah ..                  | 1            | 1          | 4                                                    | 2                           | ..         |

| District comprising the divisions. | Name of sub-division in charge of supervisor. | Headquarters of sub-division. | Supervisors. | Mechanics. | Boring maistris, drillers and assistant drillers. | Apprentice maistris. | Surveyors. |
|------------------------------------|-----------------------------------------------|-------------------------------|--------------|------------|---------------------------------------------------|----------------------|------------|
|------------------------------------|-----------------------------------------------|-------------------------------|--------------|------------|---------------------------------------------------|----------------------|------------|

*Tanjore Division.*

|                            |                    |                    |   |   |    |    |    |
|----------------------------|--------------------|--------------------|---|---|----|----|----|
| South Arcot .. ..          | Cuddalore .. ..    | Cuddalore .. ..    | 1 | 4 | 10 | .. | .. |
| Tanjore .. ..              | Tanjore .. ..      | Tanjore .. ..      | 1 | 3 | 13 | 1  | .. |
| Madura and Trichinopoly .. | Trichinopoly .. .. | Trichinopoly .. .. | 1 | 3 | 8  | 1  | .. |
| Ramnad and Tinnevely ..    | Tinnevely .. ..    | Tinnevely .. ..    | 1 | 2 | 4  | .. | .. |

*Coimbatore Division.*

|                                     |                  |                  |   |   |    |    |    |
|-------------------------------------|------------------|------------------|---|---|----|----|----|
| North Arcot and Salem ..            | Vellore .. ..    | Vellore .. ..    | 2 | 3 | 10 | 2  | .. |
| Coimbatore and the Nilgiris.        | Coimbatore .. .. | Coimbatore .. .. | 1 | 5 | 15 | 1  | 1  |
| South Kanara, Malabar, and Anjengo. | Mangalore .. ..  | Mangalore .. ..  | 1 | 1 | 6  | .. | .. |

*Madras Subdivision.*

|                                                                       |              |              |   |   |    |    |    |
|-----------------------------------------------------------------------|--------------|--------------|---|---|----|----|----|
| Madras and Chingleput (under the control of the Industrial Engineer). | Madras .. .. | Madras .. .. | 2 | 3 | 36 | .. | .. |
|-----------------------------------------------------------------------|--------------|--------------|---|---|----|----|----|

103. *Information and advice.*—General information and advice on engineering matters is given free provided no local inspection is involved. In cases where a local inspection is necessary a fee of Rs. 10 is levied, in return for which advice is given in regard to the selection of a suitable site for a factory, mill, installation, or well and as to the most suitable type of machinery for the purpose. No fees are however levied for services rendered to other departments of Government except in the case of Government commercial undertakings.

The following table shows the number of applications for information and advice received during the year. The number of such applications increased from 263 in the previous year to 290 during the year under review :—

| Division.        | Pending on 1st April 1929. | Received during the year. | Disposed of during the year. | Pending on 1st April 1930. |
|------------------|----------------------------|---------------------------|------------------------------|----------------------------|
| Tanjore .. ..    | 12                         | 82                        | 82                           | 12                         |
| Coimbatore .. .. | 27                         | 75                        | 91                           | 11                         |
| Bezwada .. ..    | 2                          | 46                        | 42                           | 6                          |
| Bellary .. ..    | 7                          | 68                        | 61                           | 11                         |
| Madras .. ..     | 7                          | 19                        | 17                           | 9                          |
| Total .. ..      | 55                         | 290                       | 296                          | 49                         |

104. *Levy of fees for work done by the Engineering section.*—The main object of the pumping and boring operations conducted by the department is to render assistance to agriculturists and small industrialists with a view to increase the agricultural wealth of the country. Owing to the reduction in the scale of fees effected from October 1927, the demand for the use of the departmental plants and for other services afforded by the Engineering section continued to increase.

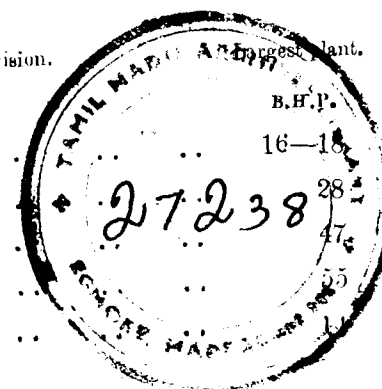
105. *New erections.*—The erection of machinery and plant is undertaken for a nominal fee of two per cent on the capital cost of machinery installed. The number of plants erected during the year was 96, as detailed below :—

| Division.        | Pending on 1st April 1929. | Received during the year. | Disposed during the year. | Pending on 1st April 1930. | Remarks.                             |
|------------------|----------------------------|---------------------------|---------------------------|----------------------------|--------------------------------------|
| Bezwada .. ..    | 3                          | 4                         | 4                         | ..                         | 4 pumping plants.                    |
| Bellary .. ..    | 1                          | 34                        | 26                        | 9                          | 11 pumping and 8 industrial plants.  |
| Tanjore .. ..    | 4                          | 31                        | 34                        | 1                          | 6 pumping and 20 industrial plants.  |
| Coimbatore .. .. | ..                         | 12                        | 11                        | 1                          | 23 pumping and 11 industrial plants. |
| Madras .. ..     | ..                         | ..                        | ..                        | ..                         | 5 pumping and 6 industrial plants.   |
| Total .. ..      | 8                          | 109                       | 96                        | 21                         |                                      |

The capital invested in the above plants, including the cost of the buildings amounted to about Rs. 3,78,250. The largest and the smallest plants erected during the year in each division are as under :—

Division. Largest plant. Smallest plant.

|                  | B.H.P. | B.H.P. |
|------------------|--------|--------|
| Bezwada .. ..    | 16—18  | 10½    |
| Bellary .. ..    | 28     | ¾      |
| Tanjore .. ..    | 47½    | 6      |
| Coimbatore .. .. | 55     | 4      |
| Madras .. ..     | 11     | 5      |



The acreage and the probable enhanced income accruing as a result of the pumping plants erected by the department during the year under review are as shown below :—

| Division.          | Acreage brought under irrigation. | Probable enhanced income accruing therefrom. |
|--------------------|-----------------------------------|----------------------------------------------|
|                    |                                   | RS.                                          |
| Bezwada .. .. .    | 25                                | 3,500                                        |
| Bellary .. .. .    | 181                               | 20,500                                       |
| Tanjore .. .. .    | 30                                | 4,000                                        |
| Coimbatore .. .. . | 369                               | 55,350                                       |
| Madras .. .. .     | 100                               | 10,000                                       |

106. *Compounding system.*—Under this system, owners of private installations are entitled to have their plants inspected and overhauled three times a year for a fixed fee of Rs. 10 per annum, and also at other times, if special requisitions are received, for which however a small additional fee is charged. That the system is growing in popularity is evident from the fact that the number of plants under maintenance by the department has steadily increased :—

The number of plants compounded during the year under review was 691 as against 597 in 1928-29 and 500 in 1927-28. The following statement shows the number of plants under maintenance in the five divisions :—

| Division.          | Industrial plants. | Pumping plants. | Combined plants. | Electrical plants. | Total. |
|--------------------|--------------------|-----------------|------------------|--------------------|--------|
| Bezwada .. .. .    | 55                 | 28              | 2                | ..                 | 85     |
| Bellary .. .. .    | 54                 | 48              | 5                | ..                 | 107    |
| Tanjore .. .. .    | 142                | 75              | 10               | 19                 | 246    |
| Coimbatore .. .. . | 60                 | 104             | 13               | ..                 | 177    |
| Madras .. .. .     | 15                 | 49              | 12               | ..                 | 76     |
| Total .. .. .      | 326                | 304             | 42               | 19                 | 691    |

The largest and the smallest plant compounded in the divisions are the following :—

| Division.          | Largest size of plant. | Smallest size of plant. | Total approximate horse power compounded. |
|--------------------|------------------------|-------------------------|-------------------------------------------|
| Bezwada .. .. .    | R H.P.                 | B H.P.                  |                                           |
| Bellary .. .. .    | 96½                    | 1½                      | 2,378½                                    |
| Tanjore .. .. .    | 72                     | 1                       | 1,938½                                    |
| Coimbatore .. .. . | 150                    | 1½                      | 5,110½                                    |
| Madras .. .. .     | 300                    | 4                       | 2,970                                     |
|                    | 56                     | 4                       | 1,090                                     |

107. *Loans for purchase of pumping plants.*—Loans under the Agriculturists' Loans Act are granted by Government on favourable terms to ryots for the installation of pumping plants where there is reasonable prospect of increased cultivation and due return. During the year under review 41 applications were disposed of, of which 31 were withdrawn or rejected and 10 loans of an aggregate amount of Rs. 40,500 were sanctioned. The amount actually disbursed during the year was Rs. 48,470-15-3. Of the 10 loans sanctioned during the year, 3 were in the Madras subdivision, 2 in the Tanjore division and 5 in the Coimbatore division.

The number of loans and the amount sanctioned during the previous four years were as follows :—

| Year.           | Number of loans. | Amount disbursed. |
|-----------------|------------------|-------------------|
|                 |                  | RS.               |
| 1925-26 .. .. . | 5                | 42,500            |
| 1926-27 .. .. . | 9                | 47,000            |
| 1927-28 .. .. . | 23               | 1,03,300          |
| 1928-29 .. .. . | 17               | 64,263            |

The decrease in the number of loans and the amounts sanctioned during the year as compared with the previous year is due to a closer scrutiny of the *bona fides* of the applications. This was necessitated on account of the failure of some of the borrowers either to benefit by the loans or to pay the instalments. Further, the inadequacy of supplies in the springs in the Palar, referred to in the Administration report of last year, rendered it expedient to reject a few applications from the North Arcot and Chittoor districts. The orders of Government conveyed in G.O. Press No. 422, Finance, dated 1st June 1929, reducing the rate of interest charged on loans from 7½ to 6½ per cent from 1st April 1929, have given relief to the agricultural population as the payment of the smaller rate of interest will enable them to derive increased benefit from the installations set up. The reduction in the rate of interest may also be expected to result in the receipt of an increased number of applications.

108. *Boring.*—The department now maintains 21 power drills including one air compressor drill and 106 hand boring sets. Owing to the scarcity of water for irrigation as well as for drinking purposes caused by unfavourable seasons during the last few years, there has been a very large demand for borings, but the department was unable to meet the demand since the department unconsciously drifted away from the original policy of helping the agriculturists. It has therefore been found necessary in the interests of the agriculturists and small scale industrialists to lay down a definite policy for the use of the boring sets and the matter is at present engaging the attention of Government.

The following table exhibits the territorial distribution of the applications received for boring, the number of feet bored in each of the divisions and other relevant particulars:—

| Division      | Applications pending on 1st April 1929. | Applications received during 1929-30. | Applications disposed of during the year. | Pending applications on 1st April 1930. | Total number of feet bored through. | Number of borings put down. | Number of successful borings. | Number of unsuccessful borings. |
|---------------|-----------------------------------------|---------------------------------------|-------------------------------------------|-----------------------------------------|-------------------------------------|-----------------------------|-------------------------------|---------------------------------|
| Bezwada .. .. | 125                                     | 124                                   | 169                                       | 80                                      | 14,624                              | 188                         | 131                           | 57                              |
| Bellary .. .. | 35                                      | 80                                    | 86                                        | 29                                      | 7,520                               | 145                         | 129                           | 16                              |
| Tanjore .. .. | 20                                      | 112                                   | 113                                       | 19                                      | 13,519                              | 270                         | 186                           | 84                              |
| Coimbatore .. | 28                                      | 111                                   | 124                                       | 15                                      | 7,707                               | 197                         | 149                           | 48                              |
| Madras .. ..  | 22                                      | 60                                    | 66                                        | 16                                      | 5,960                               | 136                         | 78                            | 58                              |
| Total .. ..   | 230                                     | 487                                   | 558                                       | 159                                     | 49,330                              | 936                         | 573                           | 263                             |

The total number of borings put down and the depth bored during the year were 936 and 49,330 feet respectively as against 746 and 40,672 feet respectively in the previous year. There will be a considerable expansion if the legitimate object of the boring appliances are kept steadily in view.

109. The following interesting features in regard to the borings put down by the department during the year are perhaps deserving of mention.

*Artesian borings.*—In Vriddhachalam taluk, South Arcot district, four artesian springs were tapped during the year under review. The first and second were tapped for Sambasivam Pillai of Kumaramangalam and they give a discharge of 200 to 350 gallons per minute at a height of 2 feet and 7 feet from ground level, the depth of the bore holes being 123 feet and 270 feet respectively. The third spring was tapped for Venugopal Pillai of Kilapalur at a depth of 250 feet and it gives a discharge of about 350 to 400 gallons per minute. The fourth spring tapped was in the boring put down for Sankaram Pillai, Devangudi, and it discharges about 300 gallons per minute, at a height of 8 feet from ground level, the depth of the bore-hole being 235 feet.

*Sub-artesian borings.*—At Vidavalur village, Kovur taluk, Nellore district, where good drinking water was not available and salt water was met with at a depth of 13 feet below ground level, borings to a depth of 50 to 60 feet were put down for three applicants and fresh water springs were tapped in all cases and hand pumps were fitted over them. At Sulurpet, two borings were put down to depths of 100 and 58 feet in a well belonging to Subramaniam Chetti in consequence of which the level of water in the

well rose 7 feet affording supply for a kavalai for 8 hours. A bore-hole put down for a house at Tirupati tapped good springs at a depth of 81 feet below ground level, the discharge being about 9 gallons per minute. In a salt water well in a private garden at Cuddapah, a boring was put down to a depth of 109 feet and two fresh water springs were struck at 67 feet and 86 feet in rock which raised the level of water in the well from 25 to 14 feet from ground level and changed the taste of the water in the well. In a ground boring put down at Gooty, a fresh water spring was tapped at a depth of 33 feet with a discharge of 6 gallons per minute, the water being used for the boiler attached to the groundnut decorticator of Y. Rasool Sahib. Prior to this boring, he had to spend Rs. 150 per month to get water from a distance of a mile. Three borings put down in a private well at Patapalli, Tadpatri taluk, to depths of 104, 102 and 102 feet tapped a sub-artesian spring which raised the level of water in the well by 5 feet and rendered drinkable what was brackish and of bad smell previously. At Isibi village near Adoni, a 6" bore-hole put down in a well in the compound of a ginning factory tapped a fresh water spring at a depth of 90 feet from ground level with a discharge of 4 gallons per minute.

A similar boring put down at Hospet yielded a fresh water spring with a discharge of 8 gallons per minute at a depth of 60 feet. In some of the villages of the Kurnool district, where there is scarcity for good drinking water free from guinea-worm, several bore-holes were put down at varying depths with the result that good and healthy springs were tapped and the villagers were given relief. At Kanadukathan, two borings were put down for the Hon'ble Raja Sir Annamalai Chettiyar to a depth of about 500 feet and 243½ feet, the water-level standing at 6 feet and 33 feet respectively from ground level.

At Pallavaram, a boring was put down for the Chrome Leather Company to a depth of 260 feet in rocky strata and a spring was tapped, raising the water-level from 20 feet to 15 feet from ground level.

A boring was put down at Naduvankarai for M.R.Ry. Rao Bahadur Soora Lakshmiah Chetti, Madras, to a depth of 380 feet in gravel and clayey strata.

A boring was put down at Pomethukulam for M.R.Ry. Diwan Bahadur T. Rangachariar, Madras, to a depth of 452 feet, in almost gravel and clayey strata, and a spring was tapped raising the water-level from 22 feet to 18 feet from ground level.

110. *Publication of boring results.*—The Government have in their Memorandum No. 3491-II/27-3, dated 29th February 1928, observed that it will be of use if the details of boring work undertaken every year could be got together in a handy form and published for general information. With this end in view, they sanctioned in G.O. No. 1019 (Mis.), Development, dated 16th June 1928, the employment of a draughtsman and a maistri clerk for a period of one year to compile the requisite statistics. The staff started work in June 1929 and the compilation for the year 1928-29 was nearing completion by the end of the year under review and part of the report is already in print.

111. *Survey of subsoil water in the Bellary district.*—These operations which were commenced last year continued during the year under review up to 6th February 1930. Out of the 12 hand boring sets employed on the operations, 5 sets were withdrawn in November 1929; 45 borings were put down during the year and the total depth bored was 2,642 feet. The borings put down in the several villages were as follows:—

|                      |             |
|----------------------|-------------|
| Sridaragadda .. .. . | 28 borings. |
| Kollagallu .. .. .   | 10 "        |
| Sanganakal .. .. .   | 2 "         |
| Gonahalli .. .. .    | 4 "         |
| Bisalaballi .. .. .  | 1 boring.   |

Out of a total number of 97 borings put down by the department during the course of the survey 9 were abandoned under the orders of Government since they were in black cotton soil. Of the remaining 88, 30 yielded fresh water, 12 slightly brackish and 32 brackish water while 14 borings proved total failures. In the result 42 borings yielded either good or slightly brackish water. The experiment has established the fact that it is possible by means of boring to tap underground sources of water even in tracts considered totally unpromising. Considering the hard rock which had to be negotiated the absence of reliable data to work upon and the poor response received from the ryots, the results may be deemed satisfactory. Valuable data have been compiled which will be of value in future operations in similar localities. What remains to be done now is to follow up the results of the survey by the actual sinking of wells where fresh water springs have been tapped and this is the work of the local boards. M.R.Ry. A. Ranganatha Mudaliyar Avargal, M.L.C., is interesting himself in this behalf. He intends constructing one or two wells over the boreholes certified by the department.

112. *Pumping sets.*—The department maintains a number of pumping sets comprising oil engines and centrifugal pumps. These are of two kinds, one being used for pumping water for irrigation and the other for well sinking. The former are maintained for the

purpose of (1) demonstrating to the ryots the advantages of lifting water by mechanical power and (2) watering crops to save them from withering, pending the repair or erection of a pumping installation. The second type of plant is utilized in connexion with the construction and sinking of wells. The number of pumping plants in the possession of the department at the end of the year was 41. The number of applications received during the year under report for the plants was 122 as against 130 in 1928-29 and 113 in 1927-28. The following statement shows the number of applications registered and disposed of during the year in the various divisions:—

| Division.          | Number of applications pending on 1st April 1929. | Number of applications registered during the year. | Number disposed of during the year. | Number pending on 1st April 1930. |
|--------------------|---------------------------------------------------|----------------------------------------------------|-------------------------------------|-----------------------------------|
| Bezwada .. .. .    | 2                                                 | 12                                                 | 13                                  | 1                                 |
| Bellary .. .. .    | 3                                                 | 18                                                 | 19                                  | 2                                 |
| Tanjore .. .. .    | 4                                                 | 16                                                 | 18                                  | 2                                 |
| Coimbatore .. .. . | 2                                                 | 53                                                 | 54                                  | 1                                 |
| Madras .. .. .     | 4                                                 | 23                                                 | 27                                  | ..                                |
| Total .. .. .      | 15                                                | 122                                                | 131                                 | 6                                 |

By the use of these plants a number of ryots were enabled to deepen their wells and thus improve their water-supply, the assistance rendered by the department being greatly appreciated.

Dr. Venkataswami Chetti, District Medical Officer, Chingleput, has sunk a well 40 feet deep in his shrotriyam near Kodur, Cuddapah district, with the aid of one of the departmental pumping sets. He is now installing over it a pumping plant of his own with a view to bring 50 acres of fruit gardens under well irrigation.

M.R.Ry. Megavarnam Nayudu of Nagari, Chittoor district, had his 5 acres of paddy saved by the timely watering of his crop with the aid of one of the departmental sets when his irrigation tank failed. One of the sets was employed at the Criminal Settlement at Bitragunta to determine the quantity of water available in the wells in the Settlement as a preliminary to consideration of the question of improving the water-supply. Another set was lent to the Hagari Agricultural Farm for a similar purpose. One of our sets was hired by Mr. Dennis Lewis, near Madi, South Kanara district, who was permitted by the Revenue Department to bale out water from the Madi river and as a result of the pumping he was able to irrigate 12 acres of sugarcane. He now intends putting up a pumping plant of his own. The ryots of the locality who have large areas of lands lying fallow, depending mainly on rains, were very much impressed with the usefulness of the pumping plants.

113. *Blasting operations.*—The torpedoing sets owned by the department are used for blasting boreholes in rocky strata in the hope of exposing the water sources in the fissures caused by the explosion. Torpedoing is only tried as a last resort when a bore through rock fails to yield water. The following table shows the number of applications for blasting registered and disposed of during the year in the several divisions:—

| Division.          | Applications pending on 1st April 1929. | Number registered during the year. | Number disposed of during the year. | Number pending on 1st April 1930. |
|--------------------|-----------------------------------------|------------------------------------|-------------------------------------|-----------------------------------|
| Bezwada .. .. .    | ..                                      | ..                                 | ..                                  | ..                                |
| Bellary .. .. .    | ..                                      | ..                                 | ..                                  | ..                                |
| Tanjore .. .. .    | 1                                       | 4                                  | 5                                   | ..                                |
| Coimbatore .. .. . | 2                                       | 4                                  | 6                                   | ..                                |
| Madras .. .. .     | ..                                      | ..                                 | ..                                  | ..                                |
| Total .. .. .      | 3                                       | 8                                  | 11                                  | ..                                |

*Air compressor.*—This machine is intended for the purpose of deepening wells by blasting operations in rocky strata. It was working in the well of Mr Hajee Abdur Rahim Sahib of Vaniambadi as an experimental measure and it improved the water-supply there.

114. *Sugarcane-crushing mills.*—The department is in possession of six sets of power-driven sugarcane-crushing mills which are hired to the public and the advantages of power-crushing of cane having been already demonstrated by the department, in several areas there was a good demand for the use of these mills by the sugarcane growers. In fact the demand exceeded the supply, and several applicants were disappointed. The monthly hire for a mill is Rs. 50 and for a combined mill and engine Rs. 100. Two mills with engines were lent for short periods during the year to M.R.Ry. B. Subbannachar of Kamalapur, Bellary district, and to M.R.Ry. K. R. Anantarama Ayyar of Kolumam, Coimbatore district, and one mill to M.R.Ry. K. G. Ramachandra Reddiyar of Kattuvaripalli, North Arcot district, and they were greatly benefited by their use. The lastnamed ryot contemplates purchasing a mill of his own. The other mills and engines were engaged during the year by the co-operative societies at Hospet, Chittawadigai, Kampli and Kamalapur in the Bellary district and the societies earned a good profit as they did in the previous year. In addition to these, one departmental engine was lent to the Pallapalaiyam Co-operative Industrial Society, Coimbatore district, to drive a 5-roller sugarcane mill of their own. Many ryots in and around Pallapalaiyam have realized the advantages of multiple furnaces demonstrated by the department and have also adopted them for boiling sugarcane juice and manufacturing jaggery more economically.

