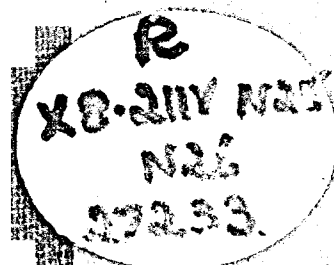


27233

ADMINISTRATION REPORT OF
THE DEPARTMENT OF
INDUSTRIES FOR THE YEAR
ENDED 31ST MARCH 1925.



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No. 153-E/25.

From

E. F. THOMAS, Esq., C.I.F., I.C.S.,
Director of Industries, Madras,

To

THE SECRETARY TO GOVERNMENT,
DEVELOPMENT DEPARTMENT.

Dated Madras, the 24th August 1925.

SIR,

I have the honour to submit the Administration Report of the Department of Industries for the year ended 31st March 1925.

2. Printed copies of the report will be forwarded to Government and to the Accountant-General as soon as they are received from the Press.

I have the honour to be,

Sir,

Your most obedient servant,

E. F. THOMAS,
Director of Industries.

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ADMINISTRATION REPORT OF THE DEPARTMENT
OF INDUSTRIES FOR THE YEAR ENDED
31st MARCH 1925.

PERSONNEL.

Direction.—I was in charge of the department throughout the year. Mr. L. B. Green, M.B.E., was in charge of the office of Deputy Director throughout the period under review.

2. *Tours.*—I was on tour for 106 days during the year exclusive of a stay of 84 days at Ootacamund. My tours covered a number of the more important industrial centres in the Presidency, and I also visited Bangalore on four occasions. The Deputy Director spent 28 days on tour and visited Coonoor, Calicut and Madura.

3. *District Exhibitions.*—In pursuance of the 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 industrial and agricultural exhibitions held in various parts of the Presidency, e.g., Tinnevely, Ottapidaram, Srirangam, Panruti, Madras, Cheyyar, Venkatagiri, Cuddapah, Kurnool, Anantapur, Karamadai and Tiruvattipuram. The majority of the exhibitions were held in connection with the district co-operative conferences. At the exhibition held at Tinnevely in July, a hand-boring set and a high-speed petrol pumping set were demonstrated, and opportunity was taken to explain to the ryots the facilities offered by the engineering branch of the department, as a result of which a number of enquiries were received for test engines and for the setting up of rice-hulling plants. At the exhibition held at Ottapidaram in September, the Assistant Industrial Engineer, Tanjore, demonstrated the working of a hand-boring set, and this was witnessed by a large number of ryots who had come in from the surrounding villages and from Tinnevely and Koilpatti. The working of a departmental boring set and of a new self-contained motor pumping set, recently placed on the market by Messrs. McDowell & Co., was demonstrated at the Karamadai festival. The Assistant Industrial Engineer also attended the Industrial and Agricultural Exhibition held at Srirangam in January 1925, at which a high-speed pumping set and a hand-boring set as well as a range of tools were exhibited. The Collector of Trichinopoly showed a great interest in the exhibition, and the activities of the department were

explained to the influential ryots who attended it. At the Panruti Exhibition held in November 1924 under the auspices of the South Arcot District Co-operative Conference, a successful demonstration of a hand-boring set and a high-speed petrol pumping set were conducted, and many enquiries were subsequently received. A very successful departmental display was organized in connection with the Swadeshi Industrial Exhibition held at Madras in December in conjunction with the Park Fair, at which a percussion type power drill, liquid fuel pumping set, high-speed pumping set and a hand-boring set as well as a representative display of ink and soap exhibits were shown and attracted considerable attention from the public. Each of the departmental exhibits secured a silver medal which was the highest award in its class. At the special request of the Health Officer, two pumping sets were also exhibited at the Health and Welfare Exhibition organized by the Corporation of Madras during the first week of January 1925, the object being to demonstrate how mosquito-breeding can be prevented by pumping out water from stagnant pools and how such water can be utilized for irrigation purposes. The Assistant Industrial Engineer attended the Exhibition held at Cheyyar in January 1925, at which a range of jams and soaps were exhibited. A hand-boring set and a high-speed petrol set were exhibited at the Industrial Exhibition at Venkatagiri organized by the Venkatagiri Gymkhana Club in March 1925; a representative range of soaps, inks, and jams as well as samples of leather manufactured at the Leather Trades Institute and an Amalsad patent hand sizing machine were also exhibited on that occasion. A certificate of merit was awarded to the departmental exhibit in each class, while the Government Industrial Institute and the Kerala Soap Institute secured a silver medal for its ink and soap respectively, and the Leather Trades Institute and the Textile branch each a gold medal also. At the Cuddapah Exhibition held in connection with the District Co-operative Conference in September 1924, inks, jams, soaps, a model of an 8-lever dobby and a hand-boring set were effectively demonstrated, and as a result of the practical demonstration of boring methods, two applications were received from the Municipal Chairman, Cuddapah, for the conduct of boring operations at the Municipal School Hostel and the Cuddapah Municipal High School. The Assistant Industrial Engineer, Bezwada, was in charge of the exhibit at the Kurnool Exhibition held in November-December 1924, which comprised a display of inks, jams and soaps as well as a hand-boring set and a high-speed petrol set; the Assistant Industrial Engineer interviewed the leading ryots of the district and explained to them the facilities offered by the department generally. A representative range of soaps, jams and inks were exhibited, and the operation of

a hand-boring set was also demonstrated at the Anantapur Exhibition held in November 1924. The products of the departmental factories were shown at an exhibition held at Tiruvattipuram, in connection with the North Arcot District Co-operative Conference. A range of soaps was also exhibited at the Health Week and Baby Shows held at Nannilam, Coimbatore, Calicut and Anjengo, whilst a display of insecticidal soap was arranged at the Jaggannath temple festival at Tellicherry. A great deal of interest was everywhere evinced in the departmental exhibits, and it is hoped that as a result of the publicity given to the facilities offered, the services of the department will become more frequently resorted to in the districts concerned, whilst there is reason to believe that sales of some of the products of the departmental factories have been stimulated by these displays.

4. *British Empire Exhibition.*—A detailed account of the organization and collection of suitable exhibits for display at the British Empire Exhibition, 1924, and of the success of the Madras Court was given in last year's administration report. The Madras Court, which was visited by about 70,000 people on an average every day during the period of six months that the Exhibition remained open, was arranged as an exposition of the raw products and manufactured articles of the Presidency, more with a view to advertise Madras goods than to dispose of them by direct sales. The sales were conducted with the object of introducing goods to the market or increasing a demand for them rather than to make a large turnover. Even so, the total sales in the Madras Court amounted to about £10,000 although this figure must be regarded as approximate, since it is not known what amounts were actually realized by the Cochin Durbar and by some of the larger firms, whose sales at Wembley were conducted by their own representatives in London. The articles which were mostly in demand were: lace, condiments, carpets, cotton prints, carved furniture, incense sticks, cigars, and the picture post cards specially printed by the Special Officer as a souvenir of the Madras Court. In all, there were 132 exhibitors at the Madras Court. A great deal of the Special Officer's time at Wembley was occupied by conversations with representatives of firms and individuals, to whom he supplied information in regard to the nature of the goods exhibited, their price and the sources from which they could be obtained. The Special Officer lost no opportunity of placing *bona fide* enquirers in touch with exhibitors or suppliers in India. The exhibitors generally were highly satisfied with the results of their display at Wembley. Moreover, there is reason to believe that the exhibition has stimulated interest in the arts, products and natural resources of the Madras Presidency,

and that a number of orders have actually resulted from the display of exhibits at the Madras Court. It may reasonably be hoped, therefore, that the display of Madras products at the exhibition will result in increased business in existing lines or in the establishment of new connections. The opportunities for establishing business connections overseas, which have been created by the exhibition of Madras products, require, however, to be followed up by the firms, who seek extended markets for their products. The Madras Court achieved a full measure of success in the task which it set out to accomplish, but the ultimate success of the exhibition must necessarily depend on the enterprise and energy with which this object is pursued.

5. The Special Officer, Rao Bahadur S. K. Sundaracharlu, returned to India from London on the 8th December 1924 and was subsequently engaged, up to the termination of his period of special duty on the 15th February 1925, in winding up the accounts and settling the claims of the several exhibitors. The final meeting of the Executive Committee was held on the 30th January 1925, when the official report of the Chairman and the statement of receipts and expenditure from 3rd January 1924 to 29th January 1925 were passed. In G.O. No. 377, Development, dated the 12th March 1925, Government published the report for general information and stated that the net cost of participation in the exhibition was apparently Rs. 1,69,740, which fell considerably below the estimated cost of Rs. 3,08,500. The Government placed on record their appreciation of the services rendered by the Chairman and Members of the Madras Executive Committee of the British Empire Exhibition and congratulated them on the success of the Madras Court. They noted also the Committee's expression of thanks to the Raja of Parlakimedi for his generous contribution to the exhibition and its appreciation of the energy, tact and resourcefulness shown by the Special Officer, M.R.Ry. Rao Bahadur S. K. Sundaracharlu Avargal.

6. *Lace and embroidery industry.*—It was stated in last year's administration report that the measures to be taken to improve and develop the existing lace and embroidery industry of the Presidency were engaging the attention of the department and that proposals had been submitted to Government for the appointment of a Lady Assistant temporarily to carry out a comprehensive survey of the lace and embroidery industry in the Presidency and to supply all the facts bearing on the question that could be collected within a reasonable period. These proposals were accepted by Government, and the services of Miss Tweddle, a missionary lady with considerable experience of the lace and embroidery industry and of the organization of cottage industries for Indian women, were kindly lent

by the Wesleyan Mission for a period of five months to carry out the survey. Miss Tweddle visited all the important centres of the industry in Southern India, conferred with the correspondents of industrial schools where instruction in lace and embroidery is imparted, discussed matters with various persons interested in the industry and collected a number of specimens of lace and embroidery. It was evident from her report, which was submitted to Government shortly before the close of the year under review, that the production of lace and embroidery in the several conventual institutions and that controlled by private enterprise in the Kistna district is considerable and capable of expansion if markets can be found. Miss Tweddle found in many institutions rather large accumulations of stocks owing to the dullness of markets and reported that the crochet lace industry of Kistna had contracted considerably owing to the same cause. It was obvious, therefore, that it would be unwise to undertake measures for expanding the industry, unless and until a wider outlet could be developed for the accumulated stocks and for the products of the women engaged in the industry, and that without an investigation into market overseas the survey carried out by Miss Tweddle would be largely nugatory. Government concurred in my view that it was necessary that the work so far done by Miss Tweddle should be followed up by an investigation of the possibilities of the market overseas. Accordingly, Miss Tweddle, who on the completion of her period of employment in the department proceeded on furlough to England by way of the East and North America, was entrusted with the task of investigating conditions in the Philippines and other Eastern countries with the products of which the Indian industry has to compete, and subsequently to inquire into the possibilities of markets in North America and in England as also possibly in other European countries. Miss Tweddle who was granted an honorarium of Rs. 2,000 for her services in connection with this further investigation left for England via the Far East in March.

7. Among other measures taken, independent of Miss Tweddle's survey, to assist the industry during the year were—

(i) the collection of information as to the patterns of lace and embroidery now in demand in the English and other overseas markets;

(ii) the distribution of lace patterns to the chief agencies engaged in the industry in this Presidency with a view to test the London market with counter samples manufactured here; and

(iii) stimulating a demand by enlisting the support of an English firm interested in the trade.

I am afraid, however, that the recent decision of the British Government to impose an import duty on all descriptions of lace and embroidery, whether made by hand or machine, will render very difficult the development of a demand for Indian lace in the English market.

8. *Statutory Board of Industries.*—The composition of the Board constituted by Government during the previous year, under section 3 (i) (a) of the Madras State Aid to Industries Act, 1922 (Act V of 1923), on the 1st April 1924, consisted of the following twelve members :—

- (1) Director of Industries, Chairman.
- (2) The Secretary to Government, Finance Department.
- (3) The Chief Conservator of Forests, Madras.
- (4) W. O. Wright, Esq., O.B.E., elected by the Madras Chamber of Commerce.
- (5) S. J. Green, Esq., elected by the Madras Trades Association.
- (6) M.R.Ry. Narayan Doss Girdhar Doss Avargal, elected by the South Indian Chamber of Commerce.
- (7) M.R.Ry. Diwan Bahadur K. Suryanarayanamurti Nayudu Garu, M.L.C., elected by the Madras Legislative Council.
- (8) M.R.Ry. Sami Venkatachalam Chettiyar Avargal, M.L.C., elected by the Madras Legislative Council.
- (9) M.R.Ry. Diwan Bahadur T. Namberumal Chettiyar Avargal.
- (10) M.R.Ry. Rao Sahib K. V. Ramachar Avargal, B.A., M.L.C.
- (11) M.R.Ry. C. V. Venkataramana Ayyangar Avargal, B.A., B.L., M.L.C.
- (12) M. N. Abdur Rahiman Sahib Bahadur ...

Non-officials appointed by Government under section 3 (2) of the Act.

with Mr. L. B. Green, Deputy Director of Industries, as Secretary to the Board.

Mr. S. J. Green proceeded to England in April 1924, and as it was expected that his absence from India would exceed three months, he was declared by Government, under rule 6 of the rules framed under the Act, to have ceased to be a member of the Board. The Madras Trades Association, who were thereupon requested to elect a new member in place of Mr. Green, re-elected that gentleman who returned to India in October 1924. Early in January 1925, Diwan Bahadur T. Namberumal Chettiar expressed his inability, owing to ill-health, to continue to serve on the Board, and in his stead Government appointed Rao Bahadur A. M. M. Murugappa Chettiyar Avargal, M.L.C.

9. Of the seven applications to which reference was made in the administration report of the preceding year, one was withdrawn, and in three cases in which the Board resolved by a unanimous

vote that it was unable to recommend the grant of a loan applied for, Government passed orders to the effect that they were precluded from granting any loan by the provisions of section 8(5) of the Act. In the case of the application from the South Indian Match Factory, Ltd., for a loan of a lakh of rupees, Government were precluded under the terms of the Act from granting a loan since the business of the factory was carried on at Tenmalai in the Travancore State outside the limits of the Madras Presidency. The remaining two cases were (1) application from Messrs. Muppuna Somaraju and Veeraraju, silk cloth manufacturers, Peddapuram, Godavari district, for a loan of Rs. 50,000 to develop their factory so as to permit of the preparation, twisting and dyeing of silk for handloom weavers, and (2) application from Messrs. Kelkar Bros., Managing Agents, the Kanara Rice and Saw Mills, Ltd., Coondapur, South Kanara district, for a loan of Rs. 10,000 for the purchase of a vertical band saw. The former application, which was unanimously recommended by the Board, was sanctioned by Government in G.O. No. 1531, Development, dated 30th August 1924, and the loan was disbursed to the firm on the 23rd December 1924. In the case of the latter which was supported by the Forest Department and also by the Board, Government in G.O. No. 312, Development, dated the 2nd March 1925, sanctioned a loan of Rs. 9,600 only since the net assets of the concern were considered inadequate to support a loan of any larger amount. The loan was disbursed to the company on the 31st March 1925.

10. During the year under review four meetings of the Board of Industries were held on the 25th August, 22nd October, 19th December 1924 and 7th February 1925. At these meetings the following new applications for assistance under the Act were considered :—

(i) Application from Sir Frederick Nicholson, K.C.I.E., for a subsidy of Rs. 9,000 under section 6(c) of the State Aid to Industries Act for the purpose of establishing an experimental toy factory at Cocnoor.

(ii) Application from Mr. V. N. Chelvaraya Mudaliyar, Muthialpet, Madras, for a loan of Rs. 6,500 for the purpose of establishing an oil-mill in the City of Madras.

(iii) Application from Mr. J. F. Kuehnelt, Madras, for a loan of Rs. 25,000 for the purpose of starting a factory for the burning of lime and soorki and the manufacture of constructional materials.

(iv) Application from the Carnatic Paper Mills, Ltd., Madras, for a loan of four lakhs of rupees, and in addition for the guarantee of an overdraft or fixed advance with a bank of two lakhs of rupees,

as also for the grant of certain concessions in respect of the supply at specially low rates of the water, bamboos and wood fuel required for the operation of their pulp and paper mills at Rajahmundry.

(v) Application from Messrs. V. C. Vellingiri Gounder and C. S. Vennal Nayudu, Proprietors of the Coimbatore Tile Works, for a loan of Rs. 70,000 (subsequently modified to Rs. 24,000) for the development of their factory.

(vi) Application from Messrs. Bommana Somaraju and Karra Mallikarjanudu, Uppada, Godavari district, for a loan of Rs. 20,000 under section 5(i)(c) of the State Aid to Industries Act, for the purpose of developing the manufacture of silk and cotton goods on cottage industry lines.

(vii) Application from the Kallakurichi Co-operative Agricultural and Industrial Society, Ltd., for a loan of Rs. 25,000 under section 6(a) of the State Aid to Industries Act, for the development of the industries carried on by the Society, viz., groundnut-decortiating, rice-hulling and sugarcane-crushing.

(viii) Application from the Zamindar of Singampatti for a loan of Rs. 30,000 for the purpose of reviving and developing his tile factory originally established at Singampatti and proposed to be transferred to Kalladaikurichi.

(ix) Application from M.R.Ry. D. Rangaswami Nayudu Garu, No. 3, Thandavaraya Pillai street, Madras, for a loan of Rs. 5,000 under section 6(a) of the State Aid to Industries Act, for the purpose of setting up two cotton gins in conjunction with an existing rice mill at Gudiyattam, North Arcot district.