115. *Services rendered to co-operative societies.*—Assistance was rendered by the department to several co-operative societies on a variety of engineering matters. Under the rules for the levy of fees for work done by the engineering branch, co-operative societies are charged half the usual rates. The following are the instances of services rendered to co operative societies:—

(a) *Co-operative societies at Chintakunta, Muchikota and Kondapuram, Anantapur district.*—Attempted experimental cultivation with departmental pumping sets and successfully raised 72 acres of onions, chillies, ragi, jonna and groundnut. Encouraged by these results, the co-operative society at Kondapuram has already placed an order for a pumping plant of its own and the other two are contemplating a similar scheme.

(b) *Elukapad Co-operative Society, Bezwada.*—At the request of the Deputy Registrar of Co-operative Societies, Bezwada, a scheme for the formation of an irrigation society in Elukapad was investigated during the year.

(c) *Nalluripalem Co-operative Society.*—A hand-boring set was employed for putting down a boring for the society for drinking water-supply for the villagers. The boring was conducted up to 280 feet below ground level but as only salt water springs were tapped, the society stopped further boring and has applied for a power drill to conduct a deep boring.

(d) *Agricultural and Industrial Co-operative Society, Kallakurichi, South Arcot district.*—A pumping set was lent to the society for purposes of sugarcane crushing.

(e) *Udipi Co-operative Agricultural and Industrial Society, Kallianpur, South Kanara district.*—This society for which the department set up a sugarcane-crushing factory in 1927–28 worked for a period of 60 days during the cane-crushing season of 1929–30. Six hundred tons of cane were crushed from about 22 acres; 412 tons of juice were obtained and 60 tons of jaggery were manufactured therefrom. The society earned a gross income of Rs. 2,300 and a net profit of Rs. 1,300. There is every scope for improving the factory and earning an increased profit. Enquiries are being instituted in the South Kanara district and elsewhere with a view to the opening of similar sugarcane-crushing stations.

116. *Oil expeller and Pinto chekku.*—The experiments with the oil expeller and Pinto chekku, referred to in paragraphs 107 and 108 of last year's administration report, having been brought to a conclusion, the results were published in the form of a departmental bulletin entitled "Oil Milling Industry." The bulletin includes also a note by the Industrial Engineer, Madras, on the 'Oil Milling Industry in the Mysore Province'. The Co operative Agricultural and Industrial Society at Kallakurichi have applied for a loan under

the State Aid to Industries Act, with a view to purchasing the expeller and the roller mill and their application was under consideration at the close of the year. The demand for the Pinto chekku has been on the increase, 18 chekkus having been sold during the year, and there were orders on hand for 12 more at the end of the year.

117. *Subsidiary Industries for rice mills.*—At the instance of Government, a note on the subsidiary industries that can be pursued at the rice mills during the non-paddy season when these mills are kept idle was prepared and published in the form of a bulletin for the information of the public.

118. *Drawing office.*—This section attached to the Head office works under the direct supervision and control of the Industrial Engineer. Apart from its routine duties, both technical and general, the engineering section undertakes, on behalf of the ryots and the public, the purchase and supply of machinery from the local market and elsewhere. Inspection of machinery is made before placing orders, when necessary and wherever possible. During the year under review machinery to the value of Rs. 22,900 was purchased and supplied through the agency of the department. The following statement gives details of the machinery purchased. The absence of complaint from any of the purchasers shows the services of the department have been beneficial to the ryot population.

List of applicants for whom machinery was purchased and supplied during the year 1929-30.

| Number and name of applicant.                                                                       | Description of machinery purchased and supplied.                                                                                          | Value of machinery. | Remarks.               |
|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------------------|
|                                                                                                     |                                                                                                                                           | RS.                 |                        |
| 1. President, Union Board, Rayadrug, Bellary district.                                              | One 3 H.P. McCormick Deering oil-engine and one Myer's bore-hole pump.                                                                    | 850                 | ....                   |
| 2. Nookala Venkata Subbiah Garu, Appaiyarajupet near Reddipalli railway station, Cuddapah district. | One 6½ H.P. "M" class Ruston oil-engine and a 3-inch centrifugal pump.                                                                    | 1,600               | ....                   |
| 3. Karnam Kistappa Garu, Gonegondala, Kurnool district.                                             | One 10 H.P. "M" class oil-engine and 5 inches X 4 inches Pulsometer centrifugal pump, and one 'C' type Dandekar's groundnut decorticator. | 2,200               | ....                   |
| 4. Pendukur Venkappa Chetti, Hospet, Bellary district.                                              | One 20 H.P. "M" class engine and a No. 2-A Premier Flour Mill.                                                                            | 3,000               | ....                   |
| 5. Chindanur Subbarayappa Garu, Rayadrug, Bellary district.                                         | One 8 H.P. Petter oil-engine and 4 inches X 3 inches centrifugal pump.                                                                    | 1,700               | ....                   |
| 6. Rao Sahib, Murugesu Mudaliyar, Vepery, Madras.                                                   | Electric-driven motor pump (water system) service mains, etc.                                                                             | 900                 | For domestic purposes. |

List of applicants for whom machinery was purchased and supplied during the year 1929-30—cont.

| Number and name of applicant.                                                                     | Description of machinery purchased and supplied.                     | Value of machinery. | Remarks.                                                     |
|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|---------------------|--------------------------------------------------------------|
|                                                                                                   |                                                                      | RS.                 |                                                              |
| 7. M. C. Sanjeeva Reddi, Molagavalli district, Bellary                                            | One 28 H.P. Ruston cold starting oil-engine.                         | 3,800               | For driving cotton gins and decorticators already installed. |
| 8. Pattikonda Venganna Brothers, Hospet, Bellary district.                                        | One 22 H.P. Ruston cold starting oil-engine and 1½-inch Goulds pump. | 3,100               | Do.                                                          |
| 9. V. Chandrasekharam Pillai, Kattumannarkoil via Chidambaram, South Arcot district.              | One 2½ H.P. Ruston cold starting oil-engine.                         | 3,300               | For driving rice huller already installed.                   |
| 10. Narajara Swami Reddiar, Sri Maruthi Rice Mill, Aruppukottai, Ramnad district.                 | One groundnut decorticator.                                          | 450                 | This is an addition to the existing industrial plant.        |
| 11. P. Chinmaraya, President, Co-operative Society, Kondapuram via Tadapatri, Anantapur district. | One 7½ H.P. National oil-engine and 3-inch centrifugal pump.         | 2,000               | ....                                                         |
|                                                                                                   | Total ..                                                             | 22,900              |                                                              |

119. *Industrial Engineering Workshop.*—In the Departmental workshops located in Washermanpet, the machinery employed by the pumping, boring and other branches of the department is maintained and repaired. Work is also executed for private owners of compounded installations. Experimental work is being conducted and tests are carried out of new boring tools and departmental plant manufactured or repaired at the workshop. The workshop serves also as a training ground for the subordinates of the Engineering section, such as mechanics, drillers, boring maistris and drivers. A few apprentices are employed and they attend the evening classes in the Government Trades School at Madras to supplement their technical training by a theoretical course of study.

The following additional machinery sanctioned by Government in April 1928 and received from England about the close of the year 1928-29 was erected in the workshop during the year the line shafting in the workshop being extended by putting up additional stanchions:—

|                                       |    |    |    |    |   |
|---------------------------------------|----|----|----|----|---|
| Metal turning lathes                  | .. | .. | .. | .. | 2 |
| Wood turning lathe                    | .. | .. | .. | .. | 1 |
| Combined cutting and screwing machine | .. | .. | .. | .. | 1 |
| Power Hammer                          | .. | .. | .. | .. | 1 |

The work of manufacturing boring tools, etc., has been greatly facilitated by the use of this new machinery. The construction of the well in the compound of the workshop, with a metal tower over it, to facilitate the testing of pumps at different lifts was completed during the year. The work of extension of the present workshop building had not been commenced by the Public Works Department by the close of the year.

120. The value of work turned out in the workshops during the year amounted to Rs. 2,20,685-6-2 as against Rs. 1,66,869-12-11 in the previous year and the transactions yielded a net profit of Rs. 26,022-15-4. The number of work orders executed during the year was 443. The following table exhibits the number of jobs undertaken and executed for the various departments :—

| Department.                     | Number<br>of jobs. | Value.   |    |    |
|---------------------------------|--------------------|----------|----|----|
|                                 |                    | RS.      | A. | P. |
| Pumping and boring .. ..        | 275                | 1,99,944 | 8  | 4  |
| Inter-departments .. ..         | 20                 | 1,065    | 10 | 6  |
| Other Government departments .. | 8                  | 255      | 3  | 0  |
| Private parties .. ..           | 110                | 9,370    | 1  | 0  |
| Workshop maintenance .. ..      | 30                 | 10,049   | 15 | 4  |
| Total ..                        | 443                | 2,20,685 | 6  | 2  |

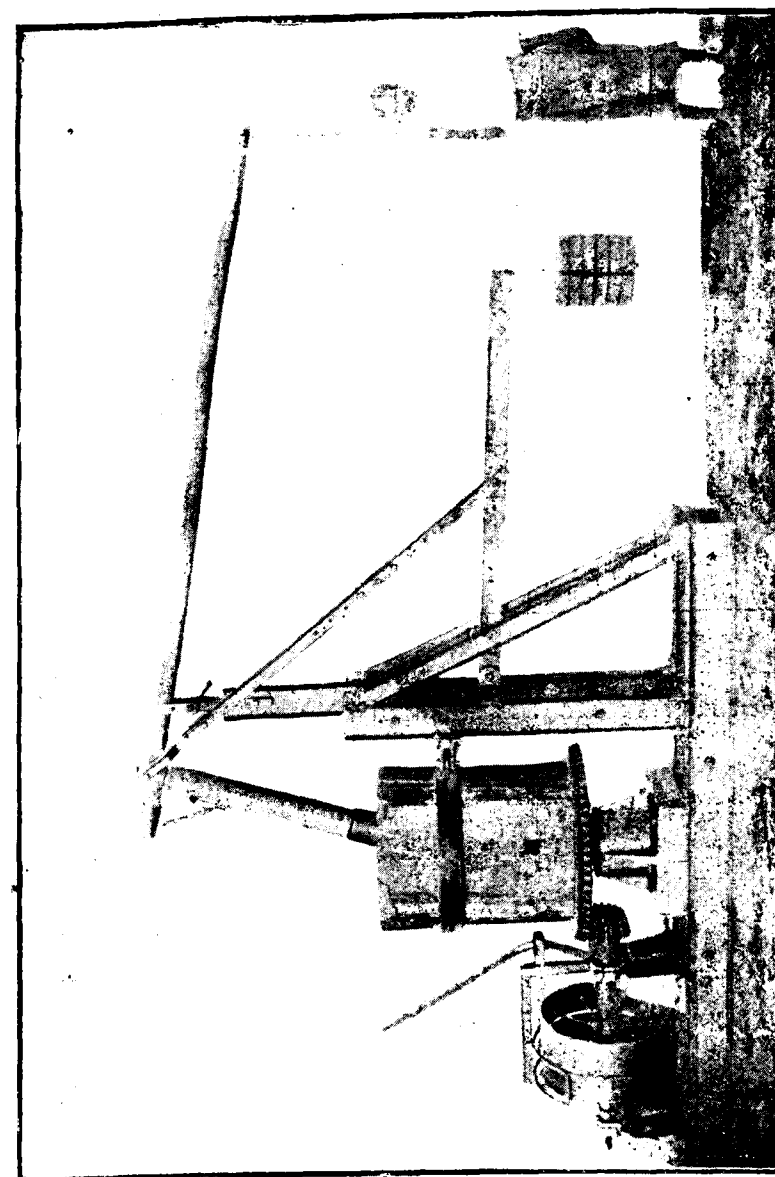
121. Among the more important items of work executed during the year, the following seem worth mentioning :—

(i) Eighteen Pinto chekkus were manufactured and sold during the year and there were orders on hand for twelve more sets.

(ii) The Pinto Water Lift (bullock driven), designed and manufactured at the departmental workshop, promises to be a useful and efficient appliance for lifting water. Trials so far conducted with this machine, show that while it has successfully dispensed with the 'backing up' of the bulls, an unsatisfactory feature of the country mhoite, it has also nearly double the capacity of the mhoite. Further trials are being made with a view to improving the lift before placing it on the market.

(iii) Experimental work in connection with the following was conducted during the year :—

(a) *Wing rotor*.—This novel appliance which is claimed to work satisfactorily even on low winds, is perhaps the first of its kind to be imported into this country. Experiments with this plant are still in progress with a view to determining its suitability for lifting water from small wells, for the irrigation of small plots of land.



PINTO CHEKKU.

Should these experiments prove successful, there is every likelihood of the wing rotor plant becoming highly popular with ryots and agriculturists of small means.

- (b) Wind mill.
- (c) Crushing of castor seeds in Pinto chekku.
- (d) Boulton Elevator.
- (iv) Eight Armstrong power drills were completely fitted, tested, equipped and sent out for district work.
- (v) Three Crude oil pumping sets and six high speed test engines were fitted on iron trolleys and sent out for district work.
- (vi) Eight bit dressing machines for sharpening bits for power drills were fitted up.
- (vii) One lamp black collecting machine was manufactured and supplied to the Government Industrial Institute, Madras.
- (viii) One twin cylinder compressed air receiver, received from the Fisheries Department was thoroughly examined and the necessary connections were made and tested with a power driven air compressor, the pressure which it could safely withstand them being determined and the result intimated to the Director of Fisheries.
- (ix) Boring tools and sets were manufactured and supplied to local boards, railways and also to His Exalted Highness the Nizam's Government.

The usefulness of the workshop can be further enhanced if power drills and silk reeling sets can be manufactured as is being done at present in the Mysore Industrial workshop. The Industrial Engineer and the Director visited the workshop to get information first hand the method followed by the Industries Department, Mysore, in this behalf. It is proposed to take action on the lines similar to those of Mysore.

122. *Receipts*.—The total receipts of the Engineering section of the department for the year under review amounted to Rs. 73,371-15-1 exclusive of fees for services rendered to other departments of Government as against Rs. 60,087-10-6 in the previous year showing an increase in receipts of Rs. 13,284-4-7. The value of services rendered to other Government departments in the various divisions was as follows:—

| Division.          | Value of services rendered. |    |    |
|--------------------|-----------------------------|----|----|
|                    | RS.                         | A  | P. |
| Bezwada .. .. .    | 1,911                       | 15 | 0  |
| Bellary .. .. .    | 2,236                       | 5  | 0  |
| Tanjore .. .. .    | 1,677                       | 6  | 0  |
| Coimbatore .. .. . | 3,914                       | 3  | 4  |
| Madras .. .. .     | 47                          | 8  | 0  |

## INDUSTRIAL EDUCATION.

123. Mr. W. Fyfe continued as Inspector of Industrial Schools during the year. He continued to act as Secretary to the Board of Visitors of the Government Industrial Institute, Madura, as Member of the Board of Examiners of the Government Fisheries Training Institute at Calicut and as official visitor to 11 Central Jails and the Senior Certified School at Chingleput.

124. *State Technical Scholars.*—Four State Technical scholarships were awarded during the year tenable in each case for a period of two years in the United Kingdom to the undermentioned candidates for the study of the subject specified against their names:—

| Serial number and name.            | Subject for the study of which the scholarship was awarded.                       |
|------------------------------------|-----------------------------------------------------------------------------------|
| 1. S. A. Saletore .. .. .          | Technology of oils and fats with practical training in the crushing of oil-seeds. |
| 2. A. Yoganandaswami .. ..         | Paper manufacture.                                                                |
| 3. M. S. Viswanathan .. ..         | Hydro-electric Engineering.                                                       |
| 4. Muhammad Ubaidullakhan Durrani. | Do.                                                                               |

The following Madras Technical Scholars were undergoing courses of training in the United Kingdom at the end of the year:—

| Serial number and name.       | Subject for the study of which the scholarship was awarded.                                                       |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------|
| 1. P. Govindakrishnayya .. .. | Electrical Engineering with special reference to Hydro-electric development.                                      |
| 2. V. N. Rangaswami .. ..     | Sanitary Engineering with practical training in the installation of up-to-date sanitary appliances.               |
| 3. Muhammad Abdul Quadir ..   | Textiles with special reference to hosiery.                                                                       |
| 4. A. Ramayya .. .. .         | Cement manufacture with practical training in large cement works followed by instruction in continuation classes. |

Scholars Nos. 1 and 2 have each been granted an extension of one year and No. 3 for two years. T. Venkajee, who returned in March 1930 after undergoing a course of training in paper manufacture has since secured an appointment as Paper Chemist in the Andhra Paper Mills, Ltd., Rajahmundry.

125. *Scholarship tenable at the Victoria Jubilee Technical Institute, Bombay.*—Three new scholarships were awarded during the year under review, one for textile manufacture, another for sanitary engineering and plumbing and a third for technical and applied chemistry. Five scholars completed their courses of study

during the year, one in electrical engineering, two in sanitary engineering and plumbing, one in textile manufacture and one technical and applied chemistry. The number of scholars under training at the end of the year was 11, distributed as under:—

|                                                  |   |
|--------------------------------------------------|---|
| Department of Technical and Applied Chemistry .. | 3 |
| Sanitary Engineering and Plumbing .. ..          | 6 |
| Department of Textile Manufacture .. ..          | 2 |

A sum of Rs. 3,200 was contributed by Government to the Institute during the year under review.

126. *Scholarship tenable at the Benares Hindu University.*—Government had accepted the recommendation of the Technical and Industrial Education Committee that the maximum number of scholarships tenable at the Victoria Jubilee Technical Institute, Bombay, at any one time should be fixed at 20 and that 'Electrical engineering' should be added to the list of subjects for the study of which scholarships are granted. Though only one scholarship was awarded in each of the years 1927 and 1928 for the study of this subject, the authorities of the Institute were unable to arrange for the training of this candidate. In view of this difficulty, it has been decided that the scholarships tenable at the Victoria Jubilee Technical Institute, Bombay, should be gradually reduced to 12, the scholarships thus released being utilized for the award of study of electrical engineering at the Engineering College of the Benares Hindu University subject to the condition that the scholarships current at any one time at these two places should not exceed the sanctioned number of 20 scholarships. The latter institution provides a comprehensive course of training in electrical engineering leading up to the B.Sc. degree of that University. Two scholarships were awarded during the year under review and the number of scholars under training in the institution at the end of the year was three.

127. *Post-graduate scholarships.*—Five new scholarships tenable at the Indian Institute of Science, Bangalore, were awarded during the year under review. Of these, two were admitted to the department of Electrical Technology, two to the Bio-Chemistry department and one to the General and Organic Chemistry department. There were 14 scholars undergoing training at the end of the year, of whom three were in the first year, six in the second year and five in the final year of study. The research scholarship formerly tenable at the Leather Trades Institute and held in abeyance owing to the uncertainty of the future of this institute was transferred to the Indian Institute of Science, thus increasing the maximum number of scholarships tenable at the latter institution from 14 to 15.

128. *Scholarships tenable at the Indian School of Mines, Dhanbad.*—Reference was made in paragraph 118 of the administration report of last year to the institution of a scholarship of the value

of Rs. 60 per mensem tenable for a period of four years at the Indian School of Mines, Dhanbad, to a student born and domiciled in the Madras Presidency. The second scholarship under this scheme was awarded during the year under review to a candidate of the Madras University for the study of Mining Engineering at the school.

129. *Scholarships at Jamshedpur Technical Institute.*—In accordance with the existing arrangement with the Tata Iron and Steel Company, the third batch of three students was selected during the year to undergo a combined theoretical and practical course extending over three years in the metallurgy of iron and steel at the Technical Institute attached to their works at Jamshedpur. The first batch of three students who were admitted into the institute in the year 1927 will complete their course of training towards the end of the year 1930. The contribution of Rs. 6,000 to the company was also continued during the year under review in return for the reservation, in their institute, of three seats every year for the admission of Madras students.

130. *Industrial scholarships.*—Sixty new scholarships tenable for a period of five years and ranging in value from Rs. 1-8-0 per mensem to Rs. 7-8-0 were, as usual, awarded with effect from 1st July 1929 to pupils learning trades in various recognized industrial schools and works classes. In accordance with the provisions of Chapter IX of the Code of Regulations a bonus of Rs. 38 each was granted to such of the pupils as had satisfactorily completed their course of study during the year.

#### MADRAS TRADES SCHOOL.

*Staff.*—Mr. N. M. Adyanthayya continued as Principal throughout the year.

131. *Admissions.*—The number of new admissions to the school during the year was 240 of which 25 students were admitted to the Mechanical section, 54 to the Electrical section, 27 to the Printing section and the remaining to the various other sections such as plumbing, wiring and vernacular drawing classes. The average number of classes held was 60 per week as against 55 in the previous year. The total strength of the school on the 31st March 1930 was 578 as against 566 in the previous year.

132. *Examination.*—During the year 89 students presented themselves for final examination in the various branches. Of these 7 qualified themselves in Mechanical Engineering, 3 in Electrical Engineering, 6 in Plumbing and Minor Sanitary Science and 27 in vernacular Drawing. The examinations were as usual conducted by outside examiners—Mr. A. H. Evans of Messrs. Massey & Co., Mr. A. Clay, Electrical Engineer, Madras and Southern Mahratta Railway, and Mr. M. K. Ranganatham, General Superintendent, Public

Works Workshop. The Electrical Wiring examination for competency certificates was conducted by Messrs. E. G. Bowers and D. Shaw. Out of the 45 students who presented themselves for these examinations, 30 passed, 12 being placed in the I class. The school continued to function as a centre for the examinations of the City and Guilds of London Institute. Seventy-five candidates from various parts of the Presidency appeared for these examinations of whom 38 passed and were awarded certificates.