(x) Application from the Kohinoor Saw Mill Co., Ltd., Balia-patam, North Malabar, for a loan of Rs. 50,000 under section 6(a) of the State Aid to Industries Act, for the purpose of developing their existing saw mill.

11. Of the applications mentioned in the preceding paragraph, Nos. (i) and (viii) which were considered by the Board and subsequently submitted to Government, were ultimately withdrawn by the parties concerned. In the case of applications Nos. (ii), (iii) and (v), the Board were unable to see their way to support them; they were very doubtful whether Nos. (ii) and (v) came within the scope of section (v) of the Act, while as regards No. (iii) the Board observed that the data furnished in regard to the prospects of the undertaking generally were not sufficiently convincing, and that moreover the applicant was not in a position to furnish the security prescribed by the Act. Finally, Government passed orders to the effect that they were unable to sanction the loans applied for. By far the most important application considered by the Board

during the year was that of the Carnatic Paper Mills, Ltd. (No. iv). The several aspects of this proposition were very carefully examined by the department and the Board of Industries, and it was not until all the doubtful points had been fully investigated and evidence was forthcoming that there was at least a reasonable prospect of the industry being successfully established with the aid of the loan under the Act, that the Board recommended the grant of the concessions applied for. Government accepted the recommendation of the Board, and in G.O. No. 175, Development, dated 2nd February 1925, sanctioned a loan of four lakhs of rupees to the company, and the amount was disbursed to them on the 14th March 1925. Government have, since the close of the year, sanctioned the lease to the company of the bamboo coupes in the Rekapalle reserve forests in the Upper Godavari for a period of three years on an annual payment of Rs. 10,000. The money was to be utilized in clearing off existing liabilities, and the Government hoped that the grant of the substantial loan would engender confidence in the soundness of the company's proposition and stimulate the flow of the further capital required. At the time of writing, this hope had not been fulfilled and the company is passing through a severe financial crisis. Lack of money alone has prevented the commencement of manufacture up to date. The question of the guarantee of two lakhs of rupees applied for by the company, as also that of the supply of water from the river Godavari at concessional rates, which were also recommended by the Board, were pending final disposal at the close of the year. The company did not press for the concessional supply of wood fuel since after further investigation, the utilization of coal for fuel appeared to be a more economic proposition. Application No. (ix) for a loan of Rs. 5,000 for setting up a small cotton ginnery in the North Arcot district secured the unanimous recommendation of the Board and was sanctioned by Government in G.O. No. 425, Development, dated the 23rd March 1925, though it was not possible to arrange for the loan to be disbursed to the party before the close of the year under review. The Board resolved unanimously to recommend the grant of the loan applied for by the Kallakurichi Co-operative Agricultural and Industrial Society No. (vii) subject to the assets, after verification, proving to be sufficient to support a loan of the required amount and to certain stipulations as to the manner in which the proceeds of the loan should be applied. This application was under the consideration of Government at the close of the year and has since been sanctioned. Application No. (vi) which was unanimously supported by the Board, was under the consideration of Government at the end of the year. In the case of the application of the Kohinoor Saw Mill Co., No. (x), the further investigation, as to the extent

of the available supplies of timber in North Malabar, which was initiated at the request of the Board, had not been completed by the close of the year.

12. We have now had more than a full year's experience of the working of the Act, but the experience gained in its administration and the conclusions which may be drawn therefrom can more appropriately be discussed in the annual report on the operations of the Statutory Board of Industries, which is being submitted to Government separately. The chief difficulty experienced was the interpretation that should be given to section 5 of the Act which defines the industries which may be aided under the Act. According to the section, they should be such as have an important bearing on the economic development of the country and should be (a) new or nascent industries, or (b) industries to be newly introduced into areas where such industries are undeveloped, or (c) cottage industries. The interpretation of the several clauses of this section of the Act gave rise to a considerable difference of opinion, and it is desirable that the industries to be assisted should be defined with a greater degree of exactitude as the interpretation of the condition, that the industry should have an important bearing on the economic development of the country, must be largely a matter of opinion. I am coming round to the view that the section is unnecessarily restrictive and might prevent aid being given to promising enterprises. During the year under review, Government approved the form of mortgage deed for use in connection with the grant of loans under the Act as also a list of auditors approved for purposes of rule 16 of the rules framed under the Act. When the rules under the Act were first framed, it was considered premature to make rules under certain of the sections, and the question was left over until sufficient experience had been obtained of the working of the Act. Experience having shown that it was necessary to frame rules under these sections of the Act, and particularly under section 9 and under certain clauses of section 19(b), the necessary rules were drawn up in consultation with the Board of Industries, and these were under the consideration of Government at the close of the year.

13. In concluding this necessarily brief review of the administration of the State Aid to Industries Act during the year, I may add that the work in connection with the scrutiny and consideration of the applications for assistance under the Act, involving as it does a careful examination and investigation of the several aspects of the various applications, has been of a very exacting nature and thrown a great deal of additional work on the Deputy Director, who is the Secretary to the Board, and on the Superintendent and

staff of the Bureau section of the office, who have carried out their duties very efficiently. Government will have observed from the reports on the applications, and the copies of notes circulated to the members of the Board, that the thorough, albeit sympathetic, examination to which applications are subjected leaves little to be desired from any point of view.

COMMITTEES.

14. *Leather Industry Committee and Committee on Technical and Industrial Education.*—During the year the orders of Government were received on the report of these two important committees appointed to examine the steps which are desirable to further the development of the leather industry of the Madras Presidency, with special reference to the constitution and aims of the Leather Trades Institute, and to enquire and report upon the present equipment of the Presidency in respect of technical and industrial education, respectively. Each Committee submitted a comprehensive report of considerable value and made a number of recommendations, the majority of which the Government were able to see their way to accept. The recommendations of the Committees and the Government orders thereon are referred to in detail in the appropriate sections of this report.

15. *Railway Local Advisory Committees.*—I continued to serve as the Government representative on the local Advisory Committees of the South Indian and Madras and Southern Mahratta Railway Companies during the year. Four meetings of the South Indian and three meetings of the Madras and Southern Mahratta Railway Advisory Committees were held during the period under review. I attended one meeting of the former and two of the latter, my other engagements having precluded more regular attendance.

16. *Apprenticeship Bill Committee.*—A reference was made in last year's administration report to the appointment by Government of a committee to supply the requisite material for the drafting of an Act in legal form. There was a change in the secretaryship of the committee—Mr. Fyfe, the permanent Inspector of Industrial Schools, succeeding Mr. Adyantayya, the latter of whom resigned consequent on his appointment as Officiating Industrial Engineer. The Committee met on four occasions during the year under review. The report of the Committee was submitted to Government in January 1925, and shortly before the close of the year it was published for general information.

17. *Jail Industries Committee.*—In G.O. No. 1931, Law (General) Department, dated the 30th June 1924, a committee consisting of five members, under the presidency of Mr. F. Noyce, C.S.I., C.B.E., I.C.S., was appointed to conduct an enquiry into

the condition of jail industries and to submit proposals for improving their present organization with a view to make them more efficient and self-supporting. I was appointed Member-Secretary of the Committee. The members of the Committee visited the more important jails of the Presidency and made a detailed inspection of the industries carried on there. The Committee submitted its report early in October, and it was under the consideration of Government at the close of the year.

18. *Co-ordination of work in Government Workshops Committee.*—In G.O.No. 1003 W., dated 10th September 1924, Government appointed a committee of officials and non-officials to examine the nature of the work done in each of the workshops and to advise as to how far the work done in the several workshops can be co-ordinated without unduly interfering with special departmental needs so as to avoid waste of labour and money. Mr. Green was appointed a Member of the Committee to represent the interests of the Department of Industries. The Committee had not submitted its report by the end of the year.

I

19. *General assistance to trade and industry.*—This work is carried on in the Bureau of Industrial and Commercial Information, the organization and objects of which are now so well known and have been so fully discussed in previous administration reports as hardly to call for detailed reference here. A very considerable number of inquiries on industrial and commercial subjects continued to be received during the year, and it is gratifying to know that the services which the Bureau is able to render are being appreciated to an increasing extent by the public who are constantly making use of the Bureau, and whose appreciation of the facilities which it offers is amply testified to by the numerous letters of thanks for information supplied or assistance rendered, which continued to be received during the year. The Bureau of Information has to deal daily with a large number of inquiries for information covering a wide range of commercial subjects. In case the Bureau has not the information desired, it can usually secure it more fully and with less delay than the individual firms or private persons. Nor must the essential personal nature of much of the work be overlooked. A considerable number of traders, merchants and industrialists including visitors from overseas, with or without letters of introduction from the Indian Trade Commissioner in London, call at the office to make verbal inquiries. It is difficult to determine what is the direct outcome of many of the inquiries,

but it is permissible to conclude that in most cases the information supplied or service rendered is turned to account, and the fact that the number of inquiries continue to increase affords *prima facie* evidence of its value and utility. It may fairly be claimed, I think, that the work of the Bureau is of real value to the public generally, who are becoming increasingly cognizant of the fact that advice and assistance on industrial and commercial questions is always at their disposal whenever they care to seek it.

20. *Commercial and industrial inquiries.*—A considerable number of inquiries continued to be received from the public and other Government departments during the year in regard to the sources of supply and markets for various articles and commodities and cognate questions. A number of references were, as usual, received from the Director General of Commercial Intelligence, Calcutta, in regard to overseas trade in general, and with reference to the financial standing and business reputation of firms in particular. The department was in close touch with the United States Trade Commissioner and the Assistant United States Trade Commissioner at Bombay and Calcutta respectively, who were furnished with reports on certain aspects of Madras trade, in which an interest had been evinced in America, and in return furnished this department with valuable information as to American trade conditions. Information was also exchanged from time to time with H. M. Trade Commissioner at Calcutta and with various foreign Consuls at Bombay, Calcutta and Madras. In connection with the applications of certain firms 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, the Chief Controller of Stores, Indian Stores Department, was furnished with reports on the firms' works, their capacity, financial standing, quality of the materials manufactured or supplied, etc.

21. It is difficult to give in a few paragraphs any real idea of the range and variety of work carried on by the Bureau or to summarize briefly the scope of the inquiries received during the year. The following may be mentioned as illustrating the wide range of the inquiries received: chemicals, drugs, dyes and tanning materials; vegetable and essential oils, mineral oils; lace, lametta and embroidery; minerals, metals and ores; hides, leather and leather goods; metals, machinery and engineering materials; fibres of various kinds, cotton and woollen yarn, etc. In last year's report I gave twelve examples of some individual services rendered by the Bureau, and I propose to adopt the same plan on this occasion as they will at least 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 firm in Coimbatore was furnished with detailed information in regard to the process of lacquering the inside of tins for the canning of jams and ginger preserves.

(ii) A firm manufacturing finished leather goods required supplies of waste lye liquor derived from paper manufacture. The several paper mills in India were addressed, and finally arrangements were made for the supply to the firm of a sample of the liquor which a mill offered to supply, and which *prima facie* appeared to be suitable for the purpose.

(iii) A firm producing firebricks forwarded for test and advice a specimen consignment of their manufactures. Arrangements were made to have the specimens tested at the departmental workshops, and subsequently a report embodying the results obtained with suitable advice for improving the quality of the firebricks was furnished.

(iv) An inquirer was furnished, on request, with information in regard to the possibilities of growing camphor in the Nilgiris as also with details of the experiments carried out in India in recent years and of the process employed in camphor distillation.

(v) A railway administration was supplied, with a comprehensive list of the names and addresses of manufacturers and wholesale suppliers of rape-seed oil in the Provinces of Bengal, United Provinces and Bihar and Orissa.

(vi) An inquirer was furnished with a description of the processes involved in curing raw cardamoms and converting them into finished form ready for the market.

(vii) A merchant in the Guntur district was furnished with a description of the processes followed on the West Coast for the drying and curing of green ginger for the purposes of inland and export trade.

(viii) A firm in the Kistna district who contemplated starting a soap factory was furnished with an estimate of the machinery and plant required for a factory capable of producing 5 tons of boiled soap per week and 5 cwts. of cold process soap per day.

(ix) An inquirer was furnished on request with a description of the machinery used in the process of polishing turmeric in the Guntur and Cuddapah districts.

(x) A Government department in Bengal was furnished with a list of manufacturers of cigars in Trichinopoly, Dindigul and other places, and with information as to the sources from which the raw tobacco is derived and other particulars relating to the present position of the industry.

(xi) Information was given to an inquirer in regard to the names and addresses of the principal importers and dealers in

Bengal of emery powder, emery cloth, sand-paper, etc., and the principal consumers in India of emery and emery products.

(xii) A merchant in Bangalore, who contemplated the manufacture of cutch in this Presidency as an extension of the operations already carried on by him in the Mysore State, was furnished with full information in regard to the occurrence in certain areas of the trees from which the product is manufactured. The experiments carried out by the party with a sample consignment of *Accacia sundra* supplied by the Forest department appear to afford some promise of the manufacture of a suitable quality cutch in this Presidency.

22. *New industrial undertakings.*—The financial stringency which prevailed during the greater part of the year under review was reflected not only in fewer new floatations but also in the number of companies which ceased to exist during the year. Three new cotton mills were registered during the year, the largest being the Somasundaram Mills, Ltd., with an authorized capital of Rs. 14,40,000 and the Sree Kaleeswar Weaving Co., Ltd., with a capital of Rs. 5,00,000, both having their registered offices in Madras. The Godavari Spinning and Weaving Mills, Ltd., was floated in the Godavari district with a capital of Rs. 3,50,000. Among other industrial undertakings registered during the year, mention may be made of the Mahalakshmi Carpet Factory, Ltd. (North Arcot district), with a capital of Rs. 2,00,000 to manufacture woollen carpets, two concerns named Madras Soap Factory, Ltd., and the Madras Synthetic Products, Ltd., with a capital of Rs. 1,00,000 each formed for the purpose of manufacturing soap, the Gnanambikai Metal Works Panagal, Ltd., with a capital of Rs. 2,00,000, the Panagal Tile Works, Ltd., with a capital of Rs. 1,50,000, and the South India Safe and Lock Manufacturing Co., Ltd., Madras, with a capital of Rs. 1,00,000. The Tanjore Oil Mills which was formed in 1920-21 was wound up, as it was not found possible to continue by reason of its liabilities. The Kistna Cement Co., which was registered in 1920-21 with a capital of Rs. 25,00,000 for the purpose of manufacturing cement, went into liquidation owing to its inability to command the requisite working capital. The Universal Tobacco Co., Ltd., has been wound up by order of the High Court. The Sree Meenakshi Mills, Ltd., Madurai, and the Bezwada Spinning and Weaving Mills, Bezwada, have not yet reached the stage of production, and the construction work is understood to have been still in progress at the end of the year under review. The total number of looms and spindles in the cotton mills in the Madras Presidency increased from 3,734 and 517,706 to 4,157 and 543,748 respectively. The latter figures are exclusive of the A.R.A.R.S.M. Spinning Mill, Vepery, in which work was suspended in November consequent on the reconstruction of the mill. There are at present only 16 cotton mills in the

Madras Presidency, and there is scope for a number of successful mills in addition to those now at work. The number of looms and spindles in the four jute mills in the Presidency remained stationary at 565 and 12,912 respectively.

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

Eight prospecting licences for prospecting for Barytes over an area of 108 acres.

Five prospecting licences for prospecting for Mica over an area of 917 acres.

Three prospecting licences for prospecting for Manganese over an area of 1,971 acres.

Two prospecting licences for prospecting for Asbestos over an area of 1,002 acres.

One prospecting licence for prospecting for Gold over an area of 1,763 acres.

Seven mining leases for working Mica over an area of 193 acres.

One mining lease for working Hematite over an area of 1,299 acres.

One do. Manganese over an area of 450 acres.

Mining continued to be carried on in the districts of Vizagapatam, Nellore, Anantapur, Kurnool, Bellary and Salem as well as in the Nilgiris, and the minerals raised were manganese, magnesite, mica, steatite, barytes, gold and silver. Extensive prospecting for asbestos and emery was also carried out during the year in the Cuddapah and Salem districts respectively. With the exception of barytes and steatite, in the output of which a decrease was recorded, the production of minerals increased. The greatly increased and sustained demand for manganese was reflected in the appreciably large production of the mineral during the year under review. There was some improvement in the mica trade during the year, and consequently several mines which had been closed as a result of the depression in trade during the last few years were re-opened in the Nellore district. There was quite a good demand for mica of 'Ruby' quality, the occurrence of which is, however, limited, while the demand for the spotted varieties, of which greater quantities are available, is comparatively small. Prospecting for mica has been carried on in the Nilgiris since 1921, and a commencement was made with mining operations during the year under review. The deposits of the Wynaad mica mines are said to have proved to be substantial and productive and to yield a good quality 'Ruby' mica, which commands a ready sale in the Calcutta market. Though the output of gold was twice that of the previous year, it was still less than half of the production attained in 1922, and only a third of the quantity raised in 1921. An increased quantity of magnesite was again won from the quarries of

the Salem Magnesite Syndicate, Suramangalam. This mineral is now employed in the works of the Syndicate not only to produce calcined magnesite but also in the manufacture of magnesite composite flooring, which may be considered a new industry in the Madras Presidency, as also in the production of Mabor assayers cupsels required for use in gold mines. Mr. E. Gaudart of Pondicherry, to whom a mining lease for iron ores over a large area in the Kanjamalai reserve forest in the Salem district had been granted in 1920, was not able to start mining operations by the time prescribed, and on the recommendation of this department he was granted by the Board of Revenue an extension of time up to October 1925. The Board of Revenue, also on the recommendation of this department, sanctioned, subject to certain conditions, the renewal of the lease of Irulam and Chengalpalayam shell quarries to the South India Industrials, Ltd., for a further period of three years from the 1st May 1924. The usual annual report on the working of the mines has been submitted to Government separately.