133. *Improvements.*—With a view to render the instruction more effective and thorough and to maintain a better control over the apprentices and their attendance, the evening classes in Electrical and Mechanical Engineering were converted into day classes on what is termed "the Sandwich system" with the concurrence of the local firms. Under this system the pupils attend theoretical lectures at the school for one full day in the week instead of during the evenings as hitherto, while under the old system a student who attended four evening classes wasted several hours a week in journeying to and fro and also found it difficult to do any sustained brain work after a day's hard work at the factory. The introduction of "the Sandwich system" has resulted in an improvement in the working of the school as also an increase in the strength and the number of classes held per week.

134. *Scholarships.*—Government have during the year instituted 12 scholarships of the value of Rs. 20 each per mensem tenable for four years to deserving mufassal students subject to certain conditions. These scholarships will be available only to such pupils as would not but for such scholarships be able by reason of poverty to prosecute their training. Arrangements have also been made with a number of well-known firms for admitting a limited number of apprentices from the mufassal.

135. *Diplomas.*—Government have recognized the diplomas granted by the school as equivalent to those of the Victoria Jubilee Technical Institute, Bombay. Other things being equal, diploma holders in Mechanical Engineering will be eligible for employment as mechanics and supervisors in the department. It is understood that the majority of the students who have completed the Mechanical and Electrical Engineering courses have obtained suitable appointments on salaries ranging from Rs. 80 to Rs. 150 per mensem.

136. *The Preparatory section.*—The Preparatory section attached to the school completed its third year of existence. The first batch of 13 students were examined by Mr. R. K. Watson of the Madras and Southern Mahratta Railway Workshops and were admitted as apprentices into the Railway Workshops. The number of students on the rolls on 31st March 1930 was 90 as against 75 in the previous year.

This section which is still on a temporary basis, continued to function satisfactorily during the year. It is growing popular in that it meets the need of several youths who are unable to prosecute their studies beyond the elementary classes.

137. *General.*—The Engineering Students Association and the Printing Apprentices Association which have been formed in the school continued to function satisfactorily. The general tone and discipline of the school continued to be maintained at a high standard. His Excellency the Governor of Madras, who visited the school during the year and saw the various classes at work, was pleased to make the following note in the visitors' book :—

“ I visited the Trades School this morning and was greatly interested in all that I saw. Theoretical and practical instruction are combined here in an admirable manner and the students are given every opportunity to learn the trade that they wish to embark upon. The value of the training given is shown by the fact that all the past students have found jobs which were suitable to them. I hope that the school will continue to function as well in the future as it has done in the past and that more and more students will be equipped with the knowledge necessary for their success.”

138. *Perumbur Railway Branch School.*—This branch of the Madras Trades School which is attached to the Madras and Southern Mahratta Railway Workshops also continued to function satisfactorily during the year. The number of new admissions was 83 and the total strength of the school at the end of the year was 196. The final examinations were as usual conducted by the railway officials, Messrs. R. A. Dickinson and S. R. Suryanarayana Ayyar. Thirty-eight students presented themselves for examination, of whom 24 passed and were awarded certificates. The majority of the students who passed out of the school were absorbed by the Railway workshops. The question of increased accommodation is still engaging the attention of the Railway authorities. This scheme, it is understood, forms part of their larger scheme of reorganization of the workshops and may therefore take some considerable time to materialize.

#### GOVERNMENT INDUSTRIAL INSTITUTE, MADURA.

139. *Staff.*—M.R.Ry. Rao Sahib C. S. Ramachandra Ayyar continued as Superintendent throughout the year except for a period of one month from 2nd July to 1st August 1929 when he was on leave and M.R.Ry. V. Rama Rao, Assistant Superintendent, acted as Superintendent.

140. *Admissions.*—About 47 pupils applied for admission to the probationary class, 35 of whom were admitted. Of these, 26 probationers were ultimately, admitted nine having failed in the

examination held in December 1929. In addition a batch of five pupils were subsequently admitted as a special case, their fitness for the course having been proved. The strength of the Institute on the 1st October 1929 stood as follows :—

| Probationers. | First year. | Second year. | Third year. | Fourth year. | Fifth year. | Short course motor-driving. | Total. |
|---------------|-------------|--------------|-------------|--------------|-------------|-----------------------------|--------|
| 31            | 35          | 15           | 9           | 10           | 14          | 9                           | 123    |

It will be observed that the strength increased from 101 in the previous year to 123 during the current year notwithstanding the fact that owing to the strictness of the examination at the end of the year promotions to the higher classes were less numerous than in the previous years.

141. *Workshops.*—At the commencement of the year 45 orders which were booked in the previous year were pending execution. During the year under report 809 orders were booked of which 49 were carried over to the current financial year. Though there has been a general paucity of orders during the year under review the total output was higher than in the previous years except 1928-29. This is due to the fact that some of the orders of the Public Works Department previously booked and more than half executed in the previous year were completed during the year. If the training provided in the Institute is to be of real practical value to the outgoing apprentices it will be necessary to take steps to ensure a continual flow of suitable orders. This problem is now engaging the attention of Government. In this connexion, the following statement showing the distribution of orders from different sources and the value of the output during the past few years may be interesting :—

| Year.         | Government departments. | Municipalities and district boards. | Private firms and individuals. | Railways. | Total. |
|---------------|-------------------------|-------------------------------------|--------------------------------|-----------|--------|
|               | RS.                     | RS.                                 | RS.                            | RS.       | RS.    |
| 1923-24 .. .. | 5,400                   | 7,300                               | 17,000                         | ..        | 29,700 |
| 1924-25 .. .. | 4,000                   | 9,000                               | 21,000                         | ..        | 34,000 |
| 1925-26 .. .. | 6,123                   | 9,897                               | 21,344                         | ..        | 37,364 |
| 1926-27 .. .. | 3,788                   | 16,466                              | 22,048                         | ..        | 42,302 |
| 1927-28 .. .. | 16,899                  | 11,435                              | 13,993                         | ..        | 42,327 |
| 1928-29 .. .. | 62,255                  | 4,963                               | 9,631                          | 5,688     | 82,537 |
| 1929-30 .. .. | 33,614                  | 3,937                               | 21,769                         | 498       | 59,818 |

It will be observed that as in the previous year the value of the Public Works Department orders account for the major portion of the current year's output. Excluding these orders, the total output of

(3) The Alexander Girls' Industrial School, Ellore, West Godavari district.

(4) St. Brigets Industrial School for Girls, Nungambakkam, Madras.

During the year the recognition accorded to the following schools was withdrawn :—

(1) S.P.G. Lace School, Idayangudi, Tinnevely district.

(2) Do. Kudangulam do.

(3) The Salvation Army Boys' Industrial School, Perambur.

On the 31st March 1930 the total number of schools recognized by the department was 67. All these institutions except five were in receipt of grants in aid and all except one, temporarily closed on account of a local epidemic, were inspected by the Inspector of Industrial Schools during the year.

148. On the 31st of March 1930 there were 5,551 pupils under training in the recognized Industrial Schools of whom 1,488 were Indian Christians, 1,658 non-Brahman Hindus, 415 Depressed classes, 368 Muhammadans, 91 criminal tribes pupils, 319 Brahmans, 128 Europeans and Anglo-Indians and 14 others. A sum of Rs. 1,00,839-1-0 was distributed in the form of maintenance grant representing an average of Rs. 18-3-0 per pupil per annum for the Presidency as against Rs. 22-12-0 of the previous year. A further sum of Rs. 30,673-11-0 was distributed as equipment grant while a sum of Rs. 11,059 was distributed among four institutions as building grants. The position of the majority of these schools during the year was satisfactory. The state of a few of the more noteworthy institutions is briefly referred to below :—

(1) *The Ramakrishna Mission Industrial School.*—This institution which provides instruction in mechanical engineering and wood-work continued to make satisfactory progress during the year. No fees are levied from the boys and day boys are provided with one free meal at noon and the indigent are, in addition, provided with stationery and writing materials. Several articles of furniture and a model power driven lathe made in the workshop were exhibited at the exhibition organized in connexion with the Silver Jubilee of the Ramakrishna Home in February 1930 and the exhibits were much appreciated by the visitors.

With the opening of the fourth year course in mechanical engineering during the year and the development of the school it was found necessary to provide additional accommodation. Proposals for the extension of the workshop by the acquisition of a plot of land adjoining the school and erection of additional buildings at an estimated cost of Rs. 85,200 were approved by Government and a half grant promised.

1,00,839  
30,673  
11,059  
1,42,571

The management has established during the year a Board of Visitors consisting of prominent men connected with industry and trade with a view to advising the management on the efficient working of the institution.

(2) *The Madras Seva Sadan* is a Hindu institution maintained with the help of public subscriptions. It follows to some extent the methods adopted in Christian Mission institutions. It has grown out of a previously existing institution known as the Women's Home of Service and it provides training for grown up girls and young women in lace work, needle work, dress cutting, weaving, embroidery, jigna work, and rattan work, together with a general literary education designed to turn out sick nurses, midwives and teachers. The institution is managed by an influential executive committee, the Honorary Secretary and Treasurer being Mrs. Venkatasubba Rao, who devotes a considerable amount of time and energy to its affairs. The school is becoming very popular. The number of pupils on the rolls was 70 during the year and as the existing rented building was found insufficient to accommodate them, the management decided to provide for greater expansion of the work in larger and more suitable premises. They contemplate an expenditure of about a lakh on their building programme and Government have provided a sum of Rs. 25,000 in the budget for 1930-31 towards a building grant to this institution.

(3) *S.P.G. Industrial School, Nazareth.*—This is an old institution which for the last ten years has done excellent work under its present management. It is one of the largest of the aided schools and serves a wide area in the Tinnevely district, cabinet-making is a speciality in the school, the majority of the pupils being trained in this subject. It is understood that almost all the students who passed out of the institution during the last five years have secured well-paid employment, several of them in Railway works. A new section in motor mechanics' work has been added recently and there has been a substantial increase in the number on the roll. The furniture made in the school has a well-established reputation for design, durability and finish, and there is generally a few months work ahead on the order books. A building programme spread over several years is now about to be completed by the erection of a hostel at a cost of about Rs. 21,400, half the cost being covered by building grant.

(4) *The American Arcot Mission School, Palmaner.*—The girls attending the institution are given instruction in embroidery, dress making and needle work generally. The school continues to specialize in coloured cross stitch embroidery of a very fine type and there is a great demand for this work. Poultry farming, goat rearing and sericulture have recently been introduced as subsidiary industries

for those girls who are not particularly suitable for fine needle work. It is also proposed to add a pupil teacher's course to this school next year to train teachers of dress making and needle work as there is a great demand for properly qualified women for this work in both industrial schools and in domestic economy classes in literary schools. The hostel maintained by the school is unique of its kind. It is worked on the cottage family system, and provides an excellent form of home training.

(5) *Wesleyan Mission Industrial School, Ikkadu (Chingleput district)*.—The school provides instruction in lace making, hand and machine embroidery, and weaving. Instruction is also given in singing, physical exercise, reading and writing as optional subjects to such of those as desire to receive instruction in those subjects. The pupils are mainly women and girls, but a few men and boys are trained in the weaving section. The machine embroidery section is very popular with the pupils and to keep the designs up to date and as typical as possible of this country, pictorial representation of Indian life and scenes is freely resorted to and used in manufacture. Miss Tweddle who is in charge of the institution secures orders from far and near and seems to find no difficulty in disposing of the finished goods. Her efforts to raise the economic condition of the poorer people in the locality should appeal to those interested in rural uplift work. She has made serious attempts at some cost to manufacture glazed jugs and pottery and hopes in time to achieve a full measure of success although at present the work is still in the experimental stage. The management contemplates an extension to the existing building and a sum of Rs. 4,000 has been provided in the budget for 1930-31 for building grant for the school.

#### LEATHER TRADES INSTITUTE.

149. *Staff*.—Capt. A. Guthrie, M.B.E., V.D., Principal, was in charge of the Institute from the beginning of the year until the 10th February 1930 when he handed over charge to the Superintendent M.R.Ry. P. K. Rajamanikkam Nayudu. M.R.Ry. K. Seshachalam Chowdhury continued as Leather Research Chemist throughout the year.

150. The question of the future of the Leather Trades Institute had been under the consideration of Government for a considerable time, and in G.O. No. 147, Development, dated 23rd January 1930, final orders were passed in the matter. It was decided that the Instructional side of the Institute should be abandoned and that the tanning and dressing of leather for the Central Jail, Vellore, should be discontinued. For carrying out the functions of the Institute as a centre for the provision of general advice, research and practical guidance to tanners and for the conduct of analysis of bark, water,

effluent, chrome, lime liquor, etc., and of analysis of skins and hides intended for export with a view to detecting adulteration by the use of epsom salts and other dopes, it was decided that the Leather Trades Institute should be continued under its present name. It has also been laid down that the staff of the Institute should maintain close touch with research in the sphere of leather technology in Europe and America and test the results arrived at in those countries under conditions obtaining in Madras so that the benefit of the work that is being done in the more industrially advanced countries may be extended to tanners in a form which they can assimilate. In the tannery attached to the Institute practical experiments will continue to be carried out from time to time with a view to improving the quality of the existing classes of leather and of cheapening the present cost of tannage. One of the duties of the staff, under the new arrangement, will be periodically to visit tanneries in the mufassal with a view to correct irregularities and adulteration, to demonstrate to the tanners on the spot the advantages of improved methods and to give advice in cases where difficulties in actual tanning processes arise. The Institute has been placed in charge of the former Vice-Principal whose designation has been altered to 'Superintendent of the Leather Trades Institute'. The Superintendent is assisted by the Leather Research Chemist who is also employed by the Director on investigations into such industrial chemical problems as call for investigation. Mr. Guthrie has been placed on special duty under the designation of 'Officer on Special Duty' to study in detail the problem of eradicating stains on tanned skins which manufacturers abroad have tried in vain to remove, and which it was now thought may be due to something in the tanning processes employed in India. Mr. Guthrie will deal with this problem exclusively with a view to arriving at its solution.

151. *Past students*.—Five of the past students secured appointments as tanners in Ceylon, Calcutta, Madras, Chromepet and Trichinopoly.

152. *Manufacturing operations*.—The Institute supplied 6,000 lb. of russet leather and 10,200 lb. of bark tanned soles to the Central Jail, Vellore. About 600 lb. greased leather (for pump buckets) were supplied to the Mettur project. A certain amount of leather was finished for the trade and a few Shikari trophies were tanned for private customers. A number of kavalai hides were also made and sold to local ryots.

153. *Miscellaneous work for the trade*.—The following are a few instances of assistance and advice rendered to the trade by the Institute during the year:—

(i) A firm in North India was supplied with information as to the process of pickling and in regard to the manufacture of glaze kid.

(ii) A firm in Calcutta was instructed how to overcome the difficulties met with in the tannery and the services of a past student of the Institute were secured for it and he was given instructions by the Principal, Leather Trades Institute, before joining duty.

(iii) A tanner in Northern India was supplied with information in regard to the manufacture of chrome leather.

(iv) Experiments were conducted in the research laboratory with reference to the suitability of acid resisting fire bricks for a chrome liquor plant.

(v) A tanner in Ceylon was furnished with details of the prices of aldehyde tanning.

(vi) A South Indian tanner was informed of the action of formaline on skins.

The Principal visited a few tanneries in Bangalore, Vaniyambadi, Trichinopoly and Dindigul and solved the difficulties they were experiencing in regard to the presence of stains on their prime tanned skins. They were also advised of a method of getting rid of their tannery effluent. The Superintendent visited a tannery at Tiruvotthiyur at the request of the proprietor who had experienced difficulty in regard to the discoloration of skins in the deliming pits. Suggestions were given as to how the difficulty could be overcome and the tanner was satisfied with the results. A number of local tanneries were visited and the tannery waters and tanning liquors obtained from them were tested in the laboratory. A number of tanners were supplied with a solution for testing adulteration with instructions how to use it and there has been a great demand for this solution.

154. *Leather Research Chemist*.—The activities of the Leather Research Chemist during the year are summarised below :—

In addition to the conduct of research work, he carried out 209 analyses, 130 of which were of water, 43 of tanning materials, 19 of leather, 2 of oil and 15 of miscellaneous things such as chrome liquors, acids and the like.

Of the 130 samples of water analysed, 90 were in connexion with the Bellary underground water survey, 16 from coconut husk soaking centres, and four from tanneries; samples of water from the Kolab river were analysed for the Hydro-electric Engineer and the Executive Engineer respectively. Of the 43 tanning materials analysed at the laboratory, 18 represented samples of babool pods from the Forest College, Coimbatore, six samples of avaram bark partly grown in the Institute compound and partly obtained from the Forest department and 19 were from tanners.

155. *General chemical work*.—The more important of the items of general chemical work carried out by the Leather Research Chemist in the laboratory are mentioned below :—

(i) The water used by the Salem Dye Works Syndicate was found to give uneven dyeing and it was analysed. Methods of softening the water were suggested to the party together with the cost of softening plants.

(ii) A firm in Mangalore consulted the department in regard to the preparation of bath bricks from fine sand. Several experiments were carried out in the laboratory and finally bricks of a satisfactory quality were made and supplied. A set of dies were also made for it in accordance with the instructions of the Leather Research Chemist.

(iii) A short outline of the process of manufacturing stiff, mixed distemper paints and dry colours by manual labour and of extracting white lead from white barytes was given to a firm.

(iv) A firm was furnished with information as to the uses of crude tar.

(v) A short summary of the different processes in the mercerising of cotton fibre was supplied to an enquirer.

(vi) An analysis was made of a sample of water supplied by a colour and yarn merchant of Madras and a report was sent regarding its suitability for dyeing purposes.

(vii) Information as to whether a sample of water sent by a firm would be suitable for watering plants was furnished.

(viii) Information as to the process of manufacture of cabinet paper was furnished to an enquirer.

(ix) The suitability of a sample of pungam oil prepared from pungam seeds for use in tanneries was examined by conducting an analysis of the sample along with a sample of the same oil from the local bazaar.

(x) The systematic study of South Indian myrabolams was published during the year as Bulletin No. 28 of the Department of Industries—'South Indian Myrabolams—A study'.

(xi) *Hopea parviflora*.—The work on this material was published as Bulletin No. 27 of the Department of Industries—'Bark of *Hopea parviflora* as a tanning material'.

(xii) *Terminalia pallida*.—The study of this material was completed and prepared for publication.

(xiii) In G.O. Mis. No. 1188, Development, dated 11th July 1929, Government sanctioned the conduct of certain experiments with a view to improving the methods adopted in the manufacture of hand-made paper. The details are mentioned in another portion of the report under the head 'Experiments'.

(xiv) The conduct by the Leather Research Chemist of experiments on coir retting at Topputurai in Tanjore district has also been referred to elsewhere in this report.

#### SCHOOLS OF ARTS AND CRAFTS.

156. *Staff*.—M.R.Ry. Rao Bahadur N. R. Balakrishna Mudaliyar, the permanent Superintendent, was on leave for six months from May to October 1929 and during his absence M.R.Ry. D. P. Roy Chowdhury, Assistant Superintendent, acted as Superintendent and M.R.Ry. C. R. Narayanaswami Nayudu as Assistant Superintendent from 5th September 1929 to 21st October 1929 when the latter retired from service. With effect from the date of the Superintendent's return from leave on 1st November 1929 a temporary post of Joint Superintendent was created, the post of Assistant Superintendent being kept in abeyance. M.R.Ry. D. P. Roy Chowdhury held this post.

157. *Strength and attendance*.—The number of pupils on the rolls on 31st March 1930 was 315 of whom 24 were females. The average attendance during the year under report was 216 made up of 209 male and 7 female pupils and the average number on the rolls was 409 which was made up of 390 male pupils and 19 female pupils. The figures for the three previous years were:—

| Year.   | Average number on the rolls. | Average attendance. |
|---------|------------------------------|---------------------|
| 1926-27 | 533                          | 281                 |
| 1927-28 | 498                          | 261                 |
| 1928-29 | 516                          | 269                 |

The fall in the average number on the rolls and the average attendance during the year 1929-30 was due to the stoppage of admission in the latter part of the year, the removal of pupils who had been in the school for over five years and the abolition of part-time classes.

158. *Financial statement*.—The expenditure for the year amounted to Rs. 59,612-14-10 as against Rs. 59,881-13-0 in the previous year. The receipts from sales fell considerably as compared with the previous year as will be seen from the following statement:—

| Year.   | Receipts.   |
|---------|-------------|
|         | Rs. A. P.   |
| 1927-28 | 11,379 9 0  |
| 1928-29 | 17,113 15 0 |
| 1929-30 | 6,385 2 0   |

The accounts of the school were, as usual, audited by an auditor from the office of the Accountant-General, Madras.

159. *Library and Museum*.—The total number of volumes in the library on 31st March 1930 was 2,104 exclusive of periodicals, journals and magazines. A number of plates and books pertaining to arts belonging to the Dhanakoti Mudaliyar's library were transferred to the school from the library attached to the head office. The library is made much use of by the pupils and teachers and is also resorted to by some members of the public interested in art. Steps are being taken to dispose of such of the art specimens as are not needed for school use, in accordance with the recommendation of the School of Arts Reorganization Committee.

160. *Examinations*.—The results of the various Government Technical examinations during the year are shown below with figures in respect of the two preceding years for purposes of comparison:—

| Year.   | Number appeared. | Number passed. | Percentage. |
|---------|------------------|----------------|-------------|
| 1927-28 | 142              | 112            | 79          |
| 1928-29 | 178              | 141            | 80          |
| 1929-30 | 177              | 122            | 69          |

161. *Board of Visitors*.—None of the official visitors appointed by Government visited the school during the year.

162. *Reorganization Committee*.—The Committee appointed by Government to submit proposals for the reorganization of the school submitted its report in April 1929 and the Government passed orders thereon in G.O. No. 1856, Development, dated 30th October 1929. The Government accepted the recommendations of the Committee laying down qualifications for admission to the school, fixing the age limit of pupils for admission, permitting admission to the school only during the first week after the re-opening of a new session, and restricting the total strength of all classes to 361. These recommendations have been given effect to. Fine Arts classes in painting and modelling have been started under the supervision of the Joint Superintendent. The other recommendations of the Committee in regard to the sale of unserviceable articles in the museum, retrenchment in the staff, and transfer of the carpet-weaving section were still under consideration at the close of the year.