24. *Analyses of minerals and materials for private parties.*—A number of analyses was, as usual, carried out for private parties during the year. A specimen of what was believed to be chrome ore and reported to occur in large quantities over an extensive area in the Anantapur district was forwarded to the Geological Survey of India for analysis and report. The mineral was pronounced to be not chrome ore and was reported to contain magnesite with some manganese. The Geological Survey Department also analysed, for a party in Kurnool, a sample of what was believed to be manganese ore. The manganese content was found to be 48.92 per cent of manganese and the specimen to represent a first-class manganese ore subject to the deposit not containing too high a percentage of any objectionable impurity. The Geological Survey of India were doubtful, however, as to whether the specimen could be considered a true and representative sample of the deposit. The Oil Chemist and Soap Expert of the department carried out, for a local firm of candle manufacturers, an analysis of their products. The results of the analysis indicated that the samples were fully up to the standard of the average imported candles and that they were very suitable for tropical use. Some specimens of candles manufactured by a mufassal firm were also analysed by the Oil Chemist, and the results thereof communicated to the party. In this case also, the candles were found to be of a satisfactory quality. The Oil Chemist also analysed for the Commissioner of Excise a sample of ganja oil, which was found to possess good drying qualities and was considered suitable for utilization in paints with a linseed-oil basis. The oil was also

pronounced to be suitable for use in the manufacture of superior soft soaps, such as are produced by the Kerala Soap Institute, although the conclusion finally arrived at was that the quantities that could be made available each year were too small to admit of profitable utilization.

25. *Supply of Stores.*—It was mentioned in last year's administration report that the question of the feasibility of drawing up, for the information of the Heads of Government departments and other officers who have purchases to make, a list of approved suppliers and of the articles which they can supply, and also of this department assisting other departments in disposing of their surplus stores, had been under the consideration of Government. A consolidated list showing the classes of goods purchased by each of the major departments, and their value, with a list of firms from whom the stores were obtained by the respective departments, was drawn up and submitted to Government with remarks as to the feasibility or otherwise of introducing the scheme contemplated. It was felt that the preparation of a list of approved suppliers of a wide range of stores (manufactured and unmanufactured) would involve much time and labour amounting as it would, if it was to be sufficiently comprehensive, to the compilation of a commercial directory, and that it would not be easy to make satisfactory arrangements for the list to be kept up to date in all essential respects. It was also considered that the suggestion that this department should act as a clearing house for surplus stores was neither feasible nor desirable, since if such an organization was created, there would be the less necessity for departments to confine their orders strictly to their requirements, and there would arise endless controversy as to quality and price. In the result, Government ordered that the proposals need not be pursued further, and that it would suffice if the department continued to advise as to the sources of supply and markets for various articles of stores, the market conditions and possible outlets for stores declared surplus.

26. *Library.*—The library attached to the Central Office contains a 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, patent office 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 being increasingly resorted to. About 50 journals and periodicals on scientific, technical and commercial subjects are also received in the department, the more important of which are

placed on the table in the library for consultation and reference by the general public. The library, as at present organized, does not function as a lending library, but applications for the loan of books and other publications for reference or study by any persons engaged in trade or industry receive every consideration. In 1920, the department took over from the Victoria Technical Institute, the Dhanakoti Mudaliar Library, on the understanding that purchases out of the endowment funds should be restricted to books dealing with architecture and art in relation to industries. This library, when handed over to the Department of Industries, contained a number of out-of-date volumes of little or no value for reference purposes, and these are gradually being replaced by more up-to-date and authoritative works of reference on architecture and art. A number of new books were added to the library during the year, and it now includes a very comprehensive range of books on industrial and commercial subjects. A library catalogue was prepared and printed during the year under review and distributed to Government departments and other libraries in Madras and elsewhere. A suggestion book is now kept in the library, and recommendations for an extension of its scope and usefulness and for the purchase of new books are invited from the public who resort to it.

27. *Statistics.*—The department continued to compile statistics relating to industries, including statements of cotton, jute, paper, and woollen mills, mines and minerals and planting products. The usual summaries were also prepared for inclusion in the Administration Report of the Presidency. The existing statistics of production and value of minerals appear to be adequate and reliable. The returns are received with a reasonable degree of promptitude from the individual mine-owners and managers through Collectors of mining districts, and it is seldom that the detailed scrutiny in my office reveals any fundamental error in the original returns. It is difficult to express an opinion as to the accuracy or otherwise of the statistics of non-Act mines, as their collection must necessarily depend almost entirely on the zeal and intelligence of the village officer, and at best they can probably be regarded as only very approximate. The mines in the Madras Presidency which are not subject to the operation of the Indian Mines Act are, however, very limited in number and are of minor importance. As regards planting products, statistics, as Government are aware, are prepared in regard to the acreage under cultivation, and yield of tea, rubber and coffee. The statistics are based on data furnished by planters which are received in my office through Collectors of districts and the Agent to the Governor-General, Madras States. The district statistics are examined in my office and forwarded in the form of a consolidated statement to the Director-General of Commercial Intelligence,

for inclusion in the all-India statistics. The accuracy of the statistics in respect of the acreage under tea and rubber cultivation now leaves little to be desired. The position in regard to coffee, however, is not so satisfactory, as there is still a considerable difference between the figures compiled by this department and those published by the United Planters' Association of Southern India. The difference in the figures is partly attributable to the fact that there are a considerable number of small estates owned chiefly by Indian proprietors who are not members of the United Planters' Association of Southern India and do not submit returns to it. The coffee statistics are incomplete in so far as they do not include figures in respect of estates or plantations of a smaller extent than 10 acres, and there is reason to believe that the acreage of the smaller estates which are excluded from the return is by no means inconsiderable. There continued to be considerable delay during the year under review in the receipt from Collectors of the district returns of planting products, while incomplete statistics were often received, rendering necessary in many cases the preparation of supplementary returns. It is possible that the consolidated return could be prepared with greater expedition if the work of consolidating the figures of the individual estates, which is now carried out in the Collectors' offices, were transferred to my office, particularly as, now that the office of the United Planters' Association of Southern India has been transferred to Madras, the necessary collaboration between my office and the Planters' Association has been rendered much easier.

28. The department continued to compile the fortnightly returns of wholesale prices of certain basic commodities at selected marts in the selected districts of the Presidency. The importance of carefully recording the prices of the articles comprising these statistics has been constantly pointed out to the price-recording officers, but although the accuracy of the statistics has, as a result, been improved to some extent, they still leave something to be desired in this respect. The returns received in my office from the price-reporting officers are often not prepared in accordance with the prescribed instructions, and moreover are frequently incorrect.

29. On the whole, I consider that the accuracy of the statistics compiled in this department is very fair, and an improvement has certainly been effected in this respect during the last few years. This department, however, has no control or real check over the primary reporting agencies or offices in which the figures of individual estates, etc., are consolidated, and it is in the direction of instructing and supervising to some extent the persons responsible for the preliminary statistical work that any further improvement in the accuracy of the statistics must be looked for. If, however,

provision has to be made for the periodic inspection by a member of my staff of the registers maintained by Collectors' offices and primary reporting agencies, i.e., the Tahsildar's and Deputy Tahsildar's offices, the staff of the department will have to be strengthened.

II

30. Under this section are included experiments and inquiries having for their ultimate object the starting either by private owners or by Government of new industries or of new branches of or improved processes in existing industries. This work is carried on mainly in the Bureau.

31. *The development of coir industry on the East Coast.*—A reference to the position of the coir industry on the East Coast was made in the administration report of the preceding year, when it was stated that, with a view to improve the quality of the fibre, instructions for the retting of coconut-husk, for extraction of clean fibre, and for the spinning and weaving of coir yarn, had been drawn up, and copies distributed by the district officers of the department to those interested in the industry. It was hoped by this means to induce private enterprise to take up the experiments, and the Assistant Industrial Engineer, Bezwada, was instructed to offer all possible assistance to such persons. The attempts made by the department to persuade the people in the Godavari district to adopt the improved methods of retting coconut-husk did not prove successful. The coir industry on the East Coast, such as it is, is almost wholly in the hands of poor women who live from hand to mouth, and with most of them it is a part-time occupation from which they require an immediate return. They were thus unable to undertake an experiment, which would necessarily have extended over a considerable period and involved an expenditure of a certain amount of money. The interest professed in the question by gentlemen in command of capital and owners of coconut topos proved in the event to stop short of putting up any money for even small-scale experiment, while the department in the current tightness of finance could not expect any grant for a demonstration of coir-retting in a centrally situated place on the East Coast. As soon as financial conditions permit, however, it is proposed to initiate the experiment which will consist essentially of soaking husks separated from the nuts at the proper stage in water under proper conditions for some months. After the husks have been thoroughly retted, the fibre will be beaten out and twisted into yarn by a maistri who will have to be brought from the West Coast. Once the possibility of getting good fibre and twisting good quality yarn on a paying basis on the East Coast is established, the development of the further process of cleaning the fibre, weaving

of matting, etc., can be taken up in an experimental factory later on, as and when funds are available. In the first instance, it will suffice, I think, if the advantages of the retting methods followed on the West Coast are demonstrated, and it is shown that coir fibre and yarn of good commercial quality can be produced on the East Coast. There need be no apprehension that if the coir industry is successfully started in the East Coast, it will react unfavourably on the old established West Coast industry, as for some time there has been a shortage in the available supply of weaving yarns owing to the insufficiency of seasoned husks. It seems to be the case that both the local mat and matting industry in Malabar and the export trade could absorb an increased quantity of weaving yarns, and in view of this and of the fact that high-grade yarns such as 'Alapat' and 'Anjengo' are now quoted as high as Rs. 140 to Rs. 150 as against Rs. 60 to Rs. 70 a few years ago, the desirability of taking steps to explore the possibility of increasing the supply of weaving yarn is sufficiently obvious.

32. The question of starting a factory on the East Coast for the desiccation of coconut and its preparation for export continued to receive attention during the year. The Director of Agriculture, Colombo, was addressed with a view to ascertain whether in the event of an officer of the department being deputed to Ceylon to make a study of the conditions under which the industry is carried on there and of the processes employed in the preparation of the product, it would be possible for him to secure from any of the mills the requisite facilities for carrying out a thorough investigation of the industry. The Director of Agriculture in Ceylon replied to the effect that the mills there were not unnaturally somewhat reluctant to show their methods and explain their processes, and suggested that as he himself was about to proceed on leave, it would be advisable to allow the matter to stand over until his return about the close of the year under review. The prospect of starting the industry in India does not appear to be very hopeful, and if coconut desiccation were a commercial proposition, it is probable that the enterprising merchants of Malabar and Cochin would have started it long ago. Since the close of the year, Government have decided to drop the proposal in view of the fact that the industry in Ceylon is now reported to be in a bad way.

33. *Match industry.*—The development of the match industry in the Madras Presidency was fully detailed in last year's report, and there is little further progress to record during the period under review. In recording my last year's report, Government agreed with me that the progress of the industry could best be fostered by the department working in co-operation with the Forest department, to furnish information as to the timbers likely to prove suitable,

their quality and distribution, and placing inquirers in touch with manufacturers of up-to-date machinery and chemicals. Assistance was rendered on these lines during the year to a considerable number of inquirers. A number of industrialists who have started, or contemplate starting, small factories do not appear adequately to have appreciated the vital necessity of selecting a suitable site for their operations, and of ascertaining beforehand whether suitable match woods can be delivered at the factory site at a price, which will admit of manufacture at a profit. Instances have occurred where small concerns have come to grief owing to the failure of their proprietors to make the essential preliminary inquiries. In the case of a small factory which has been started in the Cauvery delta near Tanjore, there is reason to apprehend that difficulty will be experienced in obtaining the timber required for the manufacture of splints and veneers, at a price which will make commercial manufacture possible. A match factory at Olavakot applied for permission to instal and work, at their own cost, machinery for cutting splints and veneers in conjunction with the Forest department saw mill at Olavakot. The Forest department were not able to allow the concern to work in their mills; for not only had they insufficient power to run their own machines, but they could not spare space for the machines which the match concern wished to set up. Finally, the concern was informed that if they could instal their own engine and machinery in proximity to the mill and could utilize the timber available at Olavakot, the Forest department would be willing to guarantee them a supply of timber at a relatively low rate. This appeared to be a very suitable arrangement, for there would be a considerable saving in the transport of raw materials and consequent reduction in the price at which it could be supplied to the factory; and since the timber used by the factory would only be waste material from the point of view of the Forest department, it could be supplied at a relatively low rate. Further, a regular supply could be depended upon by the factory, whilst, on the other hand, the Forest department would be able to dispose of their waste. The scheme was under the consideration of the party at the close of the year. The match industry is carried on in Japan largely on cottage industry lines, and the possibility of developing the industry in this Presidency at least, partly on these lines, is under investigation by the department. In any case, if progress in this direction is found practicable, it will certainly lie not in the installation in cottages of the inferior match-making machines manufactured in Bengal, which appear to be cheap and indifferent imitations of German machinery, and which have not yielded satisfactory results in practice, but by the setting up of a central factory equipped with modern machinery for the manufacture of boxes and splints and their distribution to

cottage workers for 'finishing' the matches as a home industry. A scheme on these lines is being worked out by a prominent citizen of Madras who has been attracted by the idea. Under this scheme the function of the workers will be to dip the splints into the chemical solution, which they will be instructed how to prepare, fill the boxes and paste the printed labels thereon, and return them to the factory. The department is watching with interest further developments in this direction, and the application for aid under the provisions of the State Aid to Industries Act, which it is understood the promoters intend to prefer, will doubtless receive the sympathetic consideration of the Board of Industries.

34. *Malted foods*.—The investigation initiated during the previous year in regard to the possibility of manufacturing malted foods was completed during the period under review. The experiments proved that malted foods of a standard high enough to enable it, as far as quality is concerned, to compete successfully in the market could be produced. In view of the financial position of the Presidency, and also on other grounds, the Government accepted my view that it was inadvisable to assume the responsibility of undertaking the manufacture of the product on a commercial scale, that the report on the results of the investigation should be published for general information, and that it should be left to private enterprise to proceed further.

35. *Industrial Chemist*.—Under the category of experiments and enquiries, having for their ultimate object the starting of new industries, fall also most of the experiments conducted by the Industrial Chemist. Dr. Marsden held the appointment of Industrial Chemist up to the 14th March 1925 when he retired after a meritorious service in the department extending over a period of about fourteen years. The Industrial Chemist continued to work in the laboratories of the Indian Institute of Science, Bangalore, up to his retirement. He was on leave on average pay during the month of May, and during the course of his tours he visited Madras, Coimbatore, Salem, Vellore and Madura.

36. In the administration report of last year, allusion was made to a proposal to utilize the Indian Institute of Science for the purpose of carrying out the chemical research work of the Presidency in return for a substantial contribution to its funds, and to the fact that Government had negatived the proposal on the ground mainly of the financial condition of the Presidency, although an additional reason which influenced the decision arrived at was that Government considered it advisable that the Presidency should have a research institute of its own, and that this should be provided by expanding the chemical laboratory provided in the extensions to the Leather Trades Institute. The

whole question of the organization of the chemical branch of the department, as also that of the comparative advantages and disadvantages of utilizing the Indian Institute of Science for conducting the chemical research work of the Presidency and of establishing a research institute in the Presidency itself, was reviewed in a comprehensive report which was submitted to Government in September. In G.O. No. 177, Development, dated the 3rd February 1925, Government passed orders on these proposals and agreed that a provincial research institute of the magnitude contemplated by the Chemical Services Committee could not be developed out of the small research laboratory provided in the extensions to the Leather Trades Institute, and that an institute of the kind would require a personnel and equipment which this Presidency could not afford. They therefore decided that the proposal should not be proceeded with for the present. Government also agreed that the major chemical problems arising in the Presidency after the retirement of Dr. Marsden, the Industrial Chemist, should, as recommended by the Retrenchment Committee, be referred to the Indian Institute of Science, Bangalore, for investigation, and that in return for this service, Government should make a contribution to the funds of the institute. Government also sanctioned, subject to the vote of the Legislative Council, a contribution of Rs. 10,000 to be paid in the year 1925-26. As regards minor chemical problems, Government, as stated elsewhere in this report, sanctioned, in accordance with the recommendations of the Leather Industry Committee, the creation of a post of Leather Research Chemist, one Senior Assistant Chemist and one Junior Assistant Chemist. Mr. Seshachallam Nayudu, who was appointed to the former post, now deals with miscellaneous chemical inquiries, as well as those pertaining more properly to the leather and tanning industries or, in other words, he now performs the functions of a General Chemistry Assistant to the Director, in addition to his leather chemistry research work. As a corollary to these arrangements, Government directed that with effect from the 14th March 1925, the date on which Dr. Marsden retired from Government service, the post of Industrial Chemist should be abolished as recommended by the Retrenchment Committee.

37. *Coir-retting*.—The investigation of the causes of retting of coir-husk was completed during the year, and the scientific results published in the Journal of the Indian Institute of Science. The results of the experiments on the retting, separation and utilization of coir fibre were also published in the form of a departmental bulletin which was drawn up by Dr. Marsden on the eve of his retirement.

38. *Dyeing in jails*.—Assistance was rendered by the Industrial Chemist at the Coimbatore Jail in respect of the dyeing of khaki

by analysing a number of samples of khaki cloth and determining the ingredients for the dyeing of certain shades. A number of samples of indigo were analysed, and the methods of indigo dyeing at the Central Jail, Vellore, were also revised. Advice was given by the Industrial Chemist in regard to the reorganization of the dyehouse at the Vellore Jail, and a report submitted on the question of the adoption of suitable methods of dyeing for carpets manufactured there. The Industrial Chemist also advised the authorities of the Vellore Jail in regard to the selection of dyes and a shade book containing over 200 dyeing shades on carpet yarn was prepared by him.