#### RECEIPTS AND EXPENDITURE.

163. The following statement compares the receipts and expenditure of the department during the years 1928-29 and 1929-30. Details are exhibited in Appendix IV:—

| Item.          | 1928-29.  | 1929-30.  | Increase or decrease. |
|----------------|-----------|-----------|-----------------------|
|                | Rs.       | Rs.       | Rs.                   |
| Expenditure .. | 13,84,450 | 18,60,054 | 4,75,604 increase.    |
| Receipts ..    | 1,36,036  | 1,40,413  | 4,377 increase.       |
| Net cost ..    | 12,48,414 | 17,19,641 | 4,71,227 increase.    |

There has been an increase in expenditure and in receipts as well as in the net cost of the department. The following items contributed mainly to the increase in receipts:—

|                                                           | RS.    |
|-----------------------------------------------------------|--------|
| (1) Receipts from Industrial schools .. ..                | 1,800  |
| (2) Pumping and boring receipts .. ..                     | 13,400 |
| (3) Other receipts and recoveries of overpayments ..      | 4,600  |
| (4) Sugarcane crushing plant receipts .. ..               | 900    |
| (5) Profits from Government commercial undertakings .. .. | 10,700 |
| (6) Refunds .. ..                                         | 700    |

This increase was set off to the extent of about Rs. 26,700 by a fall in the receipts under

|                                                                            |        |
|----------------------------------------------------------------------------|--------|
| (1) Textiles .. ..                                                         | 6,200  |
| (2) School of Arts and Crafts .. ..                                        | 12,800 |
| (3) Industrial installations from Government commercial undertakings .. .. | 1,000  |

The increase under expenditure was chiefly under District Engineering Rs. 64,000 owing to a re-appropriation of Rs. 70,000 being sanctioned during the year to meet the carry over in the workshops of certain items of works relating to District Engineering branch.

iii. Industrial schools—Grants-in-aid—Rs. 1,70,400 owing to the building grant of Rs. 2 lakhs paid to the School for the Blind, Madras,

v. Industrial schools—Rs. 33,000 consequent on the opening up of new schools at Calicut and Bellary,

vi. Trades schools—Rs. 34,000 consequent on the opening up of a new school at Mangalore,

ix. Textile Institute—Rs. 4,000,

x. Sericulture—Rs. 2,000, and

xii. Miscellaneous—Rs. 3,91,500 due to the additional appropriation of Rs. 3,87,136 being the amount written off as irrecoverable of the loans granted to the Carnatic Paper Mills, Limited, under the State Aid to Industries Act. The increase in the expenditure was partly set off by a decrease in expenditure under (i) Direction, (iii) Scholarships, (vii) Leather Trades Institute, Expenditure in England and Losses on Government commercial undertakings.

164. *Programme of work for 1930-31.*—

#### INDUSTRIAL ENGINEERING SECTION.

- (1) Actual field test with wing rotor in Chittoor district.
- (2) Tests with Pinto water-lift.

#### TEXTILE SECTION.

(1) Inspection of aided weaving schools by officers of the Textile branch and the rendering of the practical assistance to them.

(2) Assisting the Research Engineer in the evolution of improved textile labour saving appliances.

(3) Undertaking erection and initial working of small units of power-driven plants for weavers' co-operative societies or private capitalists and training of hands to run the plant.

(4) Giving effect to such of the recommendations of the Textile Advisory Committee as are approved and sanctioned by Government from time to time.

#### SERICULTURAL SECTION.

*Kollegal.*—(1) Opening of at least two more aided grainages.

(2) Increasing the number of domestic basins from 5 to 10.

(3) Inducing one more capitalist to open out a filature of 20 to 40 basins.

*Coonoor Farm.*—(1) Eradication of fungus disease completely.

(2) Continuation of hybridisation work.

(3) Collection of statistics with regard to the yield of mulberry leaves with manuring and cultivation.

*Hosur Farm.*—Production of seed cocoons on a large scale.

*District Sericultural Work.*—Installation of a silk reeling machine for each centre and extension of mulberry plantation and selection of more suitable centres.

#### INDUSTRIAL EDUCATION SECTION.

1. Establishment of new Government schools at Rajahmundry or preferably Guntur and Berhampur.

2. Introduction of a separate Sanitary Engineering course in the Madras Trades School.

3. Increase in the number of aided schools.

# APPENDIX I

Statistics relating to Industrial Schools for 1929-30.

| District.                | Name of the institution.                    | Boys<br>or<br>girls.  | Number on<br>rolls on<br>31st March |       | Drawing. | Mechanical engi-<br>neering. |            |                | Civil engineering. | Draughtsman course. | Carpentry, cabinet-<br>making and<br>wood work. | Metal work. | Weav-<br>ing.         |                      | Needle crafts. |         |              | Agriculture and allied<br>trades. | Oil-engine driving. |             |
|--------------------------|---------------------------------------------|-----------------------|-------------------------------------|-------|----------|------------------------------|------------|----------------|--------------------|---------------------|-------------------------------------------------|-------------|-----------------------|----------------------|----------------|---------|--------------|-----------------------------------|---------------------|-------------|
|                          |                                             |                       | 1929.                               | 1930. |          | Freehand out-<br>line.       | Technical. | Fitter's work. |                    |                     |                                                 |             | Blacksmith's<br>work. | Other bran-<br>ches. | Cotton.        | Carpet. | Lace-making. |                                   |                     | Embroidery. |
| (1)                      | (2)                                         | (3)                   | (4)                                 | (5)   | (6)      | (7)                          | (8)        | (9)            | (10)               | (11)                | (12)                                            | (13)        | (14)                  | (15)                 | (16)           | (17)    | (18)         | (19)                              | (20)                | (21)        |
| GOVERNMENT INSTITUTIONS. |                                             |                       |                                     |       |          |                              |            |                |                    |                     |                                                 |             |                       |                      |                |         |              |                                   |                     |             |
| Madura ..                | Government Industrial<br>Institute, Madura. | Boys.                 | 74                                  | 98    | ..       | ..                           | ..         | ..             | ..                 | ..                  | ..                                              | 7           | 83                    | ..                   | ..             | ..      | ..           | ..                                | ..                  | ..          |
| Madras ..                | Leather Trades Institute,<br>Madras.        | Do.                   | 5                                   | ..    | ..       | ..                           | ..         | ..             | ..                 | ..                  | ..                                              | ..          | ..                    | ..                   | ..             | ..      | ..           | ..                                | ..                  | ..          |
| Do. ..                   | School of Arts and Crafts,<br>Madras.       | Boys<br>and<br>girls. | 501                                 | 315   | 85       | ..                           | ..         | ..             | ..                 | ..                  | ..                                              | 103         | 27                    | 5                    | ..             | ..      | ..           | ..                                | ..                  | ..          |
| Do. ..                   | Government Trades School,<br>Madras.        | Boys.                 | 811                                 | 863   | ..       | 109                          | ..         | ..             | 106                | ..                  | ..                                              | ..          | ..                    | ..                   | ..             | ..      | ..           | ..                                | ..                  | ..          |
| Do. ..                   | Government Textile Insti-<br>tute, Madras.  | Do.                   | 52                                  | 56    | ..       | ..                           | ..         | ..             | ..                 | ..                  | ..                                              | ..          | 56                    | ..                   | ..             | ..      | ..           | ..                                | ..                  | ..          |
| Belary ..                | Government Industrial<br>School, Belary.    | Do                    | ..                                  | 22    | ..       | ..                           | ..         | ..             | 10                 | ..                  | ..                                              | 12          | ..                    | ..                   | ..             | ..      | ..           | ..                                | ..                  | ..          |
| Malabar ..               | Government Industrial<br>School, Calicut.   | Do.                   | ..                                  | 55    | ..       | ..                           | ..         | 16             | ..                 | ..                  | ..                                              | 25          | ..                    | ..                   | ..             | ..      | ..           | ..                                | ..                  | ..          |
| South Kanara.            | Government Trades School,<br>Mangalore.     | Do.                   | ..                                  | 75    | ..       | ..                           | ..         | ..             | 24                 | ..                  | ..                                              | 16          | ..                    | ..                   | ..             | ..      | ..           | ..                                | ..                  | ..          |
|                          | Total ..                                    |                       | 1,473                               | 1,484 | 85       | 109                          | ..         | 16             | 140                | ..                  | ..                                              | 163         | 110                   | 56                   | 5              | ..      | ..           | ..                                | ..                  | ..          |

# APPENDIX I—cont.

Statistics relating to Industrial Schools for 1929-30—cont.

| District.     | Name of the institution.                 | (22)         | (23)                                 | (24)                                | (25)        | (26)           | (27)                              | (28)             | (29)                 | (30)       | (31)               | (32)                          | (33)              | (34)         | (35)              | (36)                        | (37)                  | (38)                    | (39)                  | (40)                              | (41)         |
|---------------|------------------------------------------|--------------|--------------------------------------|-------------------------------------|-------------|----------------|-----------------------------------|------------------|----------------------|------------|--------------------|-------------------------------|-------------------|--------------|-------------------|-----------------------------|-----------------------|-------------------------|-----------------------|-----------------------------------|--------------|
|               |                                          | Rattan work. | Plumbing and minor sanitary science. | Motor-car driving and repairs work. | Mat making. | Basket-making. | Chemistry of leather manufacture. | Electric wiring. | Railway apprentices. | Engraving. | General education. | Scientific instrument-making. | Goldsmith's work. | Lacquer work | Special painting. | Printing and allied trades. | Boot and shoe-making. | Electrical engineering. | Probationer's course. | Preparatory Trades School course. | Sericulture. |
|               | GOVERNMENT INSTITUTIONS—<br><i>cont.</i> |              |                                      | 8                                   |             |                | 5                                 |                  |                      |            |                    |                               |                   |              |                   |                             |                       |                         |                       |                                   |              |
| Madura ..     | Government Industrial Institute, Madura. | ..           | ..                                   | ..                                  | ..          | ..             | ..                                | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..           | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Madras ..     | Leather Trades Institute, Madras.        | ..           | ..                                   | ..                                  | ..          | ..             | ..                                | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..           | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Do. ..        | School of Arts and Crafts, Madras.       | ..           | ..                                   | ..                                  | ..          | ..             | ..                                | ..               | ..                   | 61         | ..                 | ..                            | 20                | ..           | 14                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Do. ..        | Government Trades School, Madras.        | ..           | 35                                   | ..                                  | ..          | ..             | ..                                | 80               | 195                  | ..         | ..                 | ..                            | ..                | ..           | ..                | 93                          | ..                    | 155                     | ..                    | 90                                | ..           |
| Do. ..        | Government Textile Institute, Madras.    | ..           | ..                                   | ..                                  | ..          | ..             | ..                                | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..           | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Belary ..     | Government Industrial School, Belary.    | ..           | ..                                   | ..                                  | ..          | ..             | ..                                | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..           | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Malabar ..    | Government Industrial School, Calicut.   | ..           | ..                                   | 14                                  | ..          | ..             | ..                                | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..           | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| South Kanara. | Government Trades School, Mangalore.     | ..           | ..                                   | 35                                  | ..          | ..             | ..                                | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..           | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
|               | Total ..                                 | ..           | 35                                   | 57                                  | ..          | ..             | 5                                 | 80               | 195                  | 61         | ..                 | ..                            | 20                | ..           | 14                | 93                          | ..                    | 155                     | ..                    | 90                                | ..           |

**APPENDIX I—cont.**  
Statistics relating to Industrial Schools for 1929-30—cont.

| District.           | Name of the institution.                              | Boys<br>or<br>girls. | N number on<br>rolls on<br>31st March |       | Draw-<br>ing. | Mechanical engi-<br>neering. |            |                | Civil engineering. | Draughtsman course. | Carpentry, cabinet-<br>making and general<br>wood work. | Metal work. | Weav-<br>ing. | Needle crafts.        |                      |         | Agriculture and allied<br>trades. | Oil-engine driving. |         |             |
|---------------------|-------------------------------------------------------|----------------------|---------------------------------------|-------|---------------|------------------------------|------------|----------------|--------------------|---------------------|---------------------------------------------------------|-------------|---------------|-----------------------|----------------------|---------|-----------------------------------|---------------------|---------|-------------|
|                     |                                                       |                      | 1929.                                 | 1930. |               | Freehand out-<br>line.       | Technical. | Fitter's work. |                    |                     |                                                         |             |               | Blacksmith's<br>work. | Other bran-<br>ches. | Cotton. |                                   |                     | Carpet. | Lace-making |
| (1)                 | (2)                                                   | (3)                  | (4)                                   | (5)   | (6)           | (7)                          | (8)        | (9)            | (10)               | (11)                | (12)                                                    | (13)        | (14)          | (15)                  | (16)                 | (17)    | (18)                              | (19)                | (20)    | (21)        |
| AIDED INSTITUTIONS. |                                                       |                      |                                       |       |               |                              |            |                |                    |                     |                                                         |             |               |                       |                      |         |                                   |                     |         |             |
| Trichinopoly.       | St. Joseph's Industrial<br>School, Trichinopoly.      | Boys.                | 47                                    | 53    | ..            | ..                           | 24         | ..             | ..                 | ..                  | ..                                                      | 29          | ..            | ..                    | ..                   | ..      | ..                                | ..                  | ..      | ..          |
| Madras ..           | C.N.T. Institute, Vepery,<br>Madras.                  | Do.                  | 317                                   | 328   | ..            | 98                           | 37         | ..             | 80                 | ..                  | ..                                                      | 44          | 14            | ..                    | ..                   | ..      | ..                                | ..                  | ..      | 10          |
| Trichinopoly.       | Wesleyan Mission Industrial<br>School, Karur.         | Do.                  | 65                                    | 88    | ..            | ..                           | ..         | 11             | ..                 | ..                  | ..                                                      | 51          | ..            | 20                    | ..                   | ..      | ..                                | ..                  | ..      | ..          |
| South Arcot ..      | St. Joseph's Industrial<br>School, Tindivanam.        | Do.                  | 76                                    | 83    | ..            | ..                           | ..         | 4              | ..                 | ..                  | ..                                                      | 79          | ..            | ..                    | ..                   | ..      | ..                                | ..                  | ..      | ..          |
| Madras ..           | The Annam Industrial<br>School, Madras.               | Do.                  | 100                                   | 99    | ..            | ..                           | ..         | ..             | ..                 | ..                  | ..                                                      | 81          | ..            | ..                    | 10                   | ..      | ..                                | 8                   | ..      | ..          |
| North Arcot ..      | A.A.M. Industrial School,<br>Katpadi.                 | Do.                  | 141                                   | 102   | ..            | ..                           | ..         | 3              | ..                 | ..                  | ..                                                      | 93          | ..            | ..                    | ..                   | ..      | ..                                | ..                  | ..      | ..          |
| Coimbatore ..       | St. Joseph's Industrial<br>School, Coimbatore.        | Do.                  | 157                                   | 159   | ..            | ..                           | 41         | ..             | ..                 | ..                  | ..                                                      | 118         | ..            | ..                    | ..                   | ..      | ..                                | ..                  | ..      | ..          |
| Tanjore ..          | St. Francis Xavier's Indus-<br>trial School, Tanjore. | Do                   | 83                                    | 99    | ..            | ..                           | ..         | ..             | ..                 | ..                  | ..                                                      | 57          | ..            | 42                    | ..                   | ..      | ..                                | ..                  | ..      | ..          |
| Tinnevely ..        | S.P.G. Art Industrial School,<br>Nazareth.            | Do.                  | 88                                    | 107   | ..            | ..                           | ..         | 6              | ..                 | ..                  | ..                                                      | 82          | ..            | 14                    | ..                   | ..      | ..                                | 2                   | ..      | ..          |
| Vizagapatam ..      | St. Aloysius' Industrial<br>School, Vizagapatam.      | Do.                  | 17                                    | 15    | ..            | ..                           | ..         | ..             | ..                 | ..                  | ..                                                      | ..          | ..            | ..                    | ..                   | ..      | ..                                | ..                  | ..      | ..          |
| Kurnool ..          | Cole's Vocational Middle<br>School, Kurnool.          | Do.                  | 45                                    | 49    | ..            | ..                           | ..         | ..             | ..                 | ..                  | ..                                                      | ..          | ..            | 49                    | ..                   | ..      | ..                                | ..                  | ..      | ..          |
| Trichinopoly ..     | All Saints Industrial School,<br>Puthur.              | Do.                  | 34                                    | 41    | ..            | ..                           | ..         | 16             | ..                 | ..                  | ..                                                      | 21          | ..            | ..                    | ..                   | ..      | ..                                | ..                  | ..      | ..          |

**APPENDIX I—cont.**  
Statistics relating to Industrial Schools for 1929-30—cont.

| District. | Name of the institution. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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**APPENDIX I—cont.**  
Statistics relating to Industrial Schools for 1929-30—cont.

| District.                | Name of the institution.                                           | Boys<br>or<br>girls.  | Number on<br>rolls on<br>31st March |       | Draw-<br>ing. | Mechanical engi-<br>neering. |                       | Civil engineering. | Draughtsman course. | Carpentry, cabinet-<br>making and<br>wood work. | Metal work. | Weav-<br>ing.        |         | Needle crafts. |              | Agriculture and allied<br>trades. | Oil-engine driving. |             |                                                               |      |
|--------------------------|--------------------------------------------------------------------|-----------------------|-------------------------------------|-------|---------------|------------------------------|-----------------------|--------------------|---------------------|-------------------------------------------------|-------------|----------------------|---------|----------------|--------------|-----------------------------------|---------------------|-------------|---------------------------------------------------------------|------|
|                          |                                                                    |                       | 1929.                               | 1930. |               | Fitter's work                | Blacksmith's<br>work. |                    |                     |                                                 |             | Other bran-<br>ches. | Cotton. | Carpet.        | Lace-making. |                                   |                     | Embroidery. | Other bran-<br>ches, such as<br>dress-making,<br>sewing, etc. |      |
| (1)                      | (2)                                                                | (3)                   | (4)                                 | (5)   | (6)           | (7)                          | (8)                   | (9)                | (10)                | (11)                                            | (12)        | (13)                 | (14)    | (15)           | (16)         | (17)                              | (18)                | (19)        | (20)                                                          | (21) |
| AIDED INSTITUTIONS—cont. |                                                                    |                       |                                     |       |               |                              |                       |                    |                     |                                                 |             |                      |         |                |              |                                   |                     |             |                                                               |      |
| Tanjore ..               | St. Mary's Industrial School,<br>Kumbakonam.                       | Boys.                 | 65                                  | 70    | ..            | ..                           | 11                    | ..                 | ..                  | 59                                              | ..          | ..                   | ..      | ..             | ..           | ..                                | ..                  | ..          | ..                                                            | ..   |
| North Arcot ..           | The Anjuman Industrial<br>School, Vellore.                         | Do.                   | 61                                  | 55    | ..            | ..                           | ..                    | ..                 | ..                  | 55                                              | ..          | ..                   | ..      | ..             | ..           | ..                                | ..                  | ..          | ..                                                            | ..   |
| Chingleput ..            | T. F. C. M. Agricultural<br>School, Melrosapuram.                  | Do.                   | 53                                  | 64    | ..            | ..                           | ..                    | ..                 | ..                  | ..                                              | ..          | ..                   | ..      | ..             | ..           | ..                                | ..                  | ..          | 64                                                            | ..   |
| South Arcot ..           | Danish Mission Industrial<br>School, Panruti.                      | Do.                   | 104                                 | 103   | ..            | ..                           | ..                    | ..                 | ..                  | 68                                              | ..          | 35                   | ..      | ..             | ..           | ..                                | ..                  | ..          | ..                                                            | ..   |
| Chingleput ..            | A. J. M. Industrial School,<br>Saidapet.                           | Do.                   | 24                                  | 18    | ..            | ..                           | ..                    | ..                 | ..                  | 10                                              | ..          | ..                   | ..      | ..             | ..           | ..                                | ..                  | ..          | ..                                                            | ..   |
| North Arcot ..           | The Anjuman Industrial<br>School, Melvisbaram.                     | Do.                   | 67                                  | 59    | ..            | ..                           | ..                    | ..                 | ..                  | 38                                              | ..          | ..                   | ..      | ..             | ..           | ..                                | ..                  | ..          | ..                                                            | ..   |
| Ganjam ..                | The Raja's Industrial School,<br>Parakimedi.                       | Do.                   | 24                                  | 25    | ..            | ..                           | ..                    | ..                 | ..                  | 25                                              | ..          | ..                   | ..      | ..             | ..           | ..                                | ..                  | ..          | ..                                                            | ..   |
| Madras ..                | The Or Assisted Industries,<br>Madras.                             | Do.                   | 45                                  | 27    | ..            | ..                           | ..                    | ..                 | ..                  | ..                                              | ..          | ..                   | ..      | ..             | ..           | ..                                | ..                  | ..          | ..                                                            | ..   |
| Tinnevely ..             | St. Joseph's Industrial<br>School, Adakalapuram.                   | Boys<br>and<br>girls. | 30                                  | 57    | ..            | ..                           | 41                    | ..                 | ..                  | ..                                              | 16          | ..                   | ..      | ..             | ..           | ..                                | ..                  | ..          | ..                                                            | ..   |
| South Kanara.            | The Commonwealth Trust<br>Engineering Works classes,<br>Mangalore. | Boys.                 | 17                                  | 14    | ..            | ..                           | ..                    | 14                 | ..                  | ..                                              | ..          | ..                   | ..      | ..             | ..           | ..                                | ..                  | ..          | ..                                                            | ..   |
| Madura ..                | Pasumalai Trades School,<br>Pasumalai.                             | Do.                   | 74                                  | 63    | ..            | ..                           | 11                    | ..                 | ..                  | 30                                              | ..          | ..                   | ..      | ..             | ..           | ..                                | ..                  | ..          | ..                                                            | ..   |
| Bellary ..               | Board Parachana School,<br>Yenniganur.                             | Do.                   | 15                                  | ..    | ..            | ..                           | ..                    | ..                 | ..                  | ..                                              | ..          | ..                   | ..      | ..             | ..           | ..                                | ..                  | ..          | ..                                                            | ..   |

**APPENDIX I—cont.**  
Statistics relating to Industrial Schools for 1929-30—cont.

| District. | Name of the institution. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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## APPENDIX I—cont.