39. *Miscellaneous inquiries.*—The inquiries dealt with by the Industrial Chemist during the year included an investigation into the question of removing a bad odour from the aloe fibre prepared in the Alipuram Jail, the identification of fibres, the extraction of juice from cashew fruit, the casting of alloys, the bleaching of cotton towels, the dyeing of silk cloths and the preservation of milk. Dr. Marsden also reported on a sample of clay with reference to its suitability for cement manufacture and as to the suitability of a sample of peat for utilization as manure. He also analysed four samples of alizarine dye in connection with a commercial dispute.

III

40. *Management of manufacturing institutions owned by Government.*—The manufacturing activities which are at the present time under the direction of the department are soap, ink and jam and preserves.

KERALA SOAP INSTITUTE.

41. *Staff.*—Mr. A. K. Menon was in charge of the Institute throughout the year. Mr. C. K. Kunhiraman, Business Manager, resigned on the 4th July 1924, from which date the post was abolished. Mr. P. S. Srinivasa Ayyar continued as First Assistant during the whole of the period under review. The services of Mr. P. Kanna Kurup, Second Assistant, were dispensed with on the 5th July 1924, and Mr. C. V. Narayana Ayyar, B.A. (Hons.), was appointed in his stead.

42. *Policy.*—The Retrenchment Committee recommended that, as the Kerala Soap Institute had already demonstrated the possibility of manufacturing soaps and had, therefore, ceased to be a pioneer factory, it should be sold as a going concern. It was however represented that owing to trade depression it would be foolish to try to sell a concern which had shown a loss for two years, and that if disposal of the factory was the object in view, it was

desirable if possible to be able to show that the institute could make a profit. The Government, after a careful examination of this recommendation during the year under review, considered that the institute should be continued on the present lines of working for another year, when the question should be examined again. I was requested to examine and report on the future of the institute when I submit the audit report on the accounts of the institute for 1924-25. The Government also considered that the question, whether arrangements should be made at the institute to admit and train apprentices in the manufacture of soap, should be deferred until the future of the institute is definitely settled.

43. The year has been one of expansion in all branches of the factory's activities, and the volume of orders received and executed greatly exceeded those of the previous year both in quantity and value, the policy having been to obtain as many orders as possible, even at a very small margin of profit, so as to spread the heavy overhead charges over as large an output as possible. In the early part of the year, as a result of negotiations extending over a considerable period, an order was received from the Controller of Contracts for the supply of 145 tons of soap yellow. This contract had to be executed within the short period of three months, and accordingly it was necessary to increase the output of the factory, which at the time was limited to 35 tons of boiled soap per month, and partly to remodel the factory so as to enable it deal with the altered requirements of the output. The increased production of boiled soap was effected by the conversion of the causticising pans into soap-boiling pans and by the provision of additional soap cooling frames and the fitting up of a blower in the drying chamber to accelerate the drying of the soap. It was possible to utilize the causticising pans for the purpose of soap boiling, since the causticising plant was not working, owing to the fact that the market value of caustic soda is now below that at which it can be manufactured in the factory from soda ash. The satisfactory results which were obtained in spite of the generally unfavourable conditions which prevailed during the year was attributable mainly to the large contracts for soap yellow and soft soap obtained from the Director of Contracts, as well as a number of small contracts obtained from other authorities as a result of the active propaganda referred to elsewhere, and partly to the careful and prudent buying of the raw materials. The conditions generally were not favourable for an expansion of sales since the exchange remained at a high level and ruled in favour of importers throughout the year, while the dislocation of traffic and trade caused by the unprecedented and disastrous floods in July and August resulted in a marked falling off in the demand for soap in the districts

affected, whilst manufacture in the factory had to be suspended for three weeks owing to the supply of certain raw materials being cut off. The effect of the floods continued up to the close of the year as the purchasing power of the people in the area affected was affected to some extent. These adverse factors restricted the general expansion of business which would otherwise have been greater, and if the difficulties with which the institute had to contend during the year are taken into consideration, the result of the year's operations which will be reviewed in the succeeding paragraph, will, I think, be regarded as satisfactory.

44. *Production and accounts.*—The indications of improvement referred to in the report of the preceding year are reflected in the accounts. The year opened with a stock of 32 tons 14 cwt. and 66 lb. of soap valued at Rs. 14,071-5-4. 373 tons 1 cwt. and 9 lb. of all classes of soap valued at Rs. 1,59,935-6-10 were manufactured, and 346 tons 4 cwt. of soap valued at Rs. 2,28,135-2-8 were sold, 12 cwt. 72 lb. valued at Rs. 855-0-8 issued as free samples, and 10 tons 1 cwt. and 23 lb. of spoilt soap were reboiled during the year, as compared with 167 tons 19 cwt. valued at Rs. 1,33,553-12-1, 11 cwt. 4 lb. valued at Rs. 853-3-7, and 2 tons 12 cwt. valued at Rs. 893-14-2 respectively in the previous year, leaving a balance of 48 tons 17 cwt. and 92 lb. in stock on the 31st March 1925. The profit and loss statement as audited by Messrs. Fraser & Ross disclosed an actual net profit of Rs. 23,164-2-9 on the year's working, and a return of 7.75 per cent on the capital of Rs. 2,99,413 invested in the institute. The profit was struck after debiting an amount of Rs. 2,308-5-0 for direction charges, Rs. 1,446-6-1 for audit fee and Rs. 2,233-1-0 on account of leave and pension contributions, all of which I consider to be excessive and greater than a commercial factory would have to carry.

45. *Varieties of soap manufactured.*—The quality of the institute's products was maintained at a high level during the year, and it is no small thing that the institute has achieved in placing on the market pure soap at prices within the reach of practically everybody. There was a fair demand for Washwell, about 111 tons of which were sold during the year. Washwell, which is a high-grade washing soap, maintains its hold on the market and its ability to compete with the very best imported brands. 145 tons of household soap, containing about 62 per cent of the fatty acids, were supplied to the Director of Contracts, Army Headquarters, and gave every satisfaction. A cheap bar soap similar to imported brands of that class was made as an experimental measure, and 3 tons of it were sold during the year. It is anticipated that the demand for this soap will expand considerably in the near future as it appeals to the class of consumer who, while appreciating the

merits of Washwell soap, is either unwilling or unable to pay the price demanded for it. About 31 tons of Vegetol soap were sold during the year, and in view of the severe and increasing competition of country-made soaps, it is satisfactory to be able to record that this variety has at least been able to maintain its position in the market, and in fact there are indications that the demand for this soap is likely to increase, as many persons have proved to their cost the injurious nature of several of its imitations. The sales of soft soap, exclusive of insecticidal soap, amounted to about 30 tons. It was mentioned in last year's report that the Kerala Soap Institute is in a particularly advantageous position to manufacture high-grade soft soap, and it is satisfactory that as a result of a propaganda campaign, sales of this variety have shown a considerable expansion. The endeavours made to popularise still further the insecticidal soaps made from fish-oil and rosin, which are employed for destroying the insects and pests on estates, were attended with a certain measure of success, 6 tons of this soap having been sold during the year. It is understood that as a result of regular spraying operations conducted with mixtures of this soap, many of the estates have got rid entirely of the green bug and other pests. The sale of toilet soaps was the disappointing feature of the year's operations, sales only amounting to about 5 tons. Efforts have since been made to stimulate the sale of toilet soaps, and there is some evidence to show that they are becoming more widely known and are in somewhat greater demand in the Madras market. The chief obstacle to the development of sales of a good indigenous toilet soap is the marked preference based largely on habit of the Indian consumer in particular for the imported article, while the high rate of exchange has facilitated the marketing of imported soaps at a lower price than hitherto. A few tons of textile soap were sold to mills in Bombay during the year, and it is hoped that the demand for this class of soap will increase considerably when the present depression in the mill industry disappears.

46. *Propaganda.*—In the early part of the year an active propaganda campaign was conducted from the head office, and an exceptional effort was put forth to off-set the effects of trade depression and the intensive competition of imported soaps. Individual letters, descriptive of the soaps offered by the Kerala Soap Institute, were addressed 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 as well as in Ceylon. Railway administrations, mills, factories, estates, and hospitals were all addressed. Propaganda of this kind is certainly more effective and less costly than newspaper advertising, and the

sustained effort put forth to develop sales was attended with a fair measure of success, although, for various reasons, the results obtained, if the large contracts secured from the Director of Contracts are excluded (although they were a direct result of the propaganda work), fell short of expectations. High freight rates militate against expansion in the markets of the North of India with the exception of Bombay to which consignments can be shipped during part of the year by country craft at comparatively low rates. Moreover, the publicity given to the institute products evoked the cry that Government was unfairly competing with private enterprise. The fact that the soaps manufactured at the Kerala Soap Institute met in every respect the conditions of the rules for the supply of articles, for the public service was brought to the notice of the Chief Controller of Stores, Indian Stores department, who was asked to bring the facilities offered by the institute for supply of soaps to Government departments to the notice of all indenting officers. In reply, the Chief Controller agreed that if the institute prices were favourable as compared with the cost of obtaining equivalent soaps through the Indian Stores department, he would, if possible, divert future demands to the institute.

47. *Sales organization.*—It was stated in last year's administration report that the majority of the agencies had been terminated and that a number of local stockists had been appointed in the more important centres of the Presidency. A number of firms and individuals were addressed early in the year under review with a view to their appointment as stockists. A feature of the new scheme was that instead of being given a flat rate of commission, irrespective of the turnover, the stockists were given a smaller rate of discount or commission plus a bonus on a sliding scale, varying with the volume of orders placed with the institute. They had thus every incentive to increase their turnover with the institute to the utmost possible extent. Mr. Adam Hajee Muhammad Sait, who was previously agent for Madras and Chingleput and Messrs. T. C. Ramudu Jetty & Sons who were formerly agents for Tanjore, South Arcot and Pudukkottai, continued their connection with the institute as stockists at Madras and Tanjore respectively, while the services of Mr. R. C. Dalal as agent for Malabar, Cochin, Travancore, South Kanara, Coimbatore, Nilgiris, Salem, Trichinopoly and Mysore States including Bangalore, were retained. By the end of the year a number of other stockists had been appointed at the more important centres of the Presidency. The results, however, were not so satisfactory as I anticipated, owing mainly to the difficulty experienced in securing a sufficient number of stockists of sound financial standing. It would have been comparatively easy to get stockists on the basis of the department taking all the

risks and the stockists most of the profits. The volume of business introduced by the agent, which amounted in value to Rs. 61,542-3-6, was satisfactory, having regard to the adverse circumstances under which business was conducted in several parts of his jurisdiction during the year owing to the disastrous floods. An agent was appointed in Bombay, but no appreciable orders were obtained from him before the close of the year. It is hoped, however, that during the ensuing year it will be possible to increase the demand for the products of the institute in Bombay.

48. *Training of apprentices.*—As already stated, orders were passed by Government during the year under review that arrangements should not be made at the institute to admit and train apprentices in the manufacture of soap, pending a definite decision as to the future of the institute. Accordingly, many applications from individuals who desired to undergo an organized course of instruction at the institute had to be declined.

49. *Glycerine manufacture.*—The glycerine plant was in more or less continuous operation throughout the year, and a fairly satisfactory quality of 80 per cent concentrated crude glycerine was recovered as a bye-product from the soap lyes. Only about 9 cwt. of glycerine were sold during the year. The question of finding a market for the crude glycerine produced received close attention, and prolonged negotiations have been conducted with, and a considerable number of samples sent, to various firms and merchants in America, where alone there seems any real prospect of creating a demand for this valuable bye-product of soap manufacture. It is hoped that business will result in some cases at least, but the difficulty is that although, generally speaking, the quality of the crude glycerine has been approved, the production in the institute is on a comparatively small scale amounting only to about 10 cwt. a month, and this quantity is not sufficient to interest British and American manufacturers. The demand for the product in India appears to be inconsiderable, as its only uses are for the purpose of preserving dead bodies in dissection theatres, in mortuaries, and to a much smaller extent in the process of leather dressing; the presence in the glycerine, however, of a small quantity of salt, while adding to its preservative properties, renders it injurious to leather. The crude glycerine manufactured at the institute was brought to the notice of all medical authorities, medical schools and hospitals throughout India, and a few small orders were received from these sources before the close of the year. It is probable, however, that the total consumption of crude glycerine by medical authorities in India is considerably less than the output of the factory, small as the latter is.

50. *Laboratory*.—A considerable number of routine analyses of the various raw materials received, and the finished products in different stages of manufacture, were carried out in the laboratory during the year. A number of samples of materials and products received from firms and private individuals for analyses were also examined and reports furnished.

51. *Miscellaneous*.—There were as usual a number of distinguished visitors to the institute during the year including the Hon'ble Sir Arthur and Lady Knapp, Mr. T. V. Seshagiri Ayyar, the Regent of Pudukkottai, and the Fourth Prince of Cochin. A number of students from educational institutions in Calicut and other parts of Malabar also visited the institute and were shown in detail all the processes of soap manufacture and the recovery of the bye-product. The institute continued to supply soaps to Government House during the year.

GOVERNMENT INDUSTRIAL INSTITUTE, MADRAS.

52. *Staff*.—The Industrial Institute continued to be in charge of Mr. S. Venkatarama Ayyar throughout the year. Consequent on the development of the activities of the institute, sanction was accorded to the employment of one foreman on Rs. 75 per mensem and one cooper carpenter on Rs. 35 per mensem.

53. *Premises*.—The institute, which is now exclusively devoted to the manufacture of fluid inks, ink-powders and ink-tablets, continued to be accommodated in the rented premises in Wallajah Road, which were taken on lease during the previous year and have proved very suitable. Since its transfer to Wallajah Road, the scope and activities of the institute have increased greatly, and progress in various directions has been rapid for not only have the output and sales shown considerable development, but as a result of the experimental work undertaken, several new lines of manufacture have been introduced with success.

54. *Varieties of inks manufactured*.—Originally, the institute manufactured only blue black record ink, blue black fountain-pen ink and scarlet ink but later, in addition to these varieties, the manufacture of copying ink, concentrated cheque ink, green ink, violet, red, and black stamping inks and cyclostyle inks were also taken in hand. It was found, however, that the demand for liquid ink, although far from inconsiderable, was nevertheless limited, as the use of cheap ink powders was widespread and increasing. Accordingly, the possibilities of manufacturing ink-powders were carefully investigated, and it was found during the previous year that powders of superior quality could be manufactured at a price which would permit of competition with the very inferior ink-powders manufactured locally, and as a result, blue black, scarlet

and red ink-powders were placed on the market and met with a steady demand from the public during the year under review. It was subsequently found that there was a considerable demand for ink-powders in the form of compressed tablets, and accordingly a suitable stamping press for the preparation of tablets was obtained and installed in the factory and a number of varieties of ink-tablets in various colours placed on the market. The quality of the standard fluid inks was still further improved during the year, partly as a result of experimental research, and partly in some cases by the substitution of more suitable materials. Experiments were in progress at the close of the year with a view to a still further improvement in the quality, and a reduction in the cost of manufacture, of the various inks and ink-powders, as also to the evolution of new varieties of inks and ink-powders, including violet copying ink, a cyclostyle ink suitable for use on the Gestetner Rotary machine and various drawing inks. The ordinary blue black writing ink now produced by the institute is of excellent quality and is practically equal in merit to the best imported brands.

55. *Production and accounts*.—The output during the year amounted to 3,350 gallons of various classes of fluid ink, 79,442 tins of ink-powders, and 1,964 packets of ink-tablets. The sales amounted to 2,718 gallons of fluid ink, 77,868 packets of ink-powder, 433 tins of cyclostyle ink and 984 packets of ink-tablets against 1,924 gallons of fluid ink, 14,468 packets of ink-powder, and no packets of ink-tablets during the previous year. The value of the sales effected amounted to Rs. 26,156-0-5 as against Rs. 12,607-6-1 in the previous year. The accounts as audited by Messrs. Fraser & Ross showed the very satisfactory net profit of Rs. 3,110-7-3 and the high return of 19.6 per cent on the capital invested in the institute. The profit was struck after providing for direction, audit and all other overhead charges. The percentage of sales to the Superintendent of Stationery to the whole factory sales declined from 84 per cent in the year 1923-24 to 64 per cent in the year under review, sales to the public, including municipalities, district boards, railway administrations, educational institutions, banks and commercial houses, showing a decided increase. This is a satisfactory feature of the position, for, although inks are supplied to the Superintendent of Stationery at competitive rates, i.e., at or below current market prices, yet it is obviously desirable that the basis of the factory sales should be widened as far as possible, as in this way the goodwill of the concern is enhanced.

56. *Sales organization*.—Messrs. T. A. Taylor & Co., one of the largest importers of foreign inks in Madras, continued as sole agents for the institute, throughout the year. As I have pointed

out elsewhere, I consider it an advantage to have obtained the collaboration of this firm in developing a market for the inks produced for obviously to the extent to which they sell Government inks in preference to imported inks, the competition to which the institute would otherwise be subjected to is correspondingly reduced. As stated in an earlier section of this report, the inks manufactured at the institute were displayed at a number of exhibitions and several awards were secured.

FRUIT-PRESERVING INSTITUTE, COONOR.

57. *Staff.*—Mrs. Bryant was in charge of the institute until 15th September 1924 when her agreement expired, and she was relieved by Captain Bryant who was in sole charge of the institute during the remainder of the year. Mrs. Bryant was granted privilege leave from the 16th September to the 30th of November 1924. During the year, Government sanctioned the appointment of foreman on Rs. 100 per mensem, to assist the lady manager on the manufacturing side, and M.R.Ry. N. K. Muthuswamy Ayyar, a permanent mechanic of the department, was appointed to the post with effect from 14th June 1924.

58. *Production and accounts.*—The year opened with a stock of 13,900 lb. valued at Rs. 6,950, and during the year, the production amounted to 38,276 lb. valued at Rs. 19,170-6-6. The sales of jams and preserves during the year amounted to 33,457 lb. valued at Rs. 17,977-7-11, free samples issued amounted to 288 lb. and the stock carried forward on the 31st March 1925 was 18,431 lb. valued at Rs. 8,063-9-0. The result of the year's working of the factory, after allowing Rs. 500 for direction charges, showed a loss of Rs. 23,681-10-9. It is doubtful, however, whether any further considerable reduction in the price of fresh fruits can be expected, and probably the only way in which any further appreciable economy in the cost of manufacture could be effected, apart from expanding the production, would be to pulp the fruits and manufacture a variety of cheap jams from the pulped material in addition to a few selected lines, such as straw-berries, from the whole fresh fruits, but it is extremely doubtful whether a cheap jam on this basis would find a ready sale. Although the volume of sales showed an increase over that of the previous year, nevertheless, the rate of progression was far from satisfactory, and at the end of the period under review it was apparent that the institute was still far from the point at which demand would overtake economic production, particularly as sales during the last few months of the year showed a distinct contraction. As soon as it was known that Government had decided to continue the institute up to 31st March 1925, attempts were made to develop the sales organization by appointing a number of stockists at the various

centres of the Presidency, and no less than 115 firms were addressed as to whether they would be prepared to act as stockists for the products of the institute. Only ten firms sent any reply, and of these only two finally agreed to act as stockists for the institute. The terms offered to the firm, who were approached in the matter, were extremely liberal, and it was fairly evident, therefore, that in the opinion of the various traders and shop-keepers throughout the Presidency, there was no general demand from the public for indigenous jams and preserved fruits. The products of the institute were kept sufficiently before the public by advertisement, an amount of Rs. 3,819 having been expended on newspaper advertising during the year. In view of the unfavourable position of Coonoor as a distribution centre, it appeared advisable to concentrate on the cultivation of the nearer markets in preference to attempting the impossible task of capturing the market in distant places in India to which the freight rates were prohibitive. It was decided therefore to confine the advertising campaign mainly to Southern India and to discontinue the expensive and unremunerative advertisements in the Northern India papers.

59. *Plant.*—It was stated in last year's report that steps had been taken to instal a can-making plant in the institute. The plant arrived shortly after the opening of the year and was set up as rapidly as possible. Unfortunately, many difficulties were experienced in its operation, as a result of which the economies anticipated in respect of the manufacture of containers were not fully realized during the period under review. As experience was gained in its operation, more satisfactory results were obtained, although so far the plant has certainly not realized expectations. The lacquering oven, which had originally been set up at some distance from the lacquering room, gave considerable trouble during the monsoon, and accordingly, it was dismantled during the year, re-erected in proximity to the lacquering room and protected from the weather, since when no trouble has been experienced with it.

60. *General.*—The crux of the difficult problem of the future of the Fruit-Preserving Institute is undoubtedly markets. After a careful examination of the position, I arrived at the conclusion that in order for the finance of the institute to balance about 200,000 lb. of jams and allied products, valued at approximately Rs. 1,27,500, would have to be disposed of annually. The total average import of jams and jellies into the Madras Presidency during the last five years has averaged only 88,099 lb. of the value of Rs. 61,991. The imports recently have shown a tendency to increase, and it is possible that the demand has been stimulated by a decline in the price of imported jam, for there have been heavy imports of cheap bounty-fed Australian jams and preserves with

which the institute is quite unable to compete at the same price. The experience of the last two years shows conclusively that it would be a very difficult matter to replace the ordinary brands of jams which are already well known to consumers, and further even if we were able to capture the whole of the present import trade in jams and jellies, the sales of the institute would not amount to a figure which represents an economic output. The figures given above do not include canned and bottled fruits. The preserves turned out by the institute, however, hardly seem to be of equal merit to the jams, and it is perhaps doubtful whether the comparatively tasteless Indian fruits are particularly suitable for the manufacture of preserves the development of which, in any case, is probably a matter for experts. I consider, therefore, that it would be even more difficult to develop a satisfactory market for preserves than it is in the case of jams and jellies, and it does not seem to me to be that the institute will ever be able to compete in the larger markets of Southern India, with imported fruits canned in Australia and elsewhere in enormous quantities in factories adjoining ports and within easy reach of the districts supplying the fruits. There is little doubt, therefore, that jam must always be the main line of manufacture in the institute and here the difficulty is, as has been pointed out before, that jam is essentially an English and in the case of Indians an acquired taste. It is unlikely, therefore, that the consumption of jams and jellies will increase to a point at which the factory will pay, in the reasonably near future, in the absence of a sufficiently large jam consuming population in the area which can be supplied by the institute to make the manufacture of jams and allied products a feasible proposition. This area includes only a part of the Presidency and Mysore for the cost of transport farther afield puts competition with imported jams out of the question. Coonoor is very unfavourably situated for the distribution of its finished products as the freight charges from the Nilgiris to the important points of consumption within and without the Madras Presidency are very high indeed. An examination of the figures of sales in each of the districts of the Madras Presidency, as well as in provinces and States outside it, bears out this contention, as it reveals that only in the Nilgiris, where alone the handicap of high transport charges is absent, has the business done been on a satisfactory scale. In short, the conclusion at which I arrived, and reported to Government, was that the demand for the products of the institute, within the area which it served or could ever hope to serve, was quite insufficient to absorb an economic output. As the institute was not paying, and I could see no prospect of its paying in the near future, I saw no alternative, but to repeat my previous recommendation, that the institute should be finally closed by the 31st March 1925 and steps taken to liquidate the stocks and

assets. My report was under the consideration of Government at the close of the year, and shortly afterwards they decided that the Fruit-Preserving Institute should be continued for the present, every effort being made to reduce the cost of production and increase the sales, and that endeavours should be made to obtain offers from private individuals or firms to take over the institute as a going concern.

GOVERNMENT GLUE FACTORY.

61. *Staff.*—M.R.Ry. V. S. Chinnaswamy Ayyangar was in charge of the factory up to the 31st July 1924 when it was finally closed. He was granted leave on average pay for three months from 1st August 1924, and his temporary appointment was terminated with effect from 1st November 1924.

62. *Production and accounts.*—The stock brought forward on the 1st of April 1924 was 3 tons 3 cwt. and 37½ lb. which was valued at the then ruling rate of Rs. 37-8-0 per cwt. The quantity manufactured from the 1st April to the 31st July 1924 was 8 tons, 3 cwt. and 54½ lb., and 9 tons, 10 cwt. and 83½ lb. were sold, and 8½ lb. issued as samples, leaving a stock of 1 ton 12 cwt. in hand on the 31st July 1924. In addition, the quantity of liquid glue in stock amounted to 4 cwt. The result of the working of the factory during the period of four months ending 31st July 1924, after allowing for depreciation, direction charges, leave allowances, and interest on fixed capital showed a loss of Rs. 5,578-15-1. The loss on working was attributable to the same cause as in the previous year, namely, to the difficulty experienced in finding market for the glue on an outturn sufficiently large to make the factory pay.

63. In view of this difficulty the *pros* and *cons* of the position were placed before Government in a comprehensive report, which was submitted shortly after the opening of the year under review, and after careful consideration, Government accepted my recommendation which coincided with that of the Retrenchment Committee that the Glue Factory should be closed, and further experiments to prove that glue could be manufactured at a commercial profit should be abandoned. The attempt to pioneer the glue industry in the Madras Presidency has, therefore, definitely failed. I do not think, however, that it is necessary for this department to apologize for having made an endeavour to 'pioneer' the industry. It was a well-conceived and well-executed attempt, which at the time appeared justified, but it is now possible to judge by results, and it cannot in future be said that the possibilities of establishing the industry have not been fully explored. The action of Government in attempting to pioneer the industry has probably saved private enterprise sooner or later from burning its fingers more or less badly. The data obtained during the period of experimental

manufacture is on record and is at the disposal of any member of the public who may evince an interest in the subject at any future time.

64. On receipt of the orders of Government that the factory should be finally closed, arrangements were made to disband the staff and to dispose of the building, plant and machinery as well as the stock of glue on hand. The stock of glue has since been fully disposed of. The building will in all probability be utilized partly for the conduct of experiments in the manufacture of printers' ink, and partly for the purpose of carrying out large-scale researches on tanning problems. The tannin extraction plant and the evaporating pans will be transferred to the Leather Trades Institute, where they will be of the greatest use in the conduct of research work generally and of the experimental preparation of tanning extracts in particular, but as they cannot be accommodated either in the present premises of the institute or in the extensions which are in course of construction, they will perforce have to remain in the existing building. Such of the machinery and plant as had been obtained on loan from the Public Works Department Stores was returned to that department and the balance of the machinery and plant, which is of comparatively minor importance will, it is proposed, be distributed among the various departmental factories and institutions or disposed of by public auction.

PALLAPALAYAM SUGARCANE-CRUSHING FACTORY.

65. The factory started work on the 30th July 1924 and closed for the season on the 7th of December 1924. During this period the factory worked for 90 days and 12 nights, and the total output of jaggery was 1,618 pothis as against 1,696 pothis in the previous year. On an average 30 pans of juice were boiled with five sets of furnaces in a day of eleven hours, each pan producing about five maunds of jaggery. The slight reduction in outturn during the year under review is attributable to—

- (i) the breakdown of the roller shaft on two occasions during the season when the factory was in full operation,
- (ii) the flooding of the fields under sugarcane cultivation served by the factory, and
- (iii) the heavy and incessant rains during the season which precluded the factory running on rainy days owing to lack of dry fuel.

The daily output would have been greater if the boiling pans could have been provided with a continuous supply of juice, but this was not possible as the engine is insufficiently powerful to drive the mill at its maximum capacity. If a higher powered engine were installed, the output could be considerably increased. The operations of the factory yielded a net profit of Rs. 716 after allowing reasonable depreciation on machinery, plant and buildings, which,

all things considered, may be regarded as satisfactory, particularly as the accounts were debited with a sum of Rs. 262-8-0 representing the rent of the factory site for the last ten years.

66. It was stated in last year's report that since the success and economy of power-crushing has been sufficiently demonstrated at Pallapalayam, there was no object in continuing the operations there much longer. Endeavours were made to induce a group of the local ryots to form a co-operative society to take over the factory, but the proposal did not materialize during the year under review. The local ryots and landowners appear to be under the impression that if they do not themselves take over the factory, the operations will be continued by Government indefinitely, and until they are convinced to the contrary it is not likely that they will develop much enthusiasm in the matter. It is, of course, very much to the ryots' interests that the power-crushing plant should be continued in operation, as they are enabled thereby to get their canes crushed and jaggery manufactured at a lower rate than would be possible by bullock-driven mills and country furnaces. It is not, however, advisable for the department to withdraw the plant from Pallapalayam too abruptly, as, if this was done before satisfactory arrangements were made for the local supplies of cane to be crushed in the following season, it is probable that the area under cane cultivation would undergo a contraction. The local ryots and landowners have since been given clearly to understand that Government will not continue operating the plant beyond next season, and that unless they arrange to take it over themselves the plant will be removed to a new area. Inquiries are proceeding in regard to other large cane-growing area, where the power-crushing of cane as a paying proposition might advantageously be demonstrated. It may well be worth while, if funds permit, to set up several crushing plants in suitable areas of the Pallapalayam type with the object of encouraging the cultivation of sugarcane.

IV

67. Amongst scattered industries not conducted in factories, the most important is the handloom weaving industry. The activities of the Textile section of the department cover also cognate subjects, such as hosiery, lace and embroidery, dyeing and printing, and textile education, in addition to sericulture and silk filature reeling.

68. *Staff.*—Mr. D. M. Amalsad continued in charge of the Textile branch, including the direct control of the sericultural operations throughout the year. He also performed the duties of Principal of the Government Textile Institute, Madras. The Textile Expert was on tour for 59 days during the year. Mr. K. T. Achaya held the appointment of Sericultural Assistant, and was in charge

development of sericultural operations in the districts. The peripatetic weaving parties worked during the year under review with their centres at Vizagapatam, Godavari, Kistna, Guntur, Bellary, Kurnool, Salem, Malabar, Madura and Madras. The practical working of the hand-driven sizing machine was demonstrated at Uravakonda, Chirala, Mangalore, Cannanore, etc., while a number of weavers' beams were introduced on country looms. In all, 33 weavers' beams, 153 slays, 231 dobbies, 273 shuttles, 5,737 pirns, and 15,985 healds valued at Rs. 4,561-13-10 were introduced through the medium of the several parties. The Weaving Superintendents maintained close touch with the Assistant Registrars of Co-operative Societies in their jurisdiction. Mr. K. Swami Pantulu did good work in inducing the weavers in the Salem district to adopt weavers' beams. The Superintendents in the course of their duties also collected statistics of the various looms and improved appliances in use, the classes of cloth manufactured, the seasons of demand for cloth, etc., in the districts visited by them.

71. *Textile Institute*.—The Textile Institute, which was formerly located in Davidson's street, Georgetown, Madras, was removed during the year under review to the more spacious rented premises which had formerly housed the Trades School in Muker Nallamuthu street. In a report which I submitted to Government in September, I reviewed at length the objects and activities of the Textile Institute and submitted that having fully justified itself by results and sufficiently demonstrated its usefulness, the time had arrived when the Institute should be placed on a permanent basis. Government, however, ordered that the Textile Institute should continue on a temporary basis up to the 31st March 1926. It is hoped that Government will be able to see their way to make the Institute permanent next year. The scope and functions of the Textile Institute were fully detailed in last year's administration report, and it is unnecessary for me to repeat them here. Suffice it to say that during the year under review the various activities of the Institute developed satisfactorily and that its scope was gradually enlarged. The Institute attracted an ever increasing number of visitors from the weaving community and the general public, all of whom appeared to be favourably impressed with its achievements and potentialities. The work was carried on under some difficulty during the year for, while, as already stated, the Institute proper was situated in Georgetown, the Warp Preparation Section was accommodated in Washeranpet some two miles away.

72. The following is a brief account of the working of the Institute during the year under the several heads:—

(a) *Technical Training*.—The Textile Expert devoted special attention to the preparation of lectures designed to suit the varied character of the instruction, which it was desired to impart, and

the training given was of a thoroughly practical character. The Institute provides two courses of instruction; the Supervisor's Course, which extends over a period of two years and the Artisan Course, in a number of different subjects, which is restricted to six months. The Supervisor's Course is designed for those who intend to become teachers in weaving schools and managers of weaving factories and embraces both the theory and practice of textiles. The course comprises instruction in the weaving of cotton, silk and woollen yarns, the dyeing and printing of cotton cloth, sericulture, silk filature reeling and powerloom weaving as also in the testing of textile fabrics, yarns and cloths, in hosiery manufacture and in the processes of power warp preparation. The Artisan Course, in various subjects, is purely practical and is intended to turn out competent men suitable for employment as maistris in handloom factories, demonstrators in schools and craftsmen. There were forty-one students under training in the Supervisor's Course, and six in the Artisan's Course, during the year under the review.

(b) *Manufacture and distribution of appliances*.—The manufacturing section of the Institute was fully occupied with the construction and supply of improved types of handlooms and appliances, which, after prolonged tests, have proved suitable for adoption. Models of the various looms and appliances are exhibited in the Institute. The value of the appliances sold during the year amounted to Rs. 10,500 as against Rs. 9,233-2-6, and Rs. 2,500 in the years 1923-24 and 1922-23 respectively. The quantity of appliances manufactured and sold would have been greater had it not been for the very limited accommodation which could be spared for this section of the Institute. An Amalsad Hand-sizing Machine was supplied to the Borstal Institute, Tanjore, and one to the Central Jail, Hyderabad; two of these machines were also supplied to the Weaving Superintendents for purposes of demonstration.

(c) *Research and Experiments*.—In the research section of the Institute experiments are carried out on various problems connected with the textile industry, which still await solution, and further progress was made in various directions during the year under review. The original construction of the multiple-box slay was considerably improved. The warp delivery motion in the Amalsad patent hand-sizing machine was further improved by the Textile Expert, and it has now been so perfected that the handloom weaver experiences no difficulty in preparing warps of any length and of any desired number of threads. The Textile Expert constructed a new type of wooden hand-sizing machine, in which the yarn is sized and dried by the induction of cold air by means of a fan. The cost of this machine is Rs. 300, and it is primarily intended for those who cannot afford to buy the Amalsad Hand-sizing Machine, which

is priced at Rs. 2,200. Experiments were also made in the design and construction of an automatic frame loom for weaving woollen cumblies, and these were still in progress at the close of the year.