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## APPENDIX I—cont.

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**APPENDIX 1—cont.**  
Statistics relating to Industrial Schools for 1929-30—cont.

| District.                | Name of the institution.                                    | Boys<br>or<br>girls. | Number on<br>rolls on<br>31st March |       | Draw-<br>ing.          |            | Mechanical engi-<br>neering. |                       | Civil engineering. | Draughtsman course. | Carpentry,<br>cabinet-<br>making and general<br>wood work. | Wear-<br>ing.           |         | Needle crafts. |              |             |                                                              | Agriculture and allied<br>trades. | Oil-engine driving. |      |
|--------------------------|-------------------------------------------------------------|----------------------|-------------------------------------|-------|------------------------|------------|------------------------------|-----------------------|--------------------|---------------------|------------------------------------------------------------|-------------------------|---------|----------------|--------------|-------------|--------------------------------------------------------------|-----------------------------------|---------------------|------|
|                          |                                                             |                      | 1929.                               | 1930. | Freehand out-<br>line. | Technical. | Fitter's work.               | Blacksmith's<br>work. |                    |                     |                                                            | Other<br>bran-<br>ches. | Cotton. | Carpet.        | Lace-making. | Embroidery. | Other bran-<br>ches such as<br>dress-making,<br>sewing, etc. |                                   |                     |      |
|                          |                                                             |                      |                                     |       |                        |            |                              |                       |                    |                     |                                                            |                         |         |                |              |             |                                                              |                                   |                     | (4)  |
| (1)                      | (2)                                                         | (3)                  | (4)                                 | (5)   | (6)                    | (7)        | (8)                          | (9)                   | (10)               | (11)                | (12)                                                       | (13)                    | (14)    | (15)           | (16)         | (17)        | (18)                                                         | (19)                              | (20)                | (21) |
| AIDED INSTITUTIONS—cont. |                                                             |                      |                                     |       |                        |            |                              |                       |                    |                     |                                                            |                         |         |                |              |             |                                                              |                                   |                     |      |
| Vizagapatam.             | St. Aloysius Supplementary Industrial classes, Vizagapatam. | Boys.                | 19                                  | 15    | ..                     | ..         | ..                           | ..                    | 15                 | ..                  | ..                                                         | ..                      | ..      | 16             | ..           | ..          | ..                                                           | ..                                | 30                  | ..   |
| Guntur                   | U.L.C.M. Lam Rural School, Guntur.                          | Do.                  | 63                                  | 54    | ..                     | ..         | ..                           | ..                    | ..                 | ..                  | 18                                                         | ..                      | 16      | ..             | ..           | ..          | ..                                                           | ..                                | ..                  | ..   |
| Coimbatore               | P.S.G. & Sons Charity Industrial Institute, Peelamedu.      | Do.                  | ..                                  | 33    | ..                     | ..         | ..                           | ..                    | 9                  | ..                  | 22                                                         | ..                      | ..      | ..             | 2            | ..          | ..                                                           | ..                                | ..                  | ..   |
| Kistna                   | Andhra Jatheeya Kelasala, Masulipatam.                      | Boys.<br>& gls.      | 50                                  | 65    | 22                     | ..         | 28                           | ..                    | 13                 | ..                  | ..                                                         | ..                      | ..      | ..             | ..           | ..          | ..                                                           | ..                                | ..                  | ..   |
| North Arcot              | Anjuman Oosmania Industrial School, Tirupattur.             | Boys.                | 21                                  | 27    | ..                     | ..         | ..                           | ..                    | ..                 | ..                  | 27                                                         | ..                      | ..      | 6              | ..           | ..          | ..                                                           | ..                                | ..                  | ..   |
| Tanjore                  | Jacquard Weaving School, Kumbakonam.                        | Do.                  | ..                                  | 6     | ..                     | ..         | ..                           | ..                    | ..                 | ..                  | ..                                                         | ..                      | ..      | ..             | ..           | ..          | ..                                                           | ..                                | ..                  | ..   |
| Tinnevelly               | St. Ignatius Industrial School, Tuticorin.                  | Do.                  | ..                                  | 20    | ..                     | ..         | ..                           | ..                    | ..                 | ..                  | 20                                                         | ..                      | ..      | ..             | ..           | ..          | ..                                                           | ..                                | ..                  | ..   |
| Chingleput               | Total ..                                                    | ..                   | 2,751                               | 2,745 | 22                     | 98         | 130                          | 142                   | 155                | ..                  | 1,330                                                      | 14                      | 438     | 12             | ..           | ..          | 58                                                           | 84                                | 12                  | ..   |
| Madras                   | U.F.C.M. Lace School, Chingleput.                           | Girls.               | 56                                  | 66    | ..                     | ..         | ..                           | ..                    | ..                 | ..                  | ..                                                         | ..                      | ..      | ..             | ..           | ..          | ..                                                           | ..                                | ..                  | ..   |
| South Arcot              | C.S.M. Girls' Industrial School, Kilpauk.                   | Do.                  | 62                                  | 48    | ..                     | ..         | ..                           | ..                    | ..                 | ..                  | ..                                                         | ..                      | ..      | ..             | 9            | 39          | ..                                                           | ..                                | ..                  | ..   |
| Trichinopoly             | D.M. Girls' Industrial School, Keelur.                      | Do.                  | 40                                  | 33    | ..                     | ..         | ..                           | ..                    | ..                 | ..                  | ..                                                         | ..                      | ..      | ..             | ..           | 33          | ..                                                           | ..                                | ..                  | ..   |
| Madura                   | Wesleyan Mission Industrial School, Karur.                  | Do.                  | 25                                  | 17    | ..                     | ..         | ..                           | ..                    | ..                 | ..                  | ..                                                         | ..                      | ..      | ..             | 11           | 6           | ..                                                           | ..                                | ..                  | ..   |
|                          | St. Joseph's Convent Industrial School, Madura.             | Do.                  | 142                                 | 148   | ..                     | ..         | ..                           | ..                    | ..                 | ..                  | ..                                                         | ..                      | ..      | ..             | ..           | 77          | 71                                                           | ..                                | ..                  | ..   |

**APPENDIX 1—cont.**  
Statistics relating to Industrial Schools for 1929-30—cont.

| District     | Name of the institution.                                    | Baitan work. | Plumbing and minor sanitary science. | Motor-car driving and repairs work. | Mat-making. | Basket-making. | Chemistry of leather manufacture. | Electric wiring. | Railway apprentices. | Engraving. | General education. | Scientific instrument making. | Goldsmith's work. | Laquer work. | Special painting. | Printing and allied trades. | Boot and shoe-making. | Electrical engineering. | Probationer's course. | Preparatory Trades School course. | Sericulture. |
|--------------|-------------------------------------------------------------|--------------|--------------------------------------|-------------------------------------|-------------|----------------|-----------------------------------|------------------|----------------------|------------|--------------------|-------------------------------|-------------------|--------------|-------------------|-----------------------------|-----------------------|-------------------------|-----------------------|-----------------------------------|--------------|
|              |                                                             | (22)         | (23)                                 | (24)                                | (25)        | (26)           | (27)                              | (28)             | (29)                 | (30)       | (31)               | (32)                          | (33)              | (34)         | (35)              | (36)                        | (37)                  | (38)                    | (39)                  | (40)                              | (41)         |
| Vizagapatam. | <b>AIDED INSTITUTIONS—cont.</b>                             | ..           | ..                                   | ..                                  | ..          | ..             | ..                                | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..           | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Guntur       | St. Aloysius Supplementary Industrial classes, Vizagapatam. | ..           | ..                                   | ..                                  | ..          | ..             | ..                                | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..           | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Coimbatore   | U.L.C.M. Lam Rural School, Guntur.                          | ..           | ..                                   | ..                                  | ..          | ..             | ..                                | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..           | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Kistna       | P.S.G. & Sons Charity Industrial Institute, Peelamedu.      | ..           | ..                                   | ..                                  | ..          | ..             | ..                                | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..           | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| North Arcot  | Andhra Jatheeya Khalasala, Masulipatam.                     | ..           | ..                                   | ..                                  | ..          | ..             | ..                                | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..           | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Tanjore      | Anjuman Oosmania Industrial School, Tirupattur.             | ..           | ..                                   | ..                                  | ..          | ..             | ..                                | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..           | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Tinnevely    | Jacquard Weaving School, Kumbakonam.                        | ..           | ..                                   | ..                                  | ..          | ..             | ..                                | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..           | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
|              | St. Ignatius Industrial School, Tuticorin.                  | ..           | ..                                   | ..                                  | ..          | ..             | ..                                | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..           | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Chingleput   | Total ..                                                    | 33           | ..                                   | 117                                 | ..          | ..             | ..                                | 29               | ..                   | ..         | 21                 | 27                            | ..                | ..           | ..                | 23                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Madras       | U.F.C.M. Lace School, Chingleput.                           | ..           | ..                                   | ..                                  | ..          | ..             | ..                                | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..           | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| South Arcot  | C.S.M. Girls' Industrial School, Kilpauk.                   | ..           | ..                                   | ..                                  | ..          | ..             | ..                                | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..           | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Trichinopoly | D.M. Girls' Industrial School, Keelur.                      | ..           | ..                                   | ..                                  | ..          | ..             | ..                                | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..           | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Madura       | Wesleyan Mission Industrial School, Karur.                  | ..           | ..                                   | ..                                  | ..          | ..             | ..                                | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..           | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
|              | St. Joseph's Convent Industrial School, Madura.             | ..           | ..                                   | ..                                  | ..          | ..             | ..                                | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..           | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |

# APPENDIX I—cont.

## Statistics relating to Industrial Schools for 1929-30—cont.

| District.                 | Name of the institution.                                      | Boys<br>or<br>Girls. | Number on<br>rolls on |       | Draw-<br>ing.          | Mechanical engi-<br>neering. |                       | Civil engineering.    | Draughtsman course.  | Carpentry, cabinet-<br>making and<br>wood work. | Metal work.         | Weav-<br>ing.                                   |             | Needle crafts. |              |              | Agriculture and allied<br>trades. | Oil-engine driving.                                          |                                                              |                     |
|---------------------------|---------------------------------------------------------------|----------------------|-----------------------|-------|------------------------|------------------------------|-----------------------|-----------------------|----------------------|-------------------------------------------------|---------------------|-------------------------------------------------|-------------|----------------|--------------|--------------|-----------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|---------------------|
|                           |                                                               |                      | 31st March<br>1929.   | 1930. |                        | Fitter's work.               | Blacksmith's<br>work. |                       |                      |                                                 |                     | Other bran-<br>ches.                            | Cotton.     | Carpet.        | Lace-making. | Embroidery.  |                                   |                                                              | Other bran-<br>ches such as<br>dress-making,<br>sewing, etc. |                     |
| (1)                       | (2)                                                           | (3)                  | (4)                   | (5)   | (6)                    | (7)                          | (8)                   | (9)                   | (10)                 | (11)                                            | (12)                | (13)                                            | (14)        | (15)           | (16)         | (17)         | (18)                              | (19)                                                         | (20)                                                         | (21)                |
| AIDED INSTITUTIONS.—cont. |                                                               |                      |                       |       |                        |                              |                       |                       |                      |                                                 |                     |                                                 |             |                |              |              |                                   |                                                              |                                                              |                     |
| Tinnevely ..              | S.P.G. Lace School, Idayaragudi.                              | Girls.               | 32                    | ..    | Freehand out-<br>line. | Technical.                   | Fitter's work.        | Blacksmith's<br>work. | Other bran-<br>ches. | Civil engineering.                              | Draughtsman course. | Carpentry, cabinet-<br>making and<br>wood work. | Metal work. | Cotton.        | Carpet.      | Lace-making. | Embroidery.                       | Other bran-<br>ches such as<br>dress-making,<br>sewing, etc. | Agriculture and allied<br>trades.                            | Oil-engine driving. |
| Do. ..                    | S.P.G. Lace School, Kudan-<br>gulam.                          | Do.                  | 22                    | ..    | ..                     | ..                           | ..                    | ..                    | ..                   | ..                                              | ..                  | ..                                              | ..          | ..             | ..           | ..           | ..                                | ..                                                           | ..                                                           | ..                  |
| Bellary ..                | St. Joseph's Girls' Indus-<br>trial School, Bellary.          | Do.                  | 72                    | 92    | ..                     | ..                           | ..                    | ..                    | ..                   | ..                                              | ..                  | ..                                              | ..          | ..             | ..           | ..           | ..                                | 73                                                           | ..                                                           | ..                  |
| Tinnevely ..              | B.C. Lace School, Vadakan-<br>gulam.                          | Do.                  | 84                    | 90    | ..                     | ..                           | ..                    | ..                    | ..                   | ..                                              | ..                  | ..                                              | ..          | ..             | ..           | ..           | ..                                | 9                                                            | ..                                                           | ..                  |
| Do. ..                    | Hindu Girls' Industrial<br>School, Kudangulam.                | Do.                  | 42                    | 43    | ..                     | ..                           | ..                    | ..                    | ..                   | ..                                              | ..                  | ..                                              | ..          | ..             | ..           | ..           | ..                                | ..                                                           | ..                                                           | ..                  |
| Do. ..                    | Holy Cross Convent Indus-<br>trial School, Tuticorin.         | Do.                  | 76                    | 96    | ..                     | ..                           | ..                    | ..                    | ..                   | ..                                              | ..                  | ..                                              | ..          | ..             | ..           | ..           | ..                                | 24                                                           | 72                                                           | ..                  |
| Anjengo ..                | The Sacred Heart Convent<br>Industrial School, Anjengo.       | Do.                  | 31                    | 40    | ..                     | ..                           | ..                    | ..                    | ..                   | ..                                              | ..                  | ..                                              | ..          | ..             | ..           | ..           | ..                                | 16                                                           | 26                                                           | ..                  |
| Chingleput ..             | Wesleyan Mission Industrial<br>School, Ikharu.                | Do.                  | 137                   | 161   | ..                     | ..                           | ..                    | ..                    | ..                   | ..                                              | ..                  | ..                                              | ..          | ..             | ..           | ..           | ..                                | 129                                                          | ..                                                           | ..                  |
| Malabar ..                | The Commonwealth Embroi-<br>dery School, Calicut.             | Do.                  | 48                    | 59    | ..                     | ..                           | ..                    | ..                    | ..                   | ..                                              | ..                  | ..                                              | ..          | ..             | ..           | ..           | ..                                | 59                                                           | ..                                                           | ..                  |
| Trichinopoly ..           | Holy Cross Convent Indus-<br>trial School, Trichinopoly.      | Do                   | 76                    | 69    | ..                     | ..                           | ..                    | ..                    | ..                   | ..                                              | ..                  | ..                                              | ..          | ..             | ..           | ..           | ..                                | 69                                                           | ..                                                           | ..                  |
| Guntur ..                 | A.B.M. Girls' Industrial<br>School, Ongole.                   | Do.                  | 20                    | 20    | ..                     | ..                           | ..                    | ..                    | ..                   | ..                                              | ..                  | ..                                              | ..          | ..             | ..           | ..           | ..                                | 9                                                            | 11                                                           | ..                  |
| Tanjore ..                | Leipzig Mission Women's<br>Industrial School, Maya-<br>varam. | Do.                  | 48                    | 51    | ..                     | ..                           | ..                    | ..                    | ..                   | ..                                              | ..                  | ..                                              | ..          | ..             | ..           | ..           | ..                                | ..                                                           | 2                                                            | ..                  |
| Nellore ..                | O.E.L.M. Girls' Industrial<br>School, Gudur.                  | Do.                  | 41                    | 29    | ..                     | ..                           | ..                    | ..                    | ..                   | ..                                              | ..                  | ..                                              | ..          | ..             | ..           | ..           | ..                                | 29                                                           | ..                                                           | ..                  |

# APPENDIX I—cont.

## Statistics relating to Industrial Schools for 1929-30—cont.

| District.     | Name of the institution.                              | Rattan work. | Plumbing and minor sanitary science. | Motor-car driving and repairs work. | Mat-making. | Basket-making. | Chemistry of leather of manufacture. | Electric wiring. | Railway apprentices. | Engraving. | General education. | Scientific instrument making. | Goldsmith's work. | Lacquer work. | Special painting. | Printing and allied trades. | Boot and shoe-making. | Electrical engineering. | Probationer's course. | Preparatory Trades School course. | Sericulture. |
|---------------|-------------------------------------------------------|--------------|--------------------------------------|-------------------------------------|-------------|----------------|--------------------------------------|------------------|----------------------|------------|--------------------|-------------------------------|-------------------|---------------|-------------------|-----------------------------|-----------------------|-------------------------|-----------------------|-----------------------------------|--------------|
|               |                                                       | (22)         | (23)                                 | (24)                                | (25)        | (26)           | (27)                                 | (28)             | (29)                 | (30)       | (31)               | (32)                          | (33)              | (34)          | (35)              | (36)                        | (37)                  | (38)                    | (39)                  | (40)                              | (41)         |
|               | AIDED INSTITUTIONS—cont.                              |              |                                      |                                     |             |                |                                      |                  |                      |            |                    |                               |                   |               |                   |                             |                       |                         |                       |                                   |              |
| Tinnevelly .. | S.P.G. Lace School, Idayaragudi.                      | ..           | ..                                   | ..                                  | ..          | ..             | ..                                   | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..            | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Do. ..        | S.P.G. Lace School, Kudangulam.                       | ..           | ..                                   | ..                                  | ..          | ..             | ..                                   | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..            | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Bellary ..    | St. Joseph's Girls' Industrial School, Bellary.       | ..           | ..                                   | ..                                  | ..          | ..             | ..                                   | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..            | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Tinnevelly .. | R.C. Lace School, Vadakurugulam.                      | ..           | ..                                   | ..                                  | ..          | ..             | ..                                   | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..            | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Do. ..        | Hindu Girls' Industrial School, Kudangulam.           | ..           | ..                                   | ..                                  | ..          | ..             | ..                                   | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..            | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Do. ..        | Holy Cross Convent Industrial School, Tuticorin.      | ..           | ..                                   | ..                                  | ..          | ..             | ..                                   | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..            | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Anjengo ..    | The Sacred Heart Convent Industrial School, Anjengo.  | ..           | ..                                   | ..                                  | ..          | ..             | ..                                   | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..            | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Chingleput .. | Wesleyan Mission Industrial School, Ikharu.           | ..           | ..                                   | ..                                  | ..          | ..             | ..                                   | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..            | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Malabar ..    | The Commonwealth Embroidery School, Calicut.          | ..           | ..                                   | ..                                  | ..          | ..             | ..                                   | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..            | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Trichinopoly. | Holy Cross Convent Industrial School, Trichinopoly.   | ..           | ..                                   | ..                                  | ..          | ..             | ..                                   | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..            | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Guntur ..     | A.B.M. Girls' Industrial School, Ongole.              | ..           | ..                                   | ..                                  | ..          | ..             | ..                                   | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..            | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Tanjore ..    | Leipzig Mission Women's Industrial School, Mayavaram. | ..           | ..                                   | ..                                  | 8           | ..             | ..                                   | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..            | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Nellore ..    | O.E.L.M. Girls' Industrial School, Gudur.             | ..           | ..                                   | ..                                  | ..          | ..             | ..                                   | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..            | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |

# APPENDIX I—cont.

Statistics relating to Industrial Schools for 1929-30—cont.

| District.                | Name of the institution.                                         | Boys or girls. | Number on rolls on 31st March |       | Draw-ing. | Mechanical engi-neering. |                |                    | Weav-ing. | Needle crafts          |                      |                         | Agriculture and allied trades. | Oil-engine driving. |                          |                                               |                  |              |              |                  |
|--------------------------|------------------------------------------------------------------|----------------|-------------------------------|-------|-----------|--------------------------|----------------|--------------------|-----------|------------------------|----------------------|-------------------------|--------------------------------|---------------------|--------------------------|-----------------------------------------------|------------------|--------------|--------------|------------------|
|                          |                                                                  |                | 1929.                         | 1930  |           | (6) Freeland out-line.   | (7) Technical. | (8) Fitter's work. |           | (9) Blacksmith's work. | (10) Other branches. | (11) Civil engineering. |                                |                     | (12) Draughtsman course. | (13) Carpentry, cabinet-making and wood work. | (14) Metal work. | (15) Cotton. | (16) Carpet. | (17) Lace-making |
| (1)                      | (2)                                                              | (3)            | (4)                           | (5)   | (6)       | (7)                      | (8)            | (9)                | (10)      | (11)                   | (12)                 | (13)                    | (14)                           | (15)                | (16)                     | (17)                                          | (18)             | (19)         | (20)         | (21)             |
| AIDED INSTITUTIONS—cont. |                                                                  |                |                               |       |           |                          |                |                    |           |                        |                      |                         |                                |                     |                          |                                               |                  |              |              |                  |
| Chittoor ..              | A.A.M. Women's Industrial Home, Palmaner.                        | Girls.         | 72                            | 89    | ..        | ..                       | ..             | ..                 | ..        | ..                     | ..                   | ..                      | ..                             | ..                  | ..                       | ..                                            | 44               | 45           | ..           | ..               |
| Coimbatore ..            | L.M. Girls' Industrial School, Erode.                            | Do.            | 61                            | 62    | ..        | ..                       | ..             | ..                 | ..        | ..                     | ..                   | ..                      | 14                             | ..                  | ..                       | ..                                            | ..               | ..           | ..           | ..               |
| Madras ..                | The Madras Sevasadan Industrial School, Madras.                  | Do.            | 51                            | 41    | ..        | ..                       | ..             | ..                 | ..        | ..                     | ..                   | ..                      | 9                              | ..                  | ..                       | ..                                            | 22               | ..           | ..           | ..               |
| Guntur ..                | St. Joseph's Orphanage Industrial School, Guntur.                | Do.            | 22                            | 20    | ..        | ..                       | ..             | ..                 | ..        | ..                     | ..                   | ..                      | ..                             | ..                  | ..                       | ..                                            | ..               | 20           | ..           | ..               |
| Nellore ..               | Girls' Industrial School, Nellore.                               | Do.            | 40                            | ..    | ..        | ..                       | ..             | ..                 | ..        | ..                     | ..                   | ..                      | ..                             | ..                  | ..                       | ..                                            | ..               | ..           | ..           | ..               |
| South Arcot ..           | D.M. Lace Industrial School, Cuddalore.                          | Do.            | 31                            | 7     | ..        | ..                       | ..             | ..                 | ..        | ..                     | ..                   | ..                      | ..                             | ..                  | ..                       | ..                                            | 7                | ..           | ..           | ..               |
| Nilgiris ..              | Nazareth Convent Girls' Industrial School, Ottaviamund.          | Do.            | 21                            | 35    | ..        | ..                       | ..             | ..                 | ..        | ..                     | ..                   | ..                      | ..                             | ..                  | ..                       | ..                                            | 4                | 31           | ..           | ..               |
| Coimbatore ..            | The Immaculate Conception Convent Industrial School, Coimbatore. | Do.            | 60                            | 61    | ..        | ..                       | ..             | ..                 | ..        | ..                     | ..                   | ..                      | ..                             | ..                  | ..                       | ..                                            | 23               | 38           | ..           | ..               |
| Madras ..                | St. Bridget's Industrial School for girls, Madras.               | Do.            | ..                            | 30    | ..        | ..                       | ..             | ..                 | ..        | ..                     | ..                   | ..                      | ..                             | ..                  | ..                       | ..                                            | ..               | 30           | ..           | ..               |
| West Godavari ..         | The Alexander Girls' Industrial School, Ellore.                  | Do.            | ..                            | 22    | ..        | ..                       | ..             | ..                 | ..        | ..                     | ..                   | ..                      | ..                             | ..                  | ..                       | ..                                            | ..               | 22           | ..           | ..               |
|                          | Total ..                                                         |                | 1,412                         | 1,429 | ..        | ..                       | ..             | ..                 | ..        | ..                     | ..                   | ..                      | 96                             | ..                  | 456                      | 529                                           | 272              | ..           | 84           | ..               |
|                          | Grand Total ..                                                   |                | 5,636                         | 5,658 | 107       | 207                      | 130            | 158                | 295       | ..                     | ..                   | 1,493                   | 124                            | 596                 | 17                       | 456                                           | 529              | 530          | 84           | 12               |

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# APPENDIX I—cont.

Statistics relating to Industrial Schools for 1929-30—cont.

| District.        | Name of the institution.                                         | Rattan work. | Plumbing and minor sanitary science. | Motor-car driving and repairs work. | Mat-making. | Basket-making. | Chemistry of leather manufacture. | Electric wiring. | Railway apprentices. | Engraving. | General education. | Scientific instrument making. | Goldsmith's work. | Lacquer work. | Special painting. | Printing and allied trades. | Boot and shoe-making. | Electrical engineering. | Probationer's course. | Preparatory Trades School course. | Sericulture. |
|------------------|------------------------------------------------------------------|--------------|--------------------------------------|-------------------------------------|-------------|----------------|-----------------------------------|------------------|----------------------|------------|--------------------|-------------------------------|-------------------|---------------|-------------------|-----------------------------|-----------------------|-------------------------|-----------------------|-----------------------------------|--------------|
|                  |                                                                  | (22)         | (23)                                 | (24)                                | (25)        | (26)           | (27)                              | (28)             | (29)                 | (30)       | (31)               | (32)                          | (33)              | (34)          | (35)              | (36)                        | (37)                  | (38)                    | (39)                  | (40)                              | (41)         |
|                  | Aided Institutions—cont.                                         |              |                                      |                                     |             |                |                                   |                  |                      |            |                    |                               |                   |               |                   |                             |                       |                         |                       |                                   |              |
| Chittoor ..      | A.A.M. Women's Industrial Home, Palmaner.                        | ..           | ..                                   | ..                                  | ..          | ..             | ..                                | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..            | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Coimbatore ..    | L.M. Girls' Industrial School, Erode.                            | ..           | ..                                   | ..                                  | 26          | 22             | ..                                | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..            | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Madras ..        | The Madras Sevasadan Industrial School, Madras.                  | 7            | ..                                   | ..                                  | ..          | ..             | ..                                | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..            | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Guntur ..        | St. Joseph's Orphanage Industrial School, Guntur.                | ..           | ..                                   | ..                                  | ..          | ..             | ..                                | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..            | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Nellore ..       | Girls' Industrial School, Nellore.                               | ..           | ..                                   | ..                                  | ..          | ..             | ..                                | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..            | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| South Arcot ..   | D.M. Lace Industrial School, Cuddalore.                          | ..           | ..                                   | ..                                  | ..          | ..             | ..                                | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..            | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Nilgiris ..      | Nazareth Convent Girls' Industrial School, Ottaviamund.          | ..           | ..                                   | ..                                  | ..          | ..             | ..                                | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..            | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Coimbatore ..    | The Immaculate Conception Convent Industrial School, Coimbatore. | ..           | ..                                   | ..                                  | ..          | ..             | ..                                | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..            | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| Madras ..        | St. Bridget's Industrial School for Girls, Madras.               | ..           | ..                                   | ..                                  | ..          | ..             | ..                                | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..            | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
| West Godavari .. | The Alexander Girls' Industrial School, Ellore.                  | ..           | ..                                   | ..                                  | ..          | ..             | ..                                | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..            | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
|                  | Total ..                                                         | 7            | ..                                   | ..                                  | 34          | 22             | ..                                | ..               | ..                   | ..         | ..                 | ..                            | ..                | ..            | ..                | ..                          | ..                    | ..                      | ..                    | ..                                | ..           |
|                  | Grand Total ..                                                   | 40           | 35                                   | 174                                 | 34          | 22             | ..                                | 109              | 196                  | 61         | 21                 | 27                            | 20                | ..            | 14                | 116                         | ..                    | 156                     | ..                    | 90                                | 13           |

# **APPENDIX II.** Statistics relating to Industrial Schools for 1929-30.

| District and name of the institution.           | Boys or girls.  | Number on rolls on 31st March 1930. | Receipts.                                                                |           |                              |                  |                   | Public funds.       | Management contribution. | Total receipts (equal expenditure). |
|-------------------------------------------------|-----------------|-------------------------------------|--------------------------------------------------------------------------|-----------|------------------------------|------------------|-------------------|---------------------|--------------------------|-------------------------------------|
|                                                 |                 |                                     | Miscellaneous receipts including sale-proceeds of manufactured articles. | Fees.     | Teaching and special grants. | Building grants. | Equipment grants. |                     |                          |                                     |
|                                                 |                 |                                     | RS. A. P.                                                                | RS. A. P. | RS. A. P.                    | RS. A. P.        | RS. A. P.         | RS. A. P.           | RS. A. P.                | RS. A. P.                           |
| <b>GOVERNMENT INSTITUTIONS.</b>                 |                 |                                     |                                                                          |           |                              |                  |                   |                     |                          |                                     |
| Madura—Government Industrial Institute, Madura. | Boys.           | 98                                  | ..                                                                       | ..        | ..                           | ..               | ..                | 1,05,380 10 7       | ..                       | 1,05,380 10 7                       |
| Madras—Leather Trades Institute, Madras.        | ..              | ..                                  | Closed.                                                                  | ..        | ..                           | ..               | ..                | ..                  | ..                       | ..                                  |
| School of Arts and Crafts, Madras.              | Boys and girls. | 315                                 | ..                                                                       | ..        | ..                           | ..               | ..                | 59,612 14 10        | ..                       | 59,612 14 10                        |
| Government Trades School, Madras.               | Boys.           | 863                                 | ..                                                                       | ..        | ..                           | ..               | ..                | 80,452 3 5          | ..                       | 80,452 3 5                          |
| Government Textile Institute, Madras.           | Do.             | 56                                  | ..                                                                       | ..        | ..                           | ..               | ..                | 40,206 14 2         | ..                       | 40,206 14 2                         |
| Bellary—Government Industrial School, Bellary.  | Do.             | 22                                  | ..                                                                       | ..        | ..                           | ..               | ..                | 15,094 4 1          | ..                       | 15,094 4 1                          |
| Malabar—Government Industrial School, Calicut.  | Do.             | 55                                  | ..                                                                       | ..        | ..                           | ..               | ..                | 33,280 14 7         | ..                       | 33,280 14 7                         |
| S. Kanara—Government Trade School, Mangalore.   | Do.             | 75                                  | ..                                                                       | ..        | ..                           | ..               | ..                | 26,815 6 5          | ..                       | 26,815 6 5                          |
| <b>Total ..</b>                                 |                 | <b>1,484</b>                        | ..                                                                       | ..        | ..                           | ..               | ..                | <b>3,60,850 4 1</b> | ..                       | <b>3,60,850 4 1</b>                 |

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## **AIDED INSTITUTIONS.**

|                                                            |       |     |              |            |           |    |           |    |             |              |
|------------------------------------------------------------|-------|-----|--------------|------------|-----------|----|-----------|----|-------------|--------------|
| Trichinopoly—St. Joseph's Industrial School, Trichinopoly. | Boys. | 53  | 41,880 5 3   | ..         | 2,100 0 0 | .. | 500 0 0   | .. | 7,144 12 0  | 51,025 1 3   |
| Madras—C.N.T. Institute, Vepery, Madras.                   | Do.   | 328 | 9,715 11 5   | 12,963 8 0 | 9,000 0 0 | .. | 999 13 0  | .. | 7,746 9 5   | 40,425 9 10  |
| Trichinopoly—Wesleyan Mission Industrial School, Karur.    | Do.   | 88  | 36,032 9 7   | ..         | 3,932 0 0 | .. | 1,585 0 0 | .. | 4,394 3 0   | 45,943 12 7  |
| South Arcot—St. Joseph's Industrial School, Indivanan.     | Do.   | 83  | 21,666 5 3   | ..         | 5,800 0 0 | .. | 1,850 0 0 | .. | 3,301 0 0   | 32,617 5 3   |
| Madras—Anjuman-i-Ahla-i-Islam, Madras.                     | Do.   | 99  | ..           | ..         | 6,000 0 0 | .. | 74 8 0    | .. | ..          | 6,074 8 0    |
| North Arcot—A.A.M. Industrial School, Karpadi.             | Do.   | 102 | 3,06,971 8 0 | 1,021 8 0  | 4,300 0 0 | .. | 280 0 0   | .. | ..          | 3,12,573 0 0 |
| Coimbatore—St. Joseph's Industrial School, Coimbatore.     | Do.   | 159 | 84,365 1 5   | 210 4 0    | 4,000 0 0 | .. | 790 0 0   | .. | ..          | 89,365 5 5   |
| Tanjore—St. Francis Xavier's Industrial School, Tanjore.   | Do.   | 99  | 20,932 13 6  | ..         | 3,000 0 0 | .. | 910 0 0   | .. | 2,369 12 4  | 27,212 9 10  |
| Tinnevely—S.P.G. Art Industrial School, Nazareth.          | Do.   | 107 | 23,077 4 4   | ..         | 4,400 0 0 | .. | 425 0 0   | .. | 9,053 3 6   | 36,955 7 10  |
| Vizagapatam—St. Aloysius' Industrial School, Vizagapatam.  | Do.   | 15  | ..           | ..         | 2,840 0 0 | .. | ..        | .. | ..          | 2,840 0 0    |
| Kurnool—Coles' Vocational Industrial School, Kurnool.      | Do.   | 49  | 2,770 11 0   | 56 0 0     | 3,000 0 0 | .. | ..        | .. | 10,388 0 11 | 16,214 11 11 |
| Trichinopoly—All Saints' Industrial School, Puthur.        | Do.   | 41  | 2,352 9 1    | ..         | 2,000 0 0 | .. | 180 0 0   | .. | 2,160 14 8  | 6,693 7 9    |
| Tanjore—St. Mary's Industrial School, Kumbakonam.          | Do.   | 70  | 41,415 0 1   | ..         | 3,000 0 0 | .. | ..        | .. | 1,470 7 10  | 45,885 7 1   |

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# APPENDIX II—cont.

Statistics relating to Industrial Schools for 1929-30—cont.

| District and name of the institution.                           | Boys or girls.  | Number on rolls on 31st March 1930. | Receipts.                                                                |           |                              |                  |                   | Public funds. | Management contribution. | Total receipts (equal expenditure). |
|-----------------------------------------------------------------|-----------------|-------------------------------------|--------------------------------------------------------------------------|-----------|------------------------------|------------------|-------------------|---------------|--------------------------|-------------------------------------|
|                                                                 |                 |                                     | Miscellaneous receipts including sale-proceeds of manufactured articles. | Fees.     | Teaching and special grants. | Building grants. | Equipment grants. |               |                          |                                     |
|                                                                 |                 |                                     | RS. A. P.                                                                | RS. A. P. | RS. A. P.                    | RS. A. P.        | RS. A. P.         | RS. A. P.     | RS. A. P.                | RS. A. P.                           |
| <b>AIDED INSTITUTIONS—cont.</b>                                 |                 |                                     |                                                                          |           |                              |                  |                   |               |                          |                                     |
| North Arcot—<br>Anjuman - i - Ishaiful<br>Hussanath, Vellore.   | Boys.           | 55                                  | ..                                                                       | ..        | 2,120 0 0                    | 2,527 0 0        | 740 0 0           | ..            | ..                       | 5,387 0 0                           |
| Chingleput—<br>C.S.M. Agricultural<br>School, Melrosapuram.     | Do.             | 64                                  | ..                                                                       | ..        | 1,200 0 0                    | ..               | 170 0 0           | ..            | ..                       | 1,370 0 0                           |
| South Arcot—<br>D.M. Industrial School,<br>Panruti.             | Do.             | 103                                 | 12,594 14 0                                                              | ..        | 4,000 0 0                    | ..               | 930 0 0           | ..            | 22,060 10                | 239,585 8 2                         |
| Chingleput—<br>A.A.M. Industrial School,<br>Saidapet.           | Do.             | 18                                  | 10,648 14 8                                                              | ..        | 700 0 0                      | ..               | 142 6 0           | ..            | 6,684 7 1                | 8,175 11 9                          |
| North Arcot—<br>Anjuman Industrial Orpha-<br>nage, Melvisharam. | Do.             | 59                                  | 48 0 0                                                                   | ..        | 2,000 0 0                    | ..               | 500 0 0           | ..            | 1,873 15 0               | 4,421 15 0                          |
| Ganjam—<br>Raja's Industrial School,<br>Parlakinedi.            | Do.             | 25                                  | 4,434 2 11                                                               | ..        | 700 0 0                      | ..               | ..                | ..            | 1,411 6 3                | 6,545 9 2                           |
| Madras—<br>The Orr Assisted Industrial<br>School, Madras.       | Do.             | 27                                  | ..                                                                       | ..        | 2,700 0 0                    | ..               | ..                | ..            | 2,700 0 0                | 5,400 0 0                           |
| Tinnevely—<br>St. Joseph's Industrial<br>School, Adakalapuram.  | Boys and girls. | 57                                  | 3,007 3 0                                                                | 16 8 0    | 900 0 0                      | ..               | ..                | ..            | 965 9 7                  | 4,889 4 7                           |

|                                                                                   |                 |    |             |         |           |    |           |    |            |             |
|-----------------------------------------------------------------------------------|-----------------|----|-------------|---------|-----------|----|-----------|----|------------|-------------|
| South Kabara—<br>Commonwealth Trust Engi-<br>neering Works Classes,<br>Mangalore. | Boys.           | 14 | ..          | 240 0 0 | 400 0 0   | .. | ..        | .. | 278 11 9   | 918 11 9    |
| Madras—<br>Pasumalai Trades School,<br>Pasumalai.                                 | Do.             | 63 | 51,664 6 7  | ..      | 2,000 0 0 | .. | 1,500 0 0 | .. | 2,765 9 0  | 57,929 15 7 |
| Bellary—<br>Beard Panchama School,<br>Yemmiganur.                                 | Do.             |    |             |         |           |    |           |    |            |             |
| Tinnevely—<br>C.M.S. Industrial School<br>for the Blind, Palam-<br>cottah.        | Boys and girls. | 64 | 4,266 0 0   | 433 8 0 | 2,000 0 0 | .. | 800 0 0   | .. | 4,738 5 1  | 12,237 13 1 |
| Madras—<br>Ramakrishna Students'<br>Home Industrial School,<br>Mylapore.          | Boys.           | 27 | 667 15 6    | ..      | 1,200 0 0 | .. | 2,000 0 0 | .. | 6,786 9 10 | 10,654 9 4  |
| Sree Ram Motor School,<br>Madras.                                                 | Do.             | 64 | ..          | ..      | ..        | .. | ..        | .. | ..         | ..          |
| Kistna—<br>St. Joseph's Industrial<br>School, Gunadala.                           | Do.             | 60 | 4,154 3 0   | ..      | 3,000 0 0 | .. | 2,000 0 0 | .. | 6,241 5 0  | 15,395 8 0  |
| Tanjore—<br>Borstal School, Tanjore ..                                            | Do.             | 51 | ..          | ..      | ..        | .. | ..        | .. | ..         | ..          |
| Godavari—<br>C.B.M. Industrial School,<br>Coanada.                                | Do.             | 37 | ..          | 230 0 0 | 1,200 0 0 | .. | 460 0 0   | .. | 1,680 0 0  | 3,570 0 0   |
| Coimbatore—<br>L.M. Weaving School,<br>Erode.                                     | Do.             | 90 | 1,918 12 9  | ..      | 1,200 0 0 | .. | 400 0 0   | .. | 3,911 1 10 | 7,429 14 7  |
| Madras—<br>Madras Penitentiary Car-<br>pentry classes.                            | Do.             | 53 | 38,197 13 9 | ..      | ..        | .. | ..        | .. | 2,902 2 0  | 41,099 15 9 |

# APPENDIX II—cont.

## Statistics relating to Industrial Schools for 1929-30—cont.

| District and name of the institution.                                 | Boys or girls. | Number on rolls on 31st March 1930. | Receipts.                                                                |            |                              |                  |                   | Public funds. | Management contribution. | Total receipts (equal expenditure). |
|-----------------------------------------------------------------------|----------------|-------------------------------------|--------------------------------------------------------------------------|------------|------------------------------|------------------|-------------------|---------------|--------------------------|-------------------------------------|
|                                                                       |                |                                     | Miscellaneous receipts including sale-proceeds of manufactured articles. | Fees.      | Teaching and special grants. | Building grants. | Equipment grants. |               |                          |                                     |
|                                                                       |                |                                     | RS. A. P.                                                                | RS. A. P.  | RS. A. P.                    | RS. A. P.        | RS. A. P.         | RS. A. P.     | RS. A. P.                | RS. A. P.                           |
| <b>ADDED INSTITUTIONS—cont.</b>                                       |                |                                     |                                                                          |            |                              |                  |                   |               |                          |                                     |
| Kistna—<br>Sree Krishna Parismalayam Industrial School, Cowtharam.    | Boys.          | 17                                  | ..                                                                       | ..         | 600 0 0                      | ..               | ..                | ..            | 1,030 0 0                | 1,630 0 0                           |
| Malabar—<br>I.M.C.A. Industrial School, Areakode.                     | Do.            | 37                                  | 824 3 9                                                                  | ..         | 1,000 0 0                    | ..               | 225 8 0           | ..            | 2,772 6 10               | 4,822 2 7                           |
| Madura—<br>C.S.M. Industrial School, Dindigul.                        | Do.            | 47                                  | 6,456 1 9                                                                | ..         | 1,000 0 0                    | ..               | 880 0 0           | ..            | 9,541 11 9               | 17,377 13 6                         |
| Madras—<br>Perambur Industrial School, Perambur.                      | Do.            |                                     |                                                                          |            |                              | Closed.          |                   |               |                          |                                     |
| Vizagapatnam—<br>St. Aloysius' Supplementary classes, Vizagapatnam.   | Do.            | 15                                  | ..                                                                       | ..         | 1,000 0 0                    | ..               | ..                | ..            | ..                       | 1,000 0 0                           |
| Guntur—<br>U.L.C.M. Lam Rural School, Guntur.                         | Do.            | 54                                  | ..                                                                       | ..         | 1,200 0 0                    | ..               | 801 0 0           | ..            | 6,783 13 2               | 8,784 13 2                          |
| Coimbatore—<br>P.S.G. & Sons Charity Industrial Institute, Peelamedu. | Do.            | 33                                  | ..                                                                       | ..         | 1,250 0 0                    | 6,492 0 0        | 6,500 0 0         | ..            | ..                       | 14,242 0 0                          |
|                                                                       |                |                                     |                                                                          |            |                              |                  |                   |               |                          |                                     |
| Kistna—<br>Andhra Jatheya Kalasala, Masulipatam.                      | Do.            | 65                                  | 9,088 0 6                                                                | 269 0 0    | 1,000 0 0                    | ..               | 1,662 8 0         | ..            | 16,302 14 0              | 28,322 6 6                          |
| North Arcot—<br>Anjuman-i-Oosmania Industrial School, Tirupattur.     | Do.            | 27                                  | ..                                                                       | ..         | 600 0 0                      | ..               | 675 0 0           | ..            | 2,035 0 0                | 3,310 0 0                           |
| Tanjore—<br>Jacquard Weaving School, Kumbakonam.                      | Do.            | 6                                   | ..                                                                       | ..         | 488 9 0                      | ..               | 779 0 0           | ..            | 2,518 14 3               | 3,786 7 3                           |
| Tinnevely—<br>St. Ignatious Industrial School, Tuticorin.             | Do.            | 20                                  | ..                                                                       | ..         | ..                           | ..               | 400 0 0           | ..            | ..                       | 400 0 0                             |
| Total                                                                 | ..             | 2,745                               | 73,915 11 1                                                              | 35,440 4 0 | 89,890 9 0                   | 9,019 0 0        | 29,639 11 0       | ..            | 1,34,013 8 3             | 10,33,113 11 4                      |
| Chingleput—<br>U.F.C.M. Lace School, Chingleput.                      | Girls.         | 66                                  | 1,609 7 7                                                                | ..         | 500 0 0                      | ..               | 11 4 0            | ..            | 605 10 11                | 2,726 6 6                           |
| Madras—<br>C.S.M. Girls' Industrial School, Kilpauk.                  | Do.            | 48                                  | 1,449 6 11                                                               | ..         | 1,060 0 0                    | ..               | ..                | ..            | 623 3 4                  | 3,132 10 9                          |
| South Arcot—<br>D.M. Girls' Industrial School, Keelur.                | Do.            | 33                                  | 5,158 2 0                                                                | ..         | 500 0 0                      | ..               | ..                | ..            | 901 15 1                 | 6,560 1 1                           |
| Tiruchinopoly—<br>Wesleyan Mission Lace School, Karur.                | Do.            | 17                                  | 489 12 7                                                                 | ..         | 300 0 0                      | ..               | ..                | ..            | 1,282 11 1               | 2,072 7 8                           |
| Madura—<br>St. Joseph's Convent Industrial School, Madura.            | Do.            | 148                                 | 5,285 3 0                                                                | ..         | 800 0 0                      | ..               | 60 0 0            | ..            | 2,952 4 0                | 9,097 7 0                           |
| Tinnevely—<br>S.P.G. Lace School, Idaiyangudi.                        | Do.            | ..                                  | ..                                                                       | ..         | 300 0 0                      | ..               | ..                | ..            | ..                       | 300 0 0                             |
| S.P.G. Lace School, Kudangulam.                                       | Do.            | ..                                  | ..                                                                       | ..         | 300 0 0                      | ..               | ..                | ..            | ..                       | 300 0 0                             |
| Bellary—<br>St. Joseph's Girls' Industrial School, Bellary.           | Do.            | 92                                  | 609 10 0                                                                 | ..         | 700 0 0                      | ..               | ..                | ..            | 1,049 12 0               | 2,359 6 0                           |