(d) *Warp Preparation Section*.—It was stated in last year's administration report that the requisite power-driven machinery for starting a pioneer warp-preparation plant had arrived and that arrangements were in progress to accommodate the machinery and plant in the old pencil factory building at Washermanpet. The plant comprises a 200-spindle bobbin winding machine for winding yarns from hanks to warper's bobbins, a beam-warping machine with an end-an-end leasing comb for preparing warps for the sizing machine, a dresser sizing machine for sizing yarns in sheet form, a cross-warp balling machine for winding-sized warps on wooden tubes, and a mixing beek for preparing size mixings. This type of sizing machine enables the warp to be sized and dressed in an exposed sheet form, applies oil to the yarn, keeps every thread quite separate during the entire operation, and allows an end-an-end lease to be introduced in the warp to enable the weaver to group the requisite number of threads for his cloths. It will thus be seen that the method of sizing with this plant resembles closely the street method of sizing by hand. I do not propose to discuss here the economic advantages and merits of the power dresser sizer, but it may be stated that whereas it requires eight handlooms to keep pace with one power loom, it requires 260 operatives to do by hand the work of one person in the power preparatory processes for warp alone, the winding of weft being an extra operation. It is obvious, therefore, that if the economic condition of the handloom weaver is to be materially ameliorated, attention must be concentrated primarily on the preparatory processes, as it is clearly useless to increase the production of the loom, unless the weaver is linked with a more economic and up-to-date method of warp preparation. The type of dresser sizing machine installed in the Textile Institute represents a model, which is employed in connection with the handloom weaving industry in Ireland and on the continent of Europe as well as in power factories, and it turns out a quality of sized warp which is not surpassed by any other type of modern sizing machine. There is no reason to doubt, as a result of experience gained during the year, that it is by far the most suitable type of machine for the Madras Presidency. Experiments in regard to the evolution of suitable sizing mixtures to correspond with the practice in vogue in different localities were carried on during the year under review. A commencement was made by sizing 1,000 yards of 20s grey yarn, and a number of samples of machine-sized warps was sent for trial to various mission schools and also to handloom weavers in various districts through the Weaving Superintendents. There is a good deal

of popular prejudice on the part of the weavers against the use of machine-sized warps, and many difficulties have to be overcome in the initial stages of their introduction. During the year under review, efforts were mainly confined to the demonstration of the practicability of producing warps suitable in every way for the requirements of the handloom weaver, and the training of a staff to operate the plant. The students of the Institute were also instructed in the operation of the plant. It will not, of course, be possible to utilize long machine-sized warps unless the weavers are induced to adopt weaver's beams on their country beams and learn how to wind long warps on such beams. It is gratifying to be able to record therefore that while two years ago there was not a single beam in use, there are now five hundred looms fitted with weaver's beams. It is particularly noteworthy that these beams are being used to an increasing extent in the production of Madras Handkerchiefs which are woven with 60s coloured yarns.

(e) *Hosiery*.—A course of training was provided in the Institute in the manufacture of socks and stockings from cotton, artificial silk and woollen yarns on circular and flat bar machinery, and an attempt was made to introduce hosiery as a home industry. A survey was conducted in the City of Madras with a view to ascertain the number and types of knitting machines at work, as a result of which it was found that there were about forty machines of various types and makes at work in Mylapore, Royapetta, Triplicane, Chintadripet, Periamet, Purasawakam, Park Town, Mannady and Washermanpet. Machines for instructional purposes are already installed in a number of institutions, such as the Sri Ramakrishna Mission Students Home, the Women's Indian Home, Mylapore and the Government Mental Hospital, Purasawakam. The Hosiery Instructor visited these institutions and gave instruction in the working of the machines and, where necessary, carried out necessary adjustments and repairs.

(f) *Lace and embroidery*.—Arrangements were made during the year to provide training for women in lace and embroidery work, and a number of samples of needlework were prepared and exhibited in the Textile Institute. Arrangements were also made to provide training in lace and embroidery in selected centres. In all, 16 women were given instruction in the year under review.

73. *Masulipatam Palampores*.—It was stated in the Bureau section of last year's administration report that the possibility of utilizing alizarine dye in the manufacture of Masulipatam palampores was under examination in consultation with one of the chief dye-importing firms in Madras, and that it was hoped that it would be possible to arrange for a demonstration of printing with alizarine

dye to be carried out at Masulipatam. It was not found possible during the year under review to arrange for a demonstration at Masulipatam, but demonstrations in the printing of the palampores both with indigenous and alizarine dyes were carried out at the Textile Institute, and the results obtained from the latter were promising. At the demonstration of cotton printing with alizarine dye at the Institute, several of the leading block printers of Masulipatam attended, and they appeared to appreciate the comparatively low cost of dyeing with alizarine and the advantage of being able to produce, by the employment of this dye, a considerable range of fast colours in cloth.

74. *Textile Publications.*—The Textile Expert prepared notes on the woollen pile carpet industry in the Madras Presidency, the silk industry in the Madras Presidency, the development of the coir industry on the East Coast and the woollen cumbly industry of the Ceded districts, the two latter of which were published in the form of departmental bulletins during the year.

75. *Miscellaneous.*—The Textile Expert advised and assisted Messrs. Chabaldoss Lilaram, Madras, with reference to the starting of a woollen spinning mill, and the Salem Knitting Factory in regard to the opening of a projected silk waste spinning mill. Mr. Amalsad visited the silk weaving factory of Messrs. Muppanna Somaraju and Veeraraju of Peddapuram, and also that of Bommanna Somaraju and Karra Mallikarjanudu of Uppada, in connection with their applications for loans under the State Aid to Industries Act. He also advised in regard to the development of cumbly manufacture in the Central Jail, Bellary, and of the coir industry in the Central Jail, Cannanore, and prepared plans and estimates for a power silk filature mill in Peddapuram. Technical assistance in a variety of forms was also rendered to the Sri Minakshi Mills, Madura.

SERICULTURE.

76. *Coonoor Silk Farm.*—The proposals sanctioned by Government with a view to provide for the expansion of the hill farm at Coonoor into a central distribution station for eggs or seeds, cuttings or seedlings and into a research institute for the silk industry of the Presidency were referred to in detail in last year's administration report. A block of 12 acres of land on Tiger Hill, Coonoor, for the expansion of the mulberry cultivation was finally chosen in consultation with the Forest department and was acquired in June. The land, which was covered with tree growth, had first to be cleared before it could be prepared for mulberry cultivation. Plans for the construction of a suitable rearing house were drawn up, but the work of construction had not been taken in hand by the end of the year. 2,983 layings of seeds were supplied from the

Coonoor farm to Kollegal, and 1,385 layings to the newly started areas of the Presidency. The Sericultural Assistant devoted part of his attention during the year to the conduct of research work with a view to the evolution of a suitable variety of multivoltine worm by cross-breeding the European and Mysore races.

77. *Peripatetic Silk Rearing Party.*—The proportion of the whole Kollegal requirements of seed, which can be supplied from the sericultural station at Coonoor, is at present relatively small, the total requirements amounting to about 75 lakhs of layings per annum. Even when the operations at Coonoor are fully developed, it is not anticipated that it will be possible to produce more than three lakhs of layings per annum for distribution to the rearers in Kollegal. Obviously, therefore, the bulk of the rearers will still have to depend upon Mysore for supplies, and hence efforts were made by the department during the year to educate the rearers to test their own moths. It is with this object that the use of the microscope was demonstrated by the Peripatetic Rearing Party. The party visited the houses of 885 silk rearers and undertook, by means of the departmental microscope, the testing of 23,563 layings. The party also continued to demonstrate the importance of pure air, space, cleanliness, regular feeding, etc., to the rearers in their own homes. The party distributed to the rearers 2,983 layings of guaranteed Government disease-free seeds raised in the Coonoor farm.

78. *District Sericultural Work.*—During the previous year, the Silk Superintendent had visited various selected localities and, as a result of his efforts, several tracts were brought under mulberry cultivation. A number of new tracts were brought under mulberry cultivation during the year and in some cases the rearing of silk worms was also undertaken. These operations were carried out under the control of the Weaving Superintendents, each of whom was assisted by a practical sericulturist. Although the area of many of the plots of land brought under mulberry cultivation was small, the total acreage brought under cultivation during the year amounted to 80 acres. These experiments have not involved the department in any expenditure as the assistance rendered has been confined to the provision of expert advice and practical guidance. The experience gained during the year indicates that it is possible to grow mulberry on an extensive scale but that the rearing of silk worms cannot be undertaken throughout the year. It has also been ascertained that the average outturn of leaf per acre per annum is approximately from 30 to 40 head loads worth between Rs. 2 and 3 a load, and that the average annual expenditure on the cultivation of bush mulberry amounts to about Rs. 30 per acre. Thus, the return per annum may be taken as approximately Rs. 60. It has

also been estimated that an acre of land will provide sufficient leaves for 500 layings per annum although in the absence of power filatures to absorb the dry cocoons it was not possible to estimate the earnings of a rearer. Considerable difficulty was experienced in retaining the services of practical sericulturists most of whom were recruited from Kollegal, but as the supervision of mulberry cultivation and silk worm rearing do not call for any considerable technical skill, it was found possible in most cases to train suitable men locally for the work.

79. *Silk Filature*.—The breeding of silk worms and silk reeling, as practised at present, are cottage industries, but the former industry is more correctly described by that name. The two industries even now are distinct in Kollegal where alone sericulture is established as an industry. Silk reeling is not practised as a rule by the same persons who grow silk cocoons. The silk reeler buys his cocoons to reel and to some extent at least the industry is financed by petty capitalists and the cottage worker works for hire. The indigenous methods of reeling and preparing silk leave much to be desired; the silk produced is suitable only for internal consumption and has no value in the world's markets. It is obviously undesirable, therefore, to introduce widely the crude type of Kollegal reeling machine and if any improvement or progress in the method of preparing silk is to be made, and the Indian reeler is to be shown how to produce a higher quality of silk which will command more than the local limited market and realize a higher price, it is necessary to set up silk filatures for reeling silk on modern Italian machinery. It is proposed by the department to introduce sericulture in extensive areas throughout the Presidency wherever it is found that the mulberry bush, and the silk worm that feeds on it, will thrive. If these efforts are successful, there will be a greater volume of silk to market and the steps taken by the department to popularize sericulture carry with them the necessity to teach modern methods of reeling, throwing and preparing silk as otherwise the local markets may be flooded by inferior silk. It is an established fact that the reeling of silk is essentially a power process. The proper line of development, therefore, is to base compact silk filatures of a modern type on compact cocoon producing areas, which will enable raw silk of a better quality and commanding a better price to be produced. Similarly an improvement of the quality of Indian silk cloth involves the introduction of modern methods of throwing silk by which alone a better quality of yarn can be produced. Modern methods of preparing improved silk yarn for the loom are equally necessary and there seems no possibility of development or of South Indian silk finding its way into the world's market as raw silk yarn and cloth so long as the present primitive reeling and

throwing persist. Proposals were therefore submitted to Government for the purchase of two domestic filature reeling machines of the Italian type for demonstration, and the training of operatives, in the cocoon producing areas, and for one steam two basin filature for demonstration at the Textile Institute so as to enable instruction to be given in modern methods of reeling, throwing and preparation. Now that the latter plant has been installed in the Textile Institute it will be possible to show persons interested what processes are involved in the manufacture of high class silk and to train operatives in such processes. It is hoped that on the completion of their training the students will be able to interest capital in the industry and that in this way a number of steam filatures will be set up in suitable areas. If, however, this hope is not realised it will be necessary for Government to consider the question of pioneering the industry itself.

V

80. Under the head of assistance intended principally for the benefit of agriculturists, the work of the Engineering branch of the department is grouped. The work of this branch consists of the investigation of new engineering projects, the erection of new installations, the maintenance of power installations and industrial machinery already at work, the examination and testing of industrial machinery to determine whether it is suitable or not for the purpose intended, the conduct of boring operations to ascertain the existence of sub-soil water or extend the existing supply thereof, and of the supply, erection and maintenance of pumps suitable for irrigation.

81. *Staff*.—Mr. L. S. Pinto held the appointment of Industrial Engineer up to 17th of July 1924 when he handed over charge to Mr. N. M. Adyantayya, and in accordance with G.O. No. 1185, Development, dated 30th June 1924, proceeded on deputation to carry out an intensive study of modern boring practice in Great Britain and America. Mr. N. M. Adyantayya acted as Industrial Engineer until the close of the year under review. Mr. S. Rajagopal Nayudu, Assistant Industrial Engineer, was in direct charge of the departmental engineering workshops up to the 10th of April 1924, when he was relieved by Mr. N. Aiyakannu Achari, consequent on his transfer to the charge of the Coimbatore division. Mr. H. E. R. Dunhill was in charge of the Coimbatore division up to the 17th April 1924 when he was appointed as Assistant Agricultural Engineer in the Department of Agriculture and handed over charge to Mr. S. Rajagopala Nayudu, who was in charge of the division until the end of the year. Mr. P. K. S. Ramanujam

Pillai was in charge of the Tanjore division throughout the year. Mr. A. V. Varadaraja Mudaliyar acted as Assistant Industrial Engineer in charge of the Bezwada division throughout the period under review, and shortly after the close of the year was confirmed in his appointment.

82. *Executive staff.*—The following table shows the jurisdiction of the executive staff as it stood on the 31st March 1925:—

Districts comprising the division.	Name of sub-division in charge of supervisors.	Head-quarters of sub-division.	Supervisors.	Mechanics.	Boring maistris.	Apprentice maistris.	Surveyors.	Remarks.
Industrial Engineering Workshop.	Madras ..	Madras ..	1	1	..	..	..	
Drawing Branch ..	Do. ..	Do. ..	..	1	..	..	1	
<i>Tanjore division.</i>								
South Arcot ..	Cuddalore ..	Cuddalore ..	1*	2†	6	1	..	* On probation. † Mechanic in charge.
Tanjore ..	Tanjore ..	Tanjore ..	1	3	2	..	..	
Trichinopoly and Madurai.	Trichinopoly.	Trichinopoly.	1*	4†	6	..	..	* Acting supervisor under training. † 1 in charge of subdivision.
Ramnad and Tinnevely.	Tinnevely ..	Tinnevely ..	1	2	7	..	1	
<i>Coimbatore division.</i>								
Malabar and South Kanara.	Calicut ..	Calicut ..	..	1*	2	..	..	* In charge of subdivision.
Coimbatore, Nilgiris and Salem.	Coimbatore ..	Coimbatore ..	1*	5	7	3	..	* On probation in charge of subdivision.
North Arcot and Chittoor.	Vellore ..	Vellore ..	2*	1	9	..	..	* 1 on probation.
<i>Bezwada division.</i>								
Ganjam, Vizagapatam and Godavari.	Vizagapatam.	Vizagapatam.	..	3*	6	..	..	* 1 mechanic in charge of sub-division.
Kistna ..	Bezwada ..	Bezwada ..	..	2*	5	1	..	* Do.
Guntur and Nellore.	Nellore ..	Nellore ..	1	1	4	1	..	
Bellary, Kurnool, Cuddapah and Anantapur.	Bellary ..	Bellary ..	2*	3†	6	1	..	* 1 on probation. † 1 in charge of subdivision.
<i>Madras subdivision.</i>								
Under the control of the Industrial Engineer, Madras and Chingleput.	Madras ..	Madras ..	2*	4	8	1	..	* On probation.

83. *Information and advice.*—General information and advice on engineering questions, as is now well known, is given free provided no local inspection is involved and the number of such enquiries disposed increased from 127 in the previous year to 159 during the period under review. Advice was also given to several co-operative societies and Government departments on a variety of engineering matters. In cases where a local inspection is requisite, a fee of Rs. 15 is payable, in return for which advice is given in regard to the selection of a suitable site for a mill, factory or installation and as to the most suitable type of machinery for the purpose. The following table shows the number of applications received and disposed of during the year:—

Division.	Pending on 1st April 1924.	Received during the year.	Disposal of during the year	Pending on 31st March 1925.
Tanjore	5	52	54	3
Coimbatore	10	53	43	20
Bezwada	11	38	46	3
Madras	2	14	16	..
Total ..	28	157	159	26

84. *New erections.*—The erection of machinery and plant continued to be undertaken for a nominal fee of 2½ per cent. on the capital cost of the machinery installed. As will be seen from the following table which shows the number of plants erected in the various divisions, the number of plants erected during the year showed an increase as compared with the previous year:—

Divisions.	Applications pending on 1st April 1924.	Received during the year.	Disposed of during the year.	Pending on 31st March 1925.	Remarks.
Tanjore	3	25	20(a)	8	(a) Eleven industrial, eight pumping and one combined.
Coimbatore ..	4	20	24(b)	..	(b) Four industrial, nineteen pumping and one combined.
Bezwada	5	13	11(c)	7	(c) Eight pumping and three industrial.
Madras	..	5	5	..	
Total ..	12	63	60	15	

The area brought, or proposed to be brought, under irrigation as a result of the pumping plants erected during, or pending erection at the close of the year by the department was as follows:—

	acs.
Tanjore division	170
Coimbatore division	119
Bezwada „	76
Madras	30
	—
	395
	—

85. *Compounding system.*—For a fixed fee of Rs. 15 per annum, private installation owners are entitled to have their plants inspected and overhauled three times a year, and also at other times if special requisitions are received for which, however, extra fees are charged. The number of plants under maintenance by the department during the year under review declined slightly to 371 as compared with 383 in the previous year. The following statement shows the number of plants under maintenance in the various divisions:—

Division.	Industrial plants.	Pumping plants.	Combined plants.	Total.
Tanjore	123	36	11	170
Coimbatore	39	35	13	87
Bezwada	42	22	2	66
Madras	..	..	..	48
				—
				371

86. *Loans sanctioned during the year.*—Under the Agriculturists' Loans Act, as is well known, loans are granted by Government on favourable conditions to ryots for the installation of pumping machinery in cases where there is a reasonable prospect that, by means of such loans, the lands of the ryot will be improved and his income increased. Eighteen loans were sanctioned during the year, and an aggregate amount of Rs. 88,500 was sanctioned for disbursement to the applicants. The amount actually disbursed during the year was Rs. 97,300 of which loans sanctioned during the period under review accounted for Rs. 57,500, and loans sanctioned but not disbursed during the previous year, for the balance. Of the 18 loans sanctioned during the year, 8 were in the Tanjore division, 6 in the Coimbatore division, 3 in the Bezwada division and 1 in the Madras subdivision.

The amounts disbursed in the preceding years are:

1920-21	Rs. 12,000	2 applicants.
1921-22	33,000	5 „
1922-23	46,500	9 „
1923-24	74,000	11 „

There is thus a progressive increase in the amounts sanctioned, and this I attribute to the speeding up of the enquiries preliminary to the grant or refusal of a loan. The department grants loans only on satisfactory proof that the supply of water is adequate, that the water can be used profitably for irrigation and that the borrower can give adequate security, while it has also to be ascertained that the Irrigation department has no objection to urge. Investigation on these lines takes time, but under the existing arrangements avoidable delays are rare and the period of enquiry has been shortened from years in some cases to a few months.

87. *Boring.*—The department maintained in operation five power-drills and fifty hand-drills, the latter showing an increase of three as compared with the previous year. I stated in last year's report that provision has been made for the purchase of a number of hand and power-drills, and that it had been decided that before entering into contracts for the supply of these, the subject of modern boring practice in Great Britain and the United States should be first studied by the Industrial Engineer with reference to the types of drills which are best suited to the conditions which obtain in the Madras Presidency. What is required is a drill, which, although not too heavy to pass over ordinary district board bridges, is of sufficiently strong construction to enable it to be transported over rough roads or cart-tracks. The drills also require to be sufficiently simple in operation to be managed by the class of labour which will have to work them, while the relative spheres of usefulness of the hand and power drill also required investigation. There were many other problems in connection with boring operations in respect of which our knowledge was admittedly imperfect, and which required investigation in the light of the latest boring practice. For instance, much more information than is available was required in regard to the efficient operation of drills under the varying conditions of strata which are ordinarily met with. The question of keeping the borehole clear during the drilling operation required study, while another important point for investigation was that of the size of the borehole. In short, I considered it vitally necessary that we should bring our knowledge of modern boring practice up to date, and that it would be advantageous, before entering into contracts for the supply of the requisite power-drills, to depute the Industrial Engineer to visit the United States of America, where both oil and water drilling are highly developed, to study the latest American practice.

The great importance of developing boring operations in the interests of the agricultural and economic development of the Presidency appeared to me to fully warrant the deputation of an officer for the purpose. In G.O. No. 1185, Development, dated the 30th June 1924, Government sanctioned Mr. Pinto's deputation to Great Britain and America and he had not returned therefrom by the close of the year. He has since returned to duty and two power-drills ordered by the High Commissioner on his recommendation have been received, and will soon be at work.

88. The total depth bored through during the year was 28,841 feet as against 24,180 feet in the previous year, the average depth of a boring working at about 42 feet. The following table exhibits the territorial distribution of applications received for hand and power borings, the number of feet bored in each of the divisions and other relevant particulars:—

Division.	Applications pending on 31st March 1924.	Applications registered during the year.	Disposed of during the year.	Pending on 1st April 1925.	Total number of feet bored.	Number of borings put down.	Number of successful borings.	Number of unsuccessful borings.
Tanjore	34	76	81	29	6,493	197	146	51
Coimbatore	58	54	62	50	3,618	124	61	63
Bezwada	81	163	180	67	13,404	240	151	89
Madras	8	61	64	5	5,326	133	76	57*
Total	184	354	387	151	28,841	694	434	260

* Two cleaning boreholes.

89. The following is a condensed account of some of the more interesting features of the boring work carried out in the several divisions during the year:—

Bezwada division.—In the Bezwada division the greatest depth bored with a hand-boring set was 241 feet which was conducted at Tadepalligudem in Kistna district for the purpose of augmenting the water-supply to a rice mill, a supply at the rate of 25 gallons per minute being provided. Three other borings were also conducted up to depths of 200 feet. An interesting boring, which attracted considerable notice in the locality, was made in a village near Bezwada, a depth of 60 feet had been bored in a well of 40 feet depth when an inflammable gas and crystal-like white pebbles arose from the borehole. The people in the locality believed it to be coal-gas and that there was a deposit of coal underneath. Samples of the stones brought out of the borehole were sent to the Director, Geological Survey, for examination, and his report was to the effect that the material was white quartz and possessed no

practical value. In another case, there was no water in a well of 28 feet depth, but on a boring being put down to a depth of 32 feet, 10 feet of water accumulated in the well which enabled the owner to irrigate five acres of dry crops. In a boring carried to a depth of 67 feet in an existing well 18 feet deep in a village in Guntur taluk, there was a 9 feet rise of water in the well, and this enabled the owner to employ two mhotes, whereas before the boring the water was unusable on account of its brackish properties. In another village, an attempt was made to tap artesian boring, and after boring for about 120 feet, water rose to about three inches above ground level. Unfortunately, however, the water was saline and hence unsuitable for the irrigation of paddy for which the supply was required.

Tanjore division.—The greatest depth bored in this division was 242 feet for a party in Pattukkottai in the Tanjore district. The boring was successful. Nine other deep borings ranging from 150 feet to 218 feet were also conducted during the year, of which two were unsuccessful and two were for the purpose of testing the subterranean strata.

Coimbatore division.—The greatest depth bored in this division by a power-drill was 231 feet 6 inches for a party in Palayakottai and was quite successful. In a number of cases, the supply was enhanced to such an extent as to warrant the installation of a power pump.

90. *Mapping of underground water-supplies.*—During the year under review one surveyor was employed on the work of connecting the levels of boreholes put down by the department with mean sea level. Work had been started during the previous year in the Neilore district, and during the period under review 188½ miles of levels were taken, and 131 borings were connected with mean sea level. Operations were also conducted in the Kistna district, and the mapping of the Bezwada taluk was completed with the taking of 63 miles of levels and the connection with mean sea level of 34 borings. Another surveyor was posted to the Tinnevely subdivision and through his agency 174½ miles of levels were taken and 144 borings were connected with mean sea level during the year under review.

91. *Pumping sets.*—The department maintains a number of pumping plants, comprising oil engines and centrifugal pumps, which are utilized in connection with the sinking and testing of wells and the watering of crops to save them from withering. For several years it has not been found possible to comply with more than a small proportion of the applications received for assistance, and

shortly after the close of the year Government sanctioned the purchase of twelve pumping sets at a cost not exceeding Rs. 42,000. The following statement shows the number of applications for pumping sets registered and disposed during the year:—

Division.	Number of applications pending on 1st April 1924.	Number of applications registered during the year.	Number disposed of during the year.	Number pending on 1st April 1925.
Tanjore	..	16	15	1
Coimbatore	2	13	14	1
Bezwada	5	12	15	2
Madras	1	19	19	1
Total ..	8	60	63	5

92. The torpedoing sets possessed by the department are used for blasting boreholes in rocks in the hope of exposing the water-sources in the fissures. Torpedoing is tried as a last resort when a bore through rock fails to find water and judging by results is of somewhat speculative value. The following statement shows the number of applications registered and disposed of during the year:—

Division.	Applications pending on 1st April 1924.	Registered during the year.	Disposed of during the year.	Pending on 1st April 1925.
Tanjore	6	8	10	4
Coimbatore	4	8	8	4
Bezwada	1	7	7	1
Madras	..	1	1	..
Total ..	11	24	26	9

93. *Industrial workshops.*—The value of the work turned out by the workshops increased from Rs. 61,455-5-0 in the previous year to Rs. 89,882 during the period under review, and the operations yielded a net profit of Rs. 4,237-8-4. The reduction in profit as compared with that of the previous year is attributable to the workshop having been debited with increased overhead charges, and for the first time with an amount of Rs. 1,956-6-1 for leave allowances and pension contributions, certain charges which, in the previous year, had been debited against the district engineering organization, were also carried by the workshops during the period under review. All the handboring sets maintained by the department were provided by the workshops with collapsible iron derrick posts during the year; while, as an experimental measure, a number of boring sets were provided with a complete set of tempering apparatus which enables a boring maistri to forge and temper his tools on the spot correctly to gauge and so renders him independent

of the village blacksmith, who is not always found within reasonable distance of the workspot, and in any case usually demands exorbitant rates. A borehole test pump designed to suit the requirements of the department was constructed in the workshops and proved very successful in operation. It was demonstrated at the exhibition held at the Madras Park Fair, where it was purchased by a visitor who was favourably impressed with its performance under working conditions. One of the functions of the Engineering branch, as already stated, is to examine and test industrial and pumping machinery, with a view to determine whether it is suitable or not for the purpose intended. At the request of Messrs. MacDowell & Co., the local agents for Jastram pumping sets, an official trial was made with a view to determine the suitability of the plant for ryots possessing small holdings. The trials conducted included tests of the petrol and kerosene oil consumption, load under varying heads and the mechanical efficiency of the combination. This plant has the advantage of very great portability which enables it to be moved readily from one well to another. As a result of the trials conducted by the department with this plant, it is now recommended for adoption by ryots in suitable cases. A wind-mill manufactured by Messrs. George Brunton & Co., Cochin, was also placed at the disposal of the department for an official efficiency test, and the experiments therein were in progress at the end of the year. A power-driven deep well pump, possessing some special features, imported by Messrs. Brunsweiler & Co., was also under trial at the close of the year. A feature of the workshop is the carrying out of repairs and renewals of component parts of pumping sets and industrial plants for compounded installation owners. The repairs are done quickly, economically and efficiently, and the facilities offered by the workshops are greatly appreciated by the ryots and small industrialists.

94. *Receipts and charges.*—The total receipts of the Engineering section of the department for the year under review amounted to Rs. 1,02,158-1-3 as against Rs. 90,442-5-3 in the previous year. The charges advanced slightly from Rs. 2,13,526-2-0 for the previous year to Rs. 2,37,808-15-9 during the year under review. I think that the public gets good value for its money.

INDUSTRIAL EDUCATION.

95. Mr. Fyfe held the appointment of Inspector of Industrial Schools throughout the year and also functioned as controlling officer for the Madras Trades School. He spent 102 days on tour and in addition to inspecting the aided industrial schools and the Madura Industrial Institute, visited during the course of his tours several of the principal jails and furnished written evidence for, and

gave oral evidence before, the Jail Industries Committee. Mr. Fyfe acted as Secretary to the Board of Visitors of the Madura Industrial Institute and as a Member of the Board of Examiners of the Government Fisheries Training Institute, Calicut.

96. *Committee on Technical and Industrial Education.*—The orders of Government on the recommendations of the Committee, whose report was submitted during the previous year, were issued in G.O. No. 2043, dated the 28th November 1924. Government accepted generally the principal recommendations of the Committee and called for detailed proposals for giving effect to such of them as do not involve considerable financial outlay. In particular, Government accepted the view of the Committee that a greater measure of assistance should be granted to aided schools, and that it is desirable that model Government Industrial schools should be established in each of the language areas of this Presidency. The Inspector of Industrial Schools has, since the receipt of the Government orders, been engaged, in working out the detailed proposals. With improved financial conditions, it is hoped to give effect to almost all the recommendations of the Committee in the reasonably near future.

97. *State Technical Scholarships.*—Two scholarships fell vacant during the year consequent on the return to India of Messrs. P. P. Hayrambha and K. Adinarayana Rao who had been granted scholarships for the study of Metallurgy and Industrial Alcohol respectively. The necessary steps to advertise the vacancies and select candidates to fill them were taken towards the close of the year under review. The following statement shows the Madras Technical scholars who were undergoing courses of training in the United Kingdom at the end of the year:—

Number and name.	Subject for the study of which the scholarship was granted.
1. K. Venkataraman ..	Textile Chemistry with particular reference to bleaching and finishing of cotton and silk fabrics.
2. D. Sundaravelu Pillai ..	Ceramics.
3. C. K. Taylor ..	Manufacture of paints and varnishes.
4. V. Subrahmanyam ..	Manufacture of standard food products.
5. S. Raja ..	Practice and chemistry of leather manufacture.
6. C. K. Menon ..	Electro Metallurgy, i.e., electro-plating, electro-refining, etc.

98. *Post-graduate scholarships.*—Seven scholarships were awarded during the year tenable at the Indian Institute of Science, Bangalore, bringing the total number of scholarships up to thirteen at the end of the year. Of these seven were in the first, four in

the second, and two in the third year of study. One of the recommendations of the Leather Industry Committee was that a research scholarship should be established tenable at the Leather Trades Institute, Madras, the necessary funds being found by reducing the number of scholarships at the Indian Institute of Science, Bangalore. Government accepted this recommendation and directed that the number of scholarships tenable at Bangalore be reduced from 15 to 14 and the scholarship at the Leather Trades Institute thus provided for was awarded for a period of one year from 1st July 1924 to Mr. Yoganandam an ex-student of the Institute. In accordance with the recommendation of the Committee on Technical and Industrial Education, Government have directed that two of these post-graduate scholarships be reserved for candidates taking up the study of Electrical Technology. Government have also ordered that the scholarship holders at the Indian Institute of Science should execute a similar bond to that taken from the scholarship holders at the Victoria Jubilee Technical Institute, Bombay.

99. *Scholarships tenable at the Victoria Jubilee Technical Institute, Bombay.*—Five new scholarships were awarded during the year under review, three for the study of Textile Manufacture, one for Technical and Applied Chemistry and one for Sanitary Engineering and Plumbing. On behalf of these five and also of the four scholarship holders nominated during the previous year, a sum of Rs. 1,800 was contributed to the funds of the Institute in accordance with the Priority Scheme propounded by the Board of Trustees of the Institute and referred to in some detail in paragraph 116 of the administration report of the preceding year.

100. *Industrial School scholarships.*—Sixty new scholarships tenable for a period of five years and ranging in value from Rs. 1-8-0 to Rs. 7-8-0 per mensem were, as usual, awarded with effect from 1st July 1924 to pupils learning trades in the various recognized industrial schools. In accordance with the provisions of the notification printed as appendix to G.O. No. 1481, dated 12th August 1920, a bonus of Rs. 35 each was granted to 23 pupils who had been nominated for scholarships tenable for a period of four years with effect from 1st July 1920 and who had satisfactorily completed their course of study during the year under review.

101. *Madras Government Trades School.*—In the early part of the year the school was transferred from the temporary rented buildings which it had occupied since 1916 to its new permanent building in Broadway and the remainder of the year was spent in settling down in the new premises. In spite of the general unsettlement consequent on the transfer and the installation and erection

of new equipment, the efficiency of the school was well maintained and the transfer to the extensive new premises resulted in a considerable improvement in the work of the various classes.

102. *Staff.*—Mr. N. M. Adyantayya, the permanent Principal, was on other duty as officiating Industrial Engineer from the 17th July till the end of the year. In his absence Mr. Jagannathan, the Senior Lecturer, acted as Principal.

103. *New equipment.*—During the year the machine workshop and the electrical laboratory were equipped with a comprehensive range of modern machine tools and other apparatus and the senior students are now able to pursue their studies much further than they could formerly.

104. *Number of students on the rolls.*—The number of new admissions to the school during the year was 295 of which 210 were Non-Brahmins, 51 Indian Christians, 21 Brahmans, 8 Anglo-Indians and 5 Muhammadans. The total strength of the school at the close of the year was 458. It is interesting to note that the admissions exceed the total strength of the school two years ago by 78 and this is sufficient indication of the value attached to the instruction given by those interested, viz., employers of labour and their educated employees. The class in Sanitary Science for Corporation Overseers was revived after being dormant for a year, and was well attended, the Corporation officers concerned taking considerable interest in the work of the class. During the year 60 final year students were examined by outside examiners not connected with the school and 37 of them secured passes. For the special examination in Electrical Wiring 53 candidates appeared, 39 from outside and 14 from the school classes. Of these 28 were successful in satisfying the examiners—Mr. C. V. Krishnaswami Chetty, Electrical Engineer to the Corporation of Madras, and Mr. P. V. Chari, Assistant Electrical Engineer to Government—19 of whom were from outside and 9 from the school classes. All the Electrical Engineering students who completed their training are in employment. One Electrical Engineering student has proceeded to Faraday House Engineering School, England, for further study. The school was again used as a centre for the examinations of the City and Guilds of London Institute. Twenty-six candidates appeared for these examinations, 16 of whom were successful, 5 of the successful candidates were students in regular attendance at the school. A noteworthy feature of the year's work was the series of special lectures given by gentlemen in Madras on subjects likely to interest the students. For these lectures the ordinary work of the school was suspended and the students and interested visitors assembled in the main hall. In October Mr. Perry of the Vacuum Oil Company delivered a lecture

on 'Lubrication and Lubricants', and in December Mr. Orme of the Electric Supply Corporation lectured on 'Electric Power House Practice'. These lectures are greatly appreciated by the students and also serve the useful purpose of keeping the employers of Madras, a number of whom generally attend the lectures as visitors, in touch with the work of the school.

105. *Railway Branch School.*—The Apprentice School in connection with the Perambur Railway Works had another very successful year. During the year 31 fresh admissions were made in the day classes and 43 in the evening (vernacular) classes. The total strength at the end of the year was 164 divided into 21 classes. Four students completed the senior apprentice course and five the junior course. All of these students are employed on suitable graded salaries in the shops. Much of the success of the Perambur branch is due to the cordial relations which exist between the staff of the works and the staff of the school, the railway officers and foremen rendering willing and valuable assistance in correlating the class instruction with the practical every-day work of the apprentices in the shops.