# APPENDIX II—cont.

## Statistics relating to Industrial Schools for 1929-30—cont.

| District and name of the institution.                                          | Boys or girls. | Number on rolls on 31st March 1930. | Receipts.                                                                |           |                              |                  |                   | Public funds. | Management contribution. | Total receipts (equal expenditure). |
|--------------------------------------------------------------------------------|----------------|-------------------------------------|--------------------------------------------------------------------------|-----------|------------------------------|------------------|-------------------|---------------|--------------------------|-------------------------------------|
|                                                                                |                |                                     | Miscellaneous receipts including sale-proceeds of manufactured articles. | Fees.     | Teaching and special grants. | Building grants. | Equipment grants. |               |                          |                                     |
|                                                                                |                |                                     | RS. A. P.                                                                | RS. A. P. | RS. A. P.                    | RS. A. P.        | RS. A. P.         |               | RS. A. P.                | RS. A. P.                           |
| <b>Aided Institutions—cont.</b>                                                |                |                                     |                                                                          |           |                              |                  |                   |               |                          |                                     |
| Tinnevely—<br>B.C. Lacs School, Vada-<br>kangulam.                             | Girls.         | 90                                  | 897 14 0                                                                 | ..        | 800 0 0                      | ..               | ..                | ..            | 583 9 0                  | 2,281 7 0                           |
| Hindu Girls' School,<br>Kudangulam                                             | Do.            | 43                                  | 784 0 0                                                                  | ..        | 400 0 0                      | ..               | ..                | ..            | 286 12 0                 | 1,450 12 0                          |
| Holy Cross Industrial<br>School, Tuticorin.                                    | Do.            | 96                                  | 3,848 12 0                                                               | ..        | 700 0 0                      | ..               | 65 0 0            | ..            | 4,226 12 0               | 8,840 8 0                           |
| Anjengo—<br>Sacred Heart Convent<br>Industrial School,<br>Anjengo.             | Do.            | 40                                  | ..                                                                       | ..        | 300 0 0                      | ..               | 161 8 0           | ..            | ..                       | 461 8 0                             |
| Chingleput—<br>Wesleyan Mission Indus-<br>trial School, Ikkadu.                | Do.            | 161                                 | 45,919 11 11                                                             | 6 3 0     | 1,500 0 0                    | ..               | 900 0 0           | ..            | 99 2 5                   | 48,425 6 4                          |
| Malabar—<br>Commonwealth Embroi-<br>dery School, Calicut.                      | Do.            | 59                                  | ..                                                                       | ..        | 800 0 0                      | ..               | ..                | ..            | ..                       | 800 0 0                             |
| Trichinopoly—<br>Holy Cross Convent Indus-<br>trial School, Trichino-<br>poly. | Do.            | 69                                  | 3,056 6 6                                                                | ..        | 700 0 0                      | ..               | 145 0 0           | ..            | 2,702 13 8               | 6,604 4 2                           |
| Guntur—<br>A.B.M. Girls' Industrial<br>School, Ongole.                         | Do.            | 20                                  | ..                                                                       | ..        | 300 0 0                      | ..               | 60 12 0           | ..            | 960 0 0                  | 1,320 12 0                          |
| Tanjore—<br>Leipzig Mission Women's<br>Industrial School, Maya-<br>varam.      | Do.            | 51                                  | 5,114 4 2                                                                | ..        | 750 0 0                      | 300 0 0          | 188 0 0           | ..            | 4,530 0 0                | 11,152 4 2                          |

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|                                                                                                                                            |                   |          |                |            |                    |            |               |          |                      |                       |
|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------|----------------|------------|--------------------|------------|---------------|----------|----------------------|-----------------------|
| Nellore—<br>O.E.L.M. Girls' Industrial<br>School, Gudur.                                                                                   | Do.               | 29       | 2,563 0 0      | ..         | 400 0 0            | ..         | ..            | ..       | 2,270 0 0            | 5,233 0 0             |
| Chittoor—<br>A.A.M. Women's Indus-<br>trial Home, Palanur.                                                                                 | Do.               | 89       | ..             | ..         | 170 0 0            | 2,300 0 0  | ..            | ..       | 21,158 5 1           | 23,328 5 1            |
| Coinbatore—<br>L.M. Girls' Industrial<br>School, Erode.                                                                                    | Do.               | 62       | ..             | ..         | 500 0 0            | ..         | ..            | ..       | 421 0 0              | 921 0 0               |
| Madras—<br>Madras Seva Sadan Indus-<br>trial School, Madras.                                                                               | Do.               | 41       | 1,200 0 0      | 51 8 0     | 2,500 0 0          | 1,440 0 0  | 468 12 0      | ..       | 10,001 9 0           | 15,661 13 0           |
| Guntur—<br>St. Joseph's Orphanage<br>Girls' Industrial School,<br>Guntur                                                                   | Do.               | 20       | 815 6 6        | 59 0 0     | 400 0 0            | ..         | 69 8 0        | ..       | 1,447 9 0            | 2,791 7 6             |
| Nellore—<br>Girls' Industrial School,<br>Nellore.                                                                                          | Do.               | ..       | ..             | ..         | ..                 | ..         | ..            | ..       | ..                   | ..                    |
| South Arcot—<br>D.M. Lacs Industrial<br>School, Cuddalore.                                                                                 | Do.               | 7        | 2,002 15 7     | ..         | 200 0 0            | ..         | ..            | ..       | ..                   | 2,202 15 7            |
| Nilgiris—<br>Nazareth Convent<br>Industrial School,<br>Ootacamund.                                                                         | Do.               | 35       | 4,445 0 0      | ..         | 600 0 0            | ..         | 460 0 0       | ..       | 10,192 11            | 315,697 11 3          |
| Coinbatore—<br>Immaculate Conception<br>Convent Girls' Indus-<br>trial School, Coimba-<br>tore.                                            | Do.               | 61       | 2,627 4 0      | ..         | 750 0 0            | ..         | 150 0 0       | ..       | 3,131 11 0           | 6,658 15 0            |
| Madras—<br>St. Bridget's Industrial<br>School for Girls, Madras.<br>West Godavari—<br>The Alexander Girls' In-<br>dustrial School, Ellore. | Do.<br>Do.<br>Do. | 30<br>22 | ..<br>..       | ..<br>..   | 400 0 0<br>600 0 0 | ..<br>..   | 160 0 0<br>.. | ..<br>.. | 1,275 0 0<br>84 14 0 | 1,835 0 0<br>684 14 0 |
| Total ..                                                                                                                                   |                   | 1,429    | 87,856 4 9     | 117 0 0    | 17,230 0 0         | 4,040 0 0  | 2,899 12 0    | ..       | 70,757 4 10          | 1,82,900 5 7          |
| Grand Total ..                                                                                                                             |                   | 5,658    | 8,27,006 15 10 | 15,557 4 0 | 1,04,060 9 0       | 13,059 0 0 | 31,559 7 0    | ..       | 2,24,770 13 1        | 12,16,014 0 11        |

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# APPENDIX III. Statistics relating to recognized Industrial Schools for the year 1929-30.

| Serial number and name of the institution.     | Number on rolls 31st March 1930. | Subjects in which instruction is provided.                                                                                                                                              | Number of students who passed out in each subject. | Particulars as to the after-career of passed students.                                                                                                           | Approximate total annual value of work turned out. | Sale-proceeds of school manufactures. | Remarks. |
|------------------------------------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|---------------------------------------|----------|
| (1)                                            | (2)                              | (3)                                                                                                                                                                                     | (4)                                                | (5)                                                                                                                                                              | (6)                                                | (7)                                   | (8)      |
| 1. St. Joseph Industrial School, Trichinopoly. | 53                               | Foundry, turning and fitting and carpentry.                                                                                                                                             | Turning and fitting 1, carpentry 7.                | One is employed in the school itself, one in St. Joseph's College, Trichinopoly, in St. Mary's Estate, Madurai district and others have not yet left the school. | RS. A. P. 46,182 14 3                              | RS. A. P. 41,088 9 3                  |          |
| 2. C.N.T. Institute, Vepery, Madras.           | 328                              | Cabinet-making, mechanical engineering and metal work, weaving, oil, engine and motor car driving, electrical engineering and wiring, moulding, printing, rattan works and lock making. | .....                                              | ....                                                                                                                                                             | 12,963 0 0                                         | 9,712 0 0                             |          |
| 3. Wesleyan Mission Industrial School, Karur.  | 88                               | Carpentry and cabinet-making, blacksmithy, rattan and weaving.                                                                                                                          | 4 .. ..                                            | Three are working in the school and one is to join Tindivanam Training School.                                                                                   | ..                                                 | 36,932 9 7                            |          |
| 4. St. Joseph Industrial School, Tindivanam.   | 83                               | Cabinet-making and carpentry.                                                                                                                                                           | 9 .. ..                                            | Two at Tindivanam, two at Yercaud, one at Tanjore, one at Trichinopoly South Indian Railway, one at Pondicherry, one at Bangalore, and one at Chetpet.           | 22,788 5 3                                         | 21,866 5 3                            |          |

5. Anjuman-i-Ahli-Iskani, Madras.

Carpentry, carpet weaving and tailoring. Carpentry 9, carpet weaving 1. in cabinet-makers' shop at Bombay, one employed in cabinet-makers' shop at Singapore, four employed in local firms and one employed in Queen Mary's College; Carpet—One employed in Ramakrishna Mission Industrial school.

7,346 11 6

|                                                     |     |                                                                                      |                                                  |                                                                                                                                                                              |              |              |                                                              |
|-----------------------------------------------------|-----|--------------------------------------------------------------------------------------|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------|--------------------------------------------------------------|
| 6. A.A.M. Industrial School, Karpedi.               | 102 | Carpentry, cabinet-making, blacksmithy, motor mechanics and driving.                 | Carpentry 3, cabinet-making 2, Motor driving 13. | Working in the commercial section of the Institution. All have obtained posts as drivers and mechanics in the districts of Chittoor, North Arcot, South Arcot and Bangalore. | 2,79,652 0 0 | 2,46,649 0 0 |                                                              |
| 7. St. Joseph's Industrial School, Coimbatore.      | 159 | Carpentry .. .. Fitting .. ..                                                        | 15 } 14 }                                        | Some are employed in jails, some in schools and others in private firms.                                                                                                     | 93,000 0 0   | 92,180 12 11 |                                                              |
| 8. St. Francis Xavier's Industrial School, Tanjore. | 99  | Cabinet-making .. .. Cotton weaving .. ..                                            | 1 } 4 }                                          | One employed in the school, one employed in Tirupattur school.                                                                                                               | 17,000 0 0   | 17,025 15 6  |                                                              |
| 9. S.P.G. Art Industrial School, Nazareth.          | 107 | Carpentry, cabinet-making, weaving, tailoring, blacksmithy, motor driving mechanics. | Carpentry 9, weaving.                            | All are employed in their villages.                                                                                                                                          | 23,074 0 0   | 23,074 0 0   |                                                              |
| 10. St. Aloysius' Industrial School, Vizagapatnam.  | 15  | Fitters and motor car work.                                                          | 10 .. ..                                         | Nine are employed in private firms and one has started a motor company at Trichur.                                                                                           | ..           | ..           | Particulars in respect of columns (7) and (8) not available. |
| 11. Coles Vocational Middle School, Karnool.        | 49  | Weaving, carpentry and tailoring.                                                    | 11 .. ..                                         | All entered mission service as teachers in villages.                                                                                                                         | 1,960 0 0    | 1,400 0 0    |                                                              |
| 12. All Saints Boys Industrial School, Puthur.      | 41  | Cabinet-making, rattan making and blacksmithy.                                       | 2 .. ..                                          | Both have joined the railway workshop at Goldenrook.                                                                                                                         | 3,800 0 0    | 2,295 2 0    |                                                              |

**APPENDIX III—cont.**  
**Statistics relating to recognized Industrial Schools for the year 1929-30—cont.**

| Serial number and name of institution.                                       | Number on 31st March 1930 | Subjects in which instruction is provided.                   | Number of students who passed out in each subject.                     | Particulars as to the after-career of passed students.                                                                                                                                                                | Approximate total annual value of work turned out. | Sale-proceeds of school manufactures. | Remarks.                                                                                                                              |
|------------------------------------------------------------------------------|---------------------------|--------------------------------------------------------------|------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| (1)                                                                          | (2)                       | (3)                                                          | (4)                                                                    | (5)                                                                                                                                                                                                                   | (6)                                                | (7)                                   | (8)                                                                                                                                   |
| 13. St. Mary's Industrial School, Kumbakonam.                                | 70                        | Cabinet-making, suit-<br>thy and fitting.                    | 7 .. ..                                                                | Employed as carpen-<br>ters; one has open-<br>ed a workshop.                                                                                                                                                          | RS. A. P.<br>33,350 6 3                            | RS. A. P.<br>41,415 0 1               |                                                                                                                                       |
| 14. Anjuman Industrial School, Vellore.                                      | 55                        | Cabinet-making ..                                            | 3 .. ..                                                                | Employed as carpen-<br>ters.                                                                                                                                                                                          | 12,000 0 0                                         | 7,000 0 0                             |                                                                                                                                       |
| 15 C.S.M. Agricultural School, Melrosapuram.                                 | 64                        | Agriculture and allied trades.                               | 5 .. ..                                                                | Employed as agricul-<br>turists.                                                                                                                                                                                      | 1,770 0 0                                          | 1,742 1 5                             |                                                                                                                                       |
| 16. D.M. Industrial School, Paruti.                                          | 103                       | Cabinet-making, weaving and motor-driving.                   | Cabinet-making 5 ..<br>Weaving 2 .. ..                                 | Employed as carpen-<br>ters<br>Employed as teachers.                                                                                                                                                                  | 11,159 11 1                                        | 10,704 3 3                            |                                                                                                                                       |
| 17. A.A.M. Industrial School, Saidapet.                                      | 18                        | Cabinet-making, Printing.                                    | 2 .. ..                                                                | One employed as car-<br>penter, etc.                                                                                                                                                                                  | 6,442 1 5                                          | 10,648 14 8                           |                                                                                                                                       |
| 18. Anjuman Industrial School, Mel-<br>visaram.                              | 52                        | Cabinet-making ..                                            | Nil.                                                                   | ....                                                                                                                                                                                                                  | 6,812 0 0                                          | 6,075 0 0                             |                                                                                                                                       |
| 19. Raja's Industrial School, Parla-<br>kimedi.                              | 25                        | Do.                                                          | ....                                                                   | ....                                                                                                                                                                                                                  | 4,807 6 11                                         | 4,434 2 11                            |                                                                                                                                       |
| 20. Orr Assisted Indus-<br>trial School,<br>Madras.                          | 27                        | Scientific instrument<br>making.                             | ....                                                                   | ....                                                                                                                                                                                                                  | ..                                                 | ..                                    | Figures for col-<br>umns 3 and 4 not<br>available. The<br>classes being<br>work classes,<br>there are no<br>receipts.                 |
| 21 St. Joseph's Indus-<br>trial School,<br>Adaikalapuram.                    | 57                        | Cabinet-making and<br>weaving.                               | Cabinet-making 5 ..<br>Weaving 12 ..                                   | Employed as carpen-<br>ters.<br>Employed as teachers.                                                                                                                                                                 | 1,267 6 8                                          | 3,007 3 0                             |                                                                                                                                       |
| 22. Commonwealth<br>Trust Engineer-<br>ing Works<br>Classes, Marga-<br>lore. | 14                        | Fitter's work ..                                             | 5 .. ..                                                                | Employed as impro-<br>vers in the various<br>Departments.                                                                                                                                                             | ..                                                 | ..                                    | The classes being<br>works classes,<br>there are no<br>receipts.                                                                      |
| 23. Pasmalai Trades<br>School, Pasu-<br>malai.                               | 63                        | Printing, carpentry,<br>blacksmithy, fitting<br>and driving. | (1) Printing 3, (2)<br>Blacksmithy 1, (3)<br>Fitting and driving<br>2. | (1) All employed in<br>the Trade School,<br>(2) employed in the<br>school, (3) one is<br>sent for training<br>to Massey and Co.,<br>and the other emp-<br>loyed in the Tirupa-<br>tur eye hospital<br>electric plant. | 55,961 12 7                                        | 56,117 13 7                           |                                                                                                                                       |
| 24. Board Panchama<br>School, Yenmi-<br>ganur.                               | ..                        | ....                                                         | ....                                                                   | ....                                                                                                                                                                                                                  | ..                                                 | ..                                    | Recognition with-<br>drawn.                                                                                                           |
| 25. C.M.S. Industrial<br>School for Blind,<br>Palanicothah.                  | 64                        | Weaving and rattan<br>work.                                  | ....                                                                   | ....                                                                                                                                                                                                                  | 5,274 0 0                                          | 4,266 0 0                             | The passed blind<br>pupils are not<br>discharged from<br>the school.                                                                  |
| 25. Ramakrishna<br>Students' Home<br>Industrial School,<br>Mylapore.         | 27                        | Mechanical engineer-<br>ing metal work and<br>wood work.     | ....                                                                   | ....                                                                                                                                                                                                                  | 700 0 0                                            | 622 0 0                               | Only four years<br>have been comp-<br>leted since the<br>opening of the<br>school and no<br>candidate has<br>completed his<br>course. |
| 27. Sri. Rau Motor<br>School, Madras.                                        | 64                        | Motor-car driving and<br>mechanism.                          | ....                                                                   | ....                                                                                                                                                                                                                  | ..                                                 | ..                                    |                                                                                                                                       |
| 28. St. Joseph's Indus-<br>trial School,<br>Gunalala.                        | 60                        | Cabinet-making and<br>fitting.                               | ....                                                                   | ....                                                                                                                                                                                                                  | 10,500 0 0                                         | 5,451 0 0                             | The school has been<br>started only about<br>4 years ago.                                                                             |

# APPENDIX III—cont.

## Statistics relating to recognized Industrial Schools for the year 1929-30—cont.

| Serial number and name of institution.                    | Number on rolls 31st March 1930. | Subjects in which instruction is provided.          | Number of students who passed out in each subject.         | Particulars as to the after-career of passed students.                                                                                  | Approximate total annual value of work turned out. | Sale-proceeds of school manufactures. | Remarks.                                                                       |
|-----------------------------------------------------------|----------------------------------|-----------------------------------------------------|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|---------------------------------------|--------------------------------------------------------------------------------|
| (1)                                                       | (2)                              | (3)                                                 | (4)                                                        | (5)                                                                                                                                     | (6)                                                | (7)                                   | (8)                                                                            |
| 29. The Borsal School, Tanjore.                           | 251                              | Cabinet-making, weaving, blacksmithy and tailoring. | Cabinet-making 42, weaving 39, smithy 14 and tailoring 28. | ....                                                                                                                                    | Rs. A. P.<br>84,217 5 4                            | Rs. A. P.<br>75,795 0 0               | The inmates are discharged as and when they completed their term of detention. |
| 30. C.B.M. Industrial School, Cocanada.                   | 37                               | Cabinet-making and motor car work.                  | Motor car work 2 ..                                        | Employed as drivers.                                                                                                                    | 2,000 0 0                                          | 1,400 0 0                             |                                                                                |
| 31. L.M. Weaving School, Erode.                           | 90                               | Weaving, dyeing, spraying and stamping.             | ....                                                       | ....                                                                                                                                    | 3,000 0 0                                          | 1,918 12 9                            | The school has been started only four years ago.                               |
| 32. The Madras Penitentiary Carpentry Classes, Madras.    | 53                               | Cabinet-making ..                                   | 11                                                         | These are recommended for transfer to different jails as assistant convict instructors. Intends to undergo technical teachers training. | 38,197 13 9                                        | 7,869 9 11                            |                                                                                |
| 33. Sri Krishna Parimalayam, Industrial School, Cowlaram. | 17                               | Do ..                                               | Cabinet-making 1 ..                                        | ....                                                                                                                                    | 830 0 0                                            | 330 0 0                               |                                                                                |
| 34. Y.M.C.A. Industrial School, Areakole.                 | 37                               | Weaving and cabinet-making.                         | ....                                                       | ....                                                                                                                                    | 1,108 7 9                                          | 824 3 9                               |                                                                                |
| 35. C.S.M. Industrial School, Dindigul.                   | 47                               | Cabinet-making and metal work.                      | ....                                                       | ....                                                                                                                                    | 8,400 0 0                                          | 6,956 1 9                             |                                                                                |
| 36. Perambur Industrial School, Perambur.                 | ..                               | ....                                                | ....                                                       | ....                                                                                                                                    | ..                                                 | ..                                    | Recognition withdrawn.                                                         |

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| Serial number and name of institution.                         | Subjects in which instruction is provided.           | Number of students who passed out in each subject. | Particulars as to the after-career of passed students.                                  | Approximate total annual value of work turned out. | Sale-proceeds of school manufactures. | Remarks.                                           |
|----------------------------------------------------------------|------------------------------------------------------|----------------------------------------------------|-----------------------------------------------------------------------------------------|----------------------------------------------------|---------------------------------------|----------------------------------------------------|
| (1)                                                            | (2)                                                  | (3)                                                | (4)                                                                                     | (5)                                                | (6)                                   | (7)                                                |
| 37. St. Moyvis' Supplementary Industrial Classes, Vizagapatam. | Drawing and mechanical engineering subjects.         | 10                                                 | Employed as drivers                                                                     | ..                                                 | ..                                    | The classes being works there are no receipts.     |
| 38. U.L.C.M. Industrial School, Lam Rural School, Guntur.      | Agriculture and allied trades.                       | 9                                                  | 3 acres are given to each who cultivate the lands.                                      | 1,210 0 0                                          | 275 0 0                               |                                                    |
| 39. P.S.G. & Sons Charity Industrial Institute, Peelamedu.     | Mechanical engineering, carpentry.                   | ..                                                 | ....                                                                                    | 70,366 5 2                                         | 65,004 10 11                          |                                                    |
| 40. Andhra Jatheeya Kalasala, Masulipatam.                     | Metal work and carpentry and Mechanical Engineering. | 7                                                  | Two working in the Workshops, two at Vizagapatam harbour, one irons works, Bhadravathi. | 9,960 5 0                                          | 9,088 0 6                             |                                                    |
| 41. Anjuman-i-Oosmania Industrial School, Tirupattur.          | Cabinet-making ..                                    | ..                                                 | ....                                                                                    | 2,091 0 0                                          | 400 0 0                               | The school is in the second year of existence.     |
| 42. U.F.C.M. Industrial School, Chingleput.                    | Lace-making ..                                       | 11                                                 | 10 are working at Home and one unfit to work.                                           | 1,690 5 4                                          | 1,555 7 4                             |                                                    |
| 43. C.S.M. Girls' Industrial School, Kilpauk.                  | Lace-making and embroidery.                          | ..                                                 | Employed as teachers.                                                                   | 2,077 7 9                                          | 1,475 15 5                            |                                                    |
| 44. D.M. Girls' Industrial School, Keelur.                     | Embroidery ..                                        | 16                                                 | Seven married, four sick, two for nurses training and three stopped.                    | 4,500 0 0                                          | 4,753 5 0                             |                                                    |
| 45. Wesleyan Mission Lace School, Karur.                       | Lace-making ..                                       | 8                                                  | Employed as out-workers in their own villages.                                          | 550 0 0                                            | 489 12 7                              |                                                    |
| 46. St. Joseph's Convent Girls' Industrial School, Madura.     | Embroidery ..                                        | 24                                                 | Do.                                                                                     | 7,085 3 0                                          | 5,265 3 0                             |                                                    |
| 47. S.F.G. Lace School, Idayangudi.                            | ....                                                 | ..                                                 | ....                                                                                    | ..                                                 | ..                                    | Recognition withdrawn.                             |
| 48. S.P.G. Lace School, Kundangulam.                           | ....                                                 | ..                                                 | ....                                                                                    | ..                                                 | ..                                    |                                                    |
| 49. St. Joseph's Girls' Industrial School, Bellary.            | Lace-making, embroidery and general needle crafts.   | ..                                                 | ....                                                                                    | 849 0 0                                            | 609 0 0                               | Particulars for columns (4) and (5) not available. |

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# APPENDIX III—cont. Statistics relating to recognized Industrial Schools for the year 1929-30—cont.

| (1)<br>Serial number and name of institution.             | (2)<br>Number on rolls 31st March 1930 | (3)<br>Subjects in which instruction is provided.  | (4)<br>Number of students who passed out in each subject. | (5)<br>Particulars as to the after-career of passed students. | (6)<br>Approximate total annual value of work turned out. | (7)<br>Sale-proceeds of school manufactures. | (8)<br>Remarks. |
|-----------------------------------------------------------|----------------------------------------|----------------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------------|-----------------------------------------------------------|----------------------------------------------|-----------------|
| 50. R.C. Lace School, Vadakungulam.                       | 90                                     | Lace-making ..                                     | 2                                                         | Working in the school. Employed as out-worker.                | RS. A. P.<br>1,080 0 0                                    | 897 14 0                                     |                 |
| 51. Hindu Girls' Industrial School, Kundangulam.          | 43                                     | Do. ..                                             | 7                                                         | ....                                                          | 764 0 0                                                   | 397 0 0                                      |                 |
| 52. Holy Cross Industrial School, Tuticorin.              | 96                                     | Lace-making and embroidery.                        | ....                                                      | ....                                                          | 3,848 12 0                                                | 3,848 12 0                                   |                 |
| 53. Sacred Heart Convent Industrial School, Anjengo.      | 40                                     | Lace-making, embroidery and general needle crafts. | 1                                                         | Employed as out-worker.                                       | 61 7 10                                                   | 101 6 10                                     |                 |
| 54. Wesleyan Mission Industrial School, Ikadu.            | 161                                    | Lace-making, embroidery and weaving.               | Embroidery 5 ..                                           | Do.                                                           | ..                                                        | 44,000 0 0                                   |                 |
| 55. Commonwealth Embroidery School, Calcut.               | 59                                     | Embroidery and drawn thread work.                  | 6                                                         | Employed in the factory.                                      | 8,710 0 0                                                 | 8,115 0 0                                    |                 |
| 56. Holy Cross Convent Industrial School, Trichinopoly.   | 69                                     | Embroidery and general needle crafts.              | ....                                                      | ....                                                          | 5,025 10 0                                                | 3,056 6 6                                    |                 |
| 57. A.B.M. Girls' Industrial School, Ongole.              | 20                                     | Lace-making and embroidery.                        | 1                                                         | Employed as out-worker.                                       | 100 0 0                                                   | 75 0 0                                       |                 |
| 58. Leipzig Mission Women's Industrial School, Mayavaram. | 51                                     | Weaving and mat and dress-making.                  | Mat making 4 and weaving 5.                               | Do.                                                           | 6,000 0 0                                                 | 5,114 4 2                                    |                 |
| 59. O.E.L.M. Girls' Industrial School, Gudur.             | 29                                     | Lace-making ..                                     | 1 .. ..                                                   | Do.                                                           | 3,000 0 0                                                 | 2,500 0 0                                    |                 |

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|                                                                         |    |                                                    |                              |                                       |           |           |                                                |
|-------------------------------------------------------------------------|----|----------------------------------------------------|------------------------------|---------------------------------------|-----------|-----------|------------------------------------------------|
| 60. A.A.M. Women's Industrial Home, Palmaner.                           | 89 | Lace-making, embroidery and general needle crafts. | 14 .. ..                     | Do.                                   | 5,150 0 0 | ..        |                                                |
| 61. London Mission Girls' Industrial School, Erode.                     | 62 | Basket and mat-weaving.                            | 5 .. ..                      | Employed in their villages.           | 330 0 0   | 290 0 0   |                                                |
| 62. Madras Seva Sadan Industrial School, Mylapore.                      | 41 | Weaving, lace-making, embroidery and rattan work.  | Rattan work 2 and weaving 2. | Employed as teachers in Secunderabad. | 1,435 9 6 | 889 13 0  |                                                |
| 63. St. Joseph's Orphanage Girls' Industrial School, Guntur.            | 20 | Dress-making and general needle crafts.            | 2 .. ..                      | Gone for higher studies.              | 900 0 0   | 815 0 0   |                                                |
| 64. Girls' Industrial School, Nellore.                                  | .. | ....                                               | ....                         | ....                                  | ..        | ..        |                                                |
| 65. Danish Mission Lace Industrial School, Cuddalore.                   | 7  | Lace making ..                                     | ....                         | ....                                  | ..        | 202 15 7  |                                                |
| 66. Nazareth Convent Girls' Industrial School, Ootacamund.              | 35 | Lace-making and embroidery.                        | ....                         | ....                                  | 6,486 6 0 | 4,168 0 0 | The pupils are in the second year of training. |
| 67. Immaculate Conception Convent Girls' Industrial School, Coimbatore. | 61 | Do.                                                | ....                         | ....                                  | 3,850 4 0 | 2,627 4 0 | Do.                                            |
| 68. St. Bridget's Industrial School for Girls, Madras.                  | 30 | Needle work, plain and fancy cookery.              | ....                         | ....                                  | 1,522 6 0 | 1,522 6 0 | Newly recognized.                              |
| 69. The Alexander Girls' Industrial School, Elore.                      | 22 | Tailoring, dress making and tape weaving.          | ....                         | ....                                  | 467 1 9   | 299 2 7   | Do.                                            |
| 70. Jacquard Weaving School, Kumbakonam.                                | 6  | Jacquard weaving.                                  | ....                         | ....                                  | 90 0 0    | ..        | Do.                                            |
| 71. St. Ignatius Industrial School, Tuticorin.                          | 20 | Carpentry.                                         | ....                         | ....                                  | 500 0 0   | 340 0 0   | Do.                                            |

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that if, from a domesticated colony of bees, the first store is removed, the bees will start storing again and will do so every time their store is lost, provided, of course, such losses occur within the honey flow season leaving a margin in that season for the bees to collect finally. A thorough knowledge on the part of the bee-keeper of the possibilities of the season every year becomes therefore very essential.

The protection against enemies and the proper housing afforded to bees in domestication coupled with the help given by the bee-keeper to conserve the temperature of the hives by regulating accommodation and to increase their population by swarm prevention operations must naturally result in larger productions. A domesticated colony therefore ought to and does produce a lot more honey than a colony in nature.

*Our experience.*—In a favourable season, a crop of twenty pounds can be had from each hive. For this was the collection made by us in 1929 which was a year which was below average in respect of rainfall. At each extraction 2 lb. or a little less was the result, the frequency of this operation depending of course on the quantity of honey flow available in the fields. May-July is usually the period of heavy flow.

We had six hives in 1929. Only three of them were strong and paid over Rs. 60. There are at present 30 strong colonies and the total income from them will be known by the end of August this year. I am receiving very good reports about the quantities of honey they give. Judging from these reports, I have reason to believe that 20 lb. from each hive will be possible this year also.

Wax, a by-product, to the value of 8 annas can be had from each hive in a year, not to speak of the helpfulness to field crops and fruit-trees of the proximity of an apiary. Since introducing bee-keeping we have had better results from our own fruit-trees and our neighbours have benefited too. In fact, bee-keeping has several advantages over poultry-keeping and gardening. In the first place, very little initial expense is required for starting with bees, there is practically no feeding expense, an apiary does not demand daily attention, does not occupy a large space and the produce, viz., honey can directly be taken to the table without any need for cooking. It is A-1 food.

*Should bees be purchased?*—No. There are innumerable colonies of the Indian Bee almost everywhere in India. Even in the most unlikely places they are found to thrive. How to catch them and hive them in a modern frame hive is all that has to be learnt by anyone who wants to make a start. No money need be spent in buying bees. The hive can be made even by a village carpenter and does not cost more than Rs. 5. The methods of hiving differ according to the circumstances in which a natural colony is found, but since they are all common sense methods they can be mastered by anyone, say, within a week. Only if the newly caught colony is not up to the mark in respect of population a little artificial feeding (sugar syrup) may have to be done. Otherwise, no need for this. In Ramanathapuram we use plantain fibre instead of steelwire for binding combs with better results. No smoker need be employed to subjugate bees in the warm climate of India. For bee brush we use large feathers or the kitchen *சாதுமேல்*, a mere bamboo tube. For ant-preventors coconut shells are used. We have not yet thought out anything to take the place of the honey extractor which costs about Rs. 15. But this extractor is, it must be remembered, not an annual or recurring charge. It is our hope that the village butter churn, with some sort of holder for the combs, attached to it might supersede this extractor in the villages.

*How to get the best results?*—Selection, knowledge, work, means success in bee-keeping. To get the best results, therefore, a first-rate training must be taken. To be an all-round bee-keeper not only such a training, which should in length correspond to a full honey flow season, is necessary but also the application of the knowledge thus gained with as much industry as that of the bee itself. Six months—April to September—may be quite sufficient for a thorough training. Over 80 men have been trained by us for varying periods and several of them do make a success of their apiaries.

*How many hives can be kept in one locality?*—The number of hives for a given locality will depend upon the pasturage available for the bees kept. We would therefore suggest that six hives may be located in a place, to start with and, as its possibilities become known, more may be added. We have nearly 32 hives in Ramanathapuram, large and small all told, and know that there is still room for more hives judging from the collections.

*Can bee-keeping be a full-time occupation?*—We cannot answer this question yet. But we are sure that it is a very profitable subsidiary industry, because we have tried it only on this scale with success. In a few years more we shall be in a position to answer the above question one way or the other satisfactorily.

*Is there a market for honey?*—Enormous demand exists for pure honey, as evidenced by the innumerable prepaid orders we receive long before the honey season. Recently at the suggestion of Mr. Bazi-ul-lah Sahib, late Director of Industries, we put up the price from Re. 1 per pound to Rs. 1-4-0 per pound. The demand has increased in spite of this.

*Who can keep bees?*—Everyone who has a head and hands, including old women. It is easy work.

*An estimate for a six-hive apiary for one year.*

| RECEIPTS.                                                  |     |       | EXPENSES.                                                                |     |       |
|------------------------------------------------------------|-----|-------|--------------------------------------------------------------------------|-----|-------|
|                                                            | RS. | A. P. |                                                                          | RS. | A. P. |
| 60 lb. extracted honey at Re. 1 a pound .. ..              | 60  | 0 0   | 6 hives with body box super-frames, bottom board and roof complete .. .. | 30  | 0 0   |
| Wax collections .. ..                                      | 2   | 0 0   | 1 honey extractor .. ..                                                  | 15  | 0 0   |
| Increase in number of colonies (6 swarms) at Rs. 2 each .. | 12  | 0 0   | Sugar syrup .. ..                                                        | 1   | 0 0   |
|                                                            |     |       | Feeder (an ordinary cigarette tin) .. ..                                 | 0   | 0 6   |
|                                                            |     |       | An uncapping knife for use on combs in extraction .. ..                  | 1   | 0 0   |
|                                                            |     |       |                                                                          | 47  | 0 6   |
|                                                            |     |       | Profit .. ..                                                             | 26  | 15 6  |
|                                                            |     |       |                                                                          | 74  | 0 0   |
|                                                            | 74  | 0 0   |                                                                          |     |       |

- Note.*—1. The colonies have paid for their hives and extractor in one year.  
 2. The extractor cannot be a charge any more.  
 3. Sugar syrup is only necessary if there are weak colonies.  
 4. Liberal provision is made for expenses.  
 5. A very conservative estimate has been made for receipts.

# Government of Madras

## DEVELOPMENT DEPARTMENT

**G.O. No. 1785, 24th September 1930**

Industries—Administration Report—1929—30—Recorded.

**READ—the following paper:—**

From the Director of Industries, dated 13th August 1930,  
No. 227-E/30.

**Order—No. 1785, Development, dated 24th September 1930.**

Recorded.

2. The Department took part during the year in a number of agricultural and industrial exhibitions held in various parts of the Presidency and the Bureau of Industrial and Commercial Information maintained by it continued to supply general and statistical information on industrial and commercial subjects.

3. There were a few cases of delay in the disbursement of loans sanctioned under the State Aid to Industries Act, due mainly to the observance of various formalities connected with insurance and registration and the preparation and scrutiny of mortgage deeds in respect of small scale and cottage industries. The question of simplifying the procedure and the adoption of a standardized form of mortgage deed is under the consideration of the Government. The amendment of the Act undertaken with the specific object of promoting cottage and small scale industries and the attempts made by the Department to promulgate the facilities afforded by the Act do not appear to have led to any appreciable increase in the number of applications for State aid. The Act has recently been further amended with a view to empowering the Government to grant loans to an industrial concern up to a limit of Rs. 40,000 even if they exceed 50 per cent of the value of the net assets. It is hoped that these amendments will lead in time to small as well as large scale industrialists resorting to the facilities provided by the Act in larger numbers.

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4. The Cottage Industries Committee appointed in October 1929, in pursuance of a resolution moved in the Legislative Council, for the purpose of examining the Special Officer's report and submitting proposals for an effective organization of such of the industries as deserved encouragement has formulated its recommendations in respect of 15 major industries and the Committee's report has also been published. The Government have called for from the departmental heads concerned detailed proposals with estimates of financial effect regarding the various recommendations made. Separate action has already been taken on the recommendations of the Special Officer referring to particular tracts and this is summarized in paragraph 25 of the Director's report.

5. The Kerala Soap Institute at Calicut besides manufacturing soap on a commercial scale, provides instruction in soap-making to candidates intending to make soap manufacture their profession. In its commercial venture, it sustained a loss of Rs. 21350 and the reasons are detailed in the Director's report. It is encouraging to note that the instructions imparted in the Institute is in demand and the students who completed their training at the Institute are desirous of developing the industry on right lines. The Government have sanctioned the continuance of the Institute for a period of three years from 1st April 1930 and in addition to the training of candidates in the art of soap-making it will undertake experiments in connexion with the refining and deodorization of oils and fats and the hydrogenation of oils and fats on the lines proposed by the Director. In view of the growing difficulties in the marketing of the Institute products the question is under consideration whether the Institute may not restrict manufacture to what is absolutely necessary for the proper and efficient training of apprentices and conduct of experimental research recently sanctioned.

6. Experimental manufacture of printers' ink was the chief line of work carried out in the Government Industrial Institute, Madras, during the year under review. The Institute will be continued under existing sanction till 31st March 1931. With a view to developing the minor chemical industries in the Presidency, the raw materials for which are available in abundance, the Director has recently suggested the permanent retention of the Institute and the staff now employed there. This suggestion is under consideration.

7. In pursuance of a recommendation made by the non-official members of the Textile Conference held in 1928, a Textile Advisory Committee was constituted in October 1929 to advise Government in all matters relating to the improvement of the textile industry and the betterment of the weaving classes. The Committee have

made various recommendations and they are under the consideration of Government. The Textile Institute is now housed in permanent buildings of its own and its equipment has been considerably augmented. It is hoped that its alumni with their efficient training and improved outlook will pave the way for a more rapid assimilation by the weaving profession of modern and up-to-date methods of increasing their efficiency to combat and overcome the causes of their present social and economic difficulties.

The Peripatetic Weaving Parties and the Dyeing Party demonstrated improved methods and appliances. The creation of a Central Weavers' Society in Madras with co-operative organizations in the mufassal linked on to it is under the consideration of the Government. The appointment of a research engineer will, it is hoped, lead at no distant date, to the evolution of improved appliances for use by cottage workers.

8. Some satisfactory work was done at the Sericultural Farm at Coonoor. The hybridization of worms, however, received a set back on account of fungus disease persisting during greater part of the year. It is satisfactory to note the success that has attended private enterprise in the matter of mulberry cultivations and silk-worm rearing, due chiefly to the propaganda of the peripatetic rearing party. The Kollegal area continued to serve as a centre for distribution of disease-free seed. The newly started Farm at Hosur has made a good beginning.

9. The Engineering Branch continued to render assistance to agriculturists and small scale industrialists. The reduction effected in October 1927 in the scale of fees levied for work done by this section has led to some increase in the demand for the use of departmental plants and for other services afforded by the Branch.

Complaints have been received from the general public, local bodies and associations, that the department is not able promptly to comply with requisitions for departmental pumping and boring plants, although the number of power drills and hand-boring sets have of late been augmented. The Director has explained the causes for this inability and has made proposals for a more efficient and satisfactory utilization of the available departmental equipment.

The Director has submitted the final report on the survey of underground water-supply in Bellary Firka with a consolidated map, indicating in detail as far as possible, the results achieved from the boring operations in the area. It would appear from the results that where the surface soil is jet black cotton soil, the water

tapped underneath is invariably brackish, but where it is lighter in colour and contains considerable quantities of gravel, the water reached is generally less brackish, and that where the soil is red or of light sandy colour or gravelly in substance, the water tapped therefrom is generally drinkable.

The Industrial Engineering Workshop continued to maintain and repair the machinery employed by the pumping and boring and other branches of the department. Work was also executed for private owners of compounded installations. It served as a training ground for the subordinates of the Engineering Section.

10. Technical and research scholarships tenable in and outside the Presidency as well as those tenable abroad were granted as usual. The grants sanctioned for the Jamshedpur Technical Institute and the Indian Institute of Science have been renewed.

The number of aided schools increased but by one from 61 on 31st March 1929 to 62 on 31st March 1930. The progress made by the new Government schools at Mangalore, Bellary and Calicut was satisfactory. Additional funds have been allotted for the further development of these schools.

*Government Industrial Institute, Madura.*—In November last the Government appointed a committee to examine the present lines of working of the Institute and to suggest ways and means of minimizing the cost of its maintenance. The Committee's report was received in February last and orders have since been passed on their recommendations. The Institute will continue to work on the present lines and arrangements have been sanctioned for its undertaking iron work for the Public Works Department in the southern districts.

*Leather Trades Institute.*—Orders were issued during the year on the future of the Institute. The instructional side of the Institute has been closed down and the Institute will confine itself to research and to the conduct of analysis of tanning materials and of skins and hides intended for export. It will function as a centre for the provision of general advice and practical guidance to tanners with a limited staff requisite for the purpose.

*School of Arts and Crafts.*—The Government have passed orders on the recommendations of the Reorganization Committee. Both Fine Arts and Industrial Arts will be taught in the existing school; the formation of a separate school of Fine Arts will be considered if experience of the working of Fine Arts classes indicates its necessity.

There was a fall in the average number of pupils on the rolls and the average attendance during the year due to stoppage of admission in the latter part of the year, the removal of pupils who had been in the school for over five years and the abolition of part-time classes. The receipts from sales also considerably fell as compared with those of the previous year.

11. The Government congratulate M.R.Ry. Diwan Bahadur A. Appadurai Pillai Avargal on his efficient and successful administration of the department.

(By order of the Government, Ministry of Development)

S. V. RAMAMURTI,  
*Secretary to Government.*

Press.

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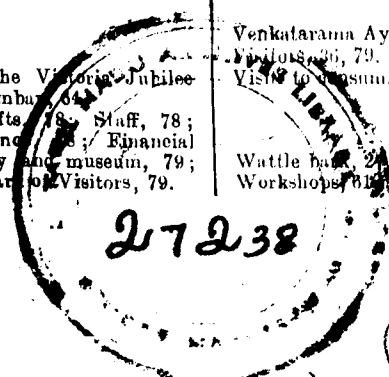
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