106. *Madura Industrial Institute.*—M.R.Ry. Rao Sahib C. S. Ramachandra Ayyar acted as Superintendent throughout the year. Several junior members of the staff were on leave for various periods. Mr. Manuel, the Assistant Carpentry Instructor, accepted a post as foreman carpenter in the Madras Penitentiary and his place was filled by a young man trained in the School of Arts, Madras, and in the Teachers' Training Section of St. Joseph's Industrial School, Tindivanam. Attempts were made to secure a machine shop foreman with a knowledge of electricity, but it has not been found possible to secure a suitable man on the salary of the post.

107. *Buildings.*—Government have agreed that the main block of the building may be surrendered and utilized as offices by any other Government department requiring such accommodation. Pending the handing over of this part of the building, the Manual Training and Drawing classes remained in partial occupation. The block of three kitchens was completed during the year and has now been handed over, and some little progress was made towards the construction of warden's quarters which are now very urgently required to relieve the congestion on the hostel proper a portion of which the warden at present occupies.

108. *Admissions.*—Fifty candidates offered themselves for admission to the probationers class of which number 31 were selected and 19 of these were admitted to the first year's course at the end

of their probationary period. At the end of the year under review the total number on the rolls was 89 distributed as follows :—

					Metal work.	Wood work.
First year	..	..	..	..	16	4
Second "	..	..	..	..	8	3
Third "	..	..	..	..	12	6
Fourth "	..	..	..	..	13	3
Fifth "	..	..	..	..	12	2
Motor driving class	..	..	..	..	..	10

109. *Strike of apprentices.*—The apprentices were on strike for about a fortnight at the commencement of the year. A report in detail on the strike and the action taken on the various points at issue was submitted to Government at the time. The apprentices now appear to be quite contented. They certainly work harder and more cheerfully than before, and the discipline is at present very good indeed.

110. *Miscellaneous.*—There were a few additions to the equipment during the year but some of the machinery still has to be erected when funds become available. The motor section is now firmly established but it is difficult, with the existing staff, to give the apprentices the individual attention they require. The Board of Visitors have had this question under consideration with a view to devising means of improving the nature of the instruction given without undue expenditure on extra staff. The receipts of the Institute for the year amounted to Rs. 32,475 being a considerable increase over the figures of the previous year. The expenditure amounted to Rs. 72,666 being an increase of about Rs. 9,500 over last year's figures but the extra expenditure was to some extent made up of capital expenditure on new equipment.

111. The Board of Visitors which was constituted last year held three meetings during the period under review. The success which attended the working of the Institute during the year is largely due to the co-operation of the local members of the Board and in particular the Chairman, Municipal Council, Madura, the President, District Board, Ramnad, the Superintendent, Pasumalai Trades School, and the Chief Engineer, Madura Mills, gave valuable assistance and advice.

112. *Aided Industrial Schools.*—The number of industrial schools recognized by the department on the 31st March 1925 was 51 of which all except two were in receipt of grants-in-aid. At the close of the year there were 2,584 pupils under training of whom 1,616 were Indian Christians, 456 Non-Brahman Hindus, 178 Muhammadans, 175 from the depressed classes, 82 Brahmans, 65 European and Anglo-Indians and 12 others. An amount of Rupees

68,990 was distributed to these institutions in the form of maintenance grant-in-aid representing an average of slightly over Rs. 26-8-0 per pupil per annum. A further amount of Rs. 14,873 was distributed as half grants for the purchase of equipment. A total of Rs. 21,395 was expended in building grants as follows :—

Serial number.	Name of school.	Amount of grant.	Building erected.
1	The Danish Mission Industrial School, Panruti.	Rs. 3,600	Hostel.
2	The Pasumalai Trades School ..	4,462	Blacksmiths' workshop and engine room.
3	The Wesleyan Mission Industrial School, Ikkadu, Tiruvallur.	13,333	Weaving classrooms.

Five fresh recognitions were granted during the year and a number of other applications were held over for consideration when funds are available. Many of the schools suffered from scarcity of funds during the year and in particular the finances of such of the institutions as belong to foreign missions have been hard hit by the heavy depreciation in the Continental Exchanges which in a number of cases has resulted in a stoppage of contributions from abroad. I regret that the amount at my disposal for distribution in the form of maintenance grants was so small as to preclude my coming to the rescue in one or two very critical cases. I give below short notes on a few of these institutions.

113. *St. Mary's Industrial School, Kumbakonam.*—This institution continues to develop. It passed through an anxious time for a few months in the year when orders were few and receipts dwindled to vanishing point; as a result of which the manager was compelled to realize some private investments in Europe to tide him over the unfavourable period. He lost considerably on the exchange but the result appears to have justified his sacrifice and the school appears to have entered on a new lease of usefulness.

114. *The American Arcot Mission Industrial School, Katpadi,* continues to develop and the accommodation which was added to it a few years ago is already fully taxed. A young American Missionary has been specially trained for the post of Assistant to Mr. Rottschaeffer, the Manager, and a still further development of this very efficient institution may be looked for in the next few years.

115. *The St. Joseph's Industrial School, Coimbatore,* continues to develop and to provide a very efficient form of practical training much in demand in the locality. The Rev. Fr. Beyles has had to take long sick leave but his place as manager has been filled by Fr. Perrin who has emerged from his partial retirement to put in

another spell of useful work in the school he did so much to develop in the years immediately following his return from service in the Great War.

116. *The Danish Mission School, Panruti*, has also grown in strength and usefulness. The hostel completed during the year is already fully occupied and Mr. Theill, the Manager, is considering schemes for still further increasing the accommodation. This school has taken full advantage of the great demand for artificial silk products and some of the fabrics woven on the handlooms set up in the school are a credit to the pupils and management alike.

117. *The Sri Ram Motor School, Madras*.—This school, which was removed to more extensive premises in Wallajah Road during the year, is not aided financially, but is filling a real need and receiving the support of the motor-car trade in Madras. It is undoubtedly of considerable value in the development of the motor industry and if still further developed should go a long way to provide the class of driver mechanic likely to be required in increased number during the next few years consequent on the replacement by motor transport of the primitive methods at present in force.

118. *The Rajah's Industrial School, Parlakimedi*, continues to be the only recognized industrial school maintained by a zamindar in this Presidency but there are signs that other zamindars are interesting themselves in the subject and I hope to see the good example set by the Rajah of Parlakimedi followed by at least two other zamindars in the Presidency in the near future. This school has now outgrown its accommodation and plans and estimates have been prepared with a view to considerable extensions.

119. *The Women's Home of Service, Mylapore*.—The lace making and embroidery classes attached to this Home were recognized during the year and already show signs of considerable improvement. It is hoped that this school will develop and fill a want in that locality where many women feel the need of a subsidiary industry by which the domestic budget may be augmented in times of scarcity.

120. *The Anjuman Industrial School, Melvisharam*, continues to develop steadily and is a very good example of what can be done on purely Indian lines. The present President and Honorary Secretary deserve the sincere thanks of their co-religionists for their painstaking efforts in connection with this institution.

121. *The Teachers Training Section* attached to the St. Joseph's Industrial School, Tindivanam, continued to turn out a good type of teacher of cabinet making. During the year Government approved my proposal that the benefits of this training section, which

is particularly fortunate in having a man so well qualified as Brother John Baptist as its head, should be extended to candidates nominated by public bodies, other Provinces or private parties, on payment of reasonable tuition fees.

An idea appears to be generally current that as most of the aided industrial schools are maintained by Christian missions working in the country, these schools are not open to others than Christians belonging to the missions which maintain them. This is by no means the case. All or practically all of the mission industrial schools are ready to admit non-Christians of whatever persuasion and in fact in many of them Hindus of all kinds and Muhammadans are freely accepted.

122. In Appendices V and VI will be found a complete list of the recognized industrial schools in receipt of grants-in-aid from this department with details of the number of pupils, subjects in which instruction is provided and the grants paid during the year under review.

123. *Training of Mappillas*.—In addition to the grant-in-aid to industrial schools, Government, during the year, as a special case, made a grant of Rs. 1,000, and promised a further sum of Rs. 1,000, to the Y.M.C.A. to assist a scheme for training Mappillas in cottage industries in the rebel area of Malabar. The scheme had been started independent of Government help and came to a stop for want of funds. Since Government have provided the requisite financial assistance a fresh impetus has been given to the work and considerable progress has been made under the management of Mr. Jacobi, the local Indian Officer of the Y.M.C.A. This work on behalf of the Mappillas has been centred at Areakode in the heart of what was once the rebel area, and though not recognized as an ordinary industrial school, it is inspected by the Inspector of Industrial Schools in the course of his tours in the district.

124. *General*.—The education section had a particularly busy year as the work arising out of the recommendations of the Committee on Technical and Industrial Education was particularly heavy. The orders of Government in respect of the Committee were received in November but even before then much spade work had been done with a view to give early effect to the Committee's recommendations. Perhaps the most important item of work was the preparation of a separate Draft Code of Regulations for Industrial Schools. For a long time, it has been increasingly felt that the different rules and regulations and orders under which these schools work and are assisted by Government should be brought together in convenient form and fresh rules and regulations made where necessary, to regularize existing procedure and to provide for future development. Mr. Fyfe

took the matter up in May when most school managers were on the Hills and the schools closed, and the draft Code which he then compiled was after revision arising out of much discussion and correspondence with school managers submitted to Government later in the year. In pursuance of the recommendations contained in the Committee's report, Government called for definite proposals of various kinds. During the year under review, considerable progress was made with the working out of these proposals and definite schemes for giving effect to some of the more important of the proposals have been submitted to Government and others will be worked out in the light of the orders of Government on the Draft Code of Regulations.

LEATHER TRADES INSTITUTE, MADRAS.

125. *Staff*.—Mr. A. Guthrie, M.B.E., continued to hold the appointment of Principal throughout the year. Mr. P. K. Rajamanikam Nayudu, Vice-Principal, was on study leave from 15th May 1924 to 14th January 1925, and during his sojourn in Europe visited a number of tanneries in England and Germany and placed himself in touch with manufacturers of tanners' specialities. In G.O. No. 177, Development, dated 3rd February 1925, Government, in pursuance of the recommendations of the Leather Industry Committee, sanctioned the creation of a post of Leather Research Chemist on Rs. 300—20—500 and appointed M.R.Ry. K. Seshachallam Nayudu, M.A., M.Sc., A.I.C., permanently to it. They also sanctioned the creation of a post of Senior Assistant Chemist on Rs. 80—4—120 and the institution of a scholarship in the Leather Trades Institute to provide for the Junior Assistant Chemist, the appointment of which was also recommended by the Committee. The post of Senior Chemist was not filled up until after the close of the year under review.

126. *Buildings*.—The extensions to the Leather Trades Institute, involving the construction of a new building which will provide new class rooms and laboratories, in the latter of which, as stated in the report of the preceding year, facilities will be available for the conduct of research in connexion with tanning problems generally was practically completed during the year and it is hoped that it will be fully equipped before the opening of the next session.

127. *Number of students on the rolls*.—In last year's report, I had occasion to report a decrease in the number of students under training in the Institute and I regret that I am unable to record any improvement in this direction during the year under review. The number on the rolls during the year was ten, only two new students

having joined the Institute when the new session opened. As a result of a careful consideration of the position I concluded that though parents might be reluctant to place their sons in an industry which had only recently regained something of its former prosperity; a far more potent cause of reduction in the number of applications for admission had been the enhancement of the fees. Accordingly I recommended that the rates for fees prescribed for admission to the Institute should be reduced from Rs. 150 to Rs. 100 per annum for students from the Madras Presidency and Coorg, and from Rs. 300 to Rs. 150 per annum for students from other Provinces and Native States. These proposals were accepted by Government but the reduced rates were sanctioned too late to have any appreciable effect on admissions to the Institute during the year under review. I trust that now the fees have been reduced, the number of students on the rolls will gradually revert to its former level.

128. *Past Students*.—Of the twelve students who completed their course during the previous year, six are known to have been successful in obtaining positions in the leather trade two of whom are working in South India tanneries owned by their relatives. The remaining students have not so far as is known, secured suitable employment in the leather trade although one tanned a number of skins for a Bombay firm in the Institute and one worked for some time in a local tannery, but is now unemployed; one has left the trade and started a petrol supply depot while another of the student was subsequently employed as a foreman in the Institute.

129. *Examinations*.—Mr. Kidston of Messrs. Chambers & Co., Madras, and Mr. K. Seshachallam Nayudu, Special Research Officer, conducted the examination in Leather Manufacture and Leather Trades Chemistry respectively. All the students who presented themselves for examination passed successfully and the examiners appear to have been favourably impressed with the knowledge shown by the students. Mr. Kidston in his report stated that the papers were on the whole well answered and that a comparison of the results showed that the percentage of marks obtained were very close indeed, the average of 73 per cent being exceptionally good. Mr. Kidston further stated that he was particularly pleased with the answers submitted by some of the students to questions set with the object of determining the action to be taken in an emergency; as the answers went to show that the training given to the students had been of a very thorough character. Mr. Seshachallam reported that the students had done better in the practical than in the theoretical tests and that on the whole the results were satisfactory.

130. *Finance and accounts*.—A sum of Rs. 7,302-7-1 was realized from fees and sales of leather. The total expenditure during the year was Rs. 42,430-15-2. For the first time in the history

of the Institute the receipts from the sale of leather and other finished articles exceeded the expenditure on raw materials. Messrs. Fraser and Ross, as a result of their examination of the accounts and working of the Institute reported that they did not consider it necessary or desirable to maintain commercial accounts in the Institute but advised that, in addition to the ordinary Government accounts a journal and a ledger should be maintained and that a balance sheet should be drawn up at the end of each financial year. Effect has since been given to these recommendations.

131. *Research*.—The Leather Research Chemist, Mr. K. Seshachallam Nayudu, continued his researches on the study of the fermentation of infusion from Divi Divi. The results obtained so far are not without promise as the fermentation of the liquor has been brought under control. Subsequently, the Leather Research Chemist was engaged in testing the conclusions arrived at in the laboratory under practical working conditions in the tannery and at the end of the year the practical experiments and the necessary further laboratory checks or the practical results obtained were in progress. The results of the research work so far done on the subject have been published in the journal of the Society of Leather Trades Chemists in the form of three separate notes entitled "A note on South Indian Divi Divi", 'Fermentation of Divi Divi Liquors', and 'Fermentation of Tan Liquors'. The Leather Research Chemist was also engaged in studying the effect of different kinds of water on the quality and quantity of extractable matter from avaram bark as a preliminary to the conduct of a systematic research in regard to the action of various impurities in water on avaram tannage and with a view to stop or reduce the great wastage of tannin that takes place in the ordinary Madras tannages. In accordance with the recommendations of the Leather Industry Committee a comparative study of South Indian tanning materials has been initiated with the ultimate object of exploiting every promising kind of tanning material that is available and with the co-operation of the Forest Department of advising and encouraging the growth of any particular tan-stuff which is found by research and by practical application to be suitable for adoption. In the tannery of the Institute experiments in the manufacture of a fair quality sole leather by retanning Dhori hides were carried out and finally a suitable leather was evolved by a simple method which can be worked in any local tannery. An account of these experiments will shortly be published in the form of a bulletin. The discovery which was made in the laboratory two years ago that oil-tanned leather withstands the action of hard or alkaline water better than either chrome or bark-tanned leather was carried a step further by the manufacture of a dozen oil-tanned hides and issuing them for

practical tests as kavalai trunks. The reports on these leathers were somewhat conflicting as some lasted well and others only for a very short time. Further experiments on this subject were in progress at the end of the year. The experimental manufacture of chamois leather by a modification of the ordinary process, which is more suitable to Indian conditions, was also carried on and very encouraging results were achieved. It is hoped that when the experiment is carried a stage further, it will be possible to put the process to a commercial test.

132. *Leather Industry Committee*.—During the year the orders of Government were received on the report of the Committee appointed during the previous year to examine the steps which are desirable to further the development of the leather industry of this Presidency with special reference to the present constitution and aims of the Leather Trades Institute. The Committee submitted a comprehensive report and made a number of important recommendations which Government accepted almost in their entirety. The Committee were satisfied with the adequacy of the instruction now given in the Institute and considered that in view of the scope which exists for improving the status of the Madras tanning trade and the difficulty experienced in securing facilities for the training of Indians in tanneries abroad, it is of great importance that the present standard of instruction should be maintained. Government accepted this view and also agreed with the Committee that in view of the existence of a demand among tanners for an improvement in the quality of their labour supply that classes should be opened in the Institute for the practical training of tannery operatives and for the part-time training of working tanners and maistris of private tanneries on the lines advocated by the Committee. It is hoped that a start will be made with these classes during the next financial year. In the opinion of the Committee the cost of instruction in the Institute is not excessive and could not be reduced to any considerable extent without impairing the high standard of instruction at present given. One of the recommendations of the Committee was that arrangements should be made with the Inspector General of Prisons for a portion of the leather required for the manufacture of boots and sandals in the various jails to be supplied by the Institute and a commencement was made during the year by the dressing of a quantity of leather for use in the boot department of the Vellore Jail. Government agreed with the Committee that the disadvantages of working the tannery on a commercial scale and of attaching a leather manufacturing workshop to it would far outweigh the advantages, but that the existing tannery should be run on commercial lines in so far as this is consistent with the main object of the Institute which is to provide an all round training in

tannery practice. Effect has already been given to the latter recommendation. Government accepted the recommendations of the Committee in Chapter VI of their report that in view of the great importance and potentialities of the tanning industry in this Presidency, the Institute should hereafter include a properly equipped research laboratory and an adequate research staff to initiate systematic research and investigation on the lines indicated by the Committee into the various problems that await solution. The proposals of the Committee in regard to the research staff of the Institute which were subsequently accepted by Government have been referred to elsewhere in this report. The Government also accepted the recommendations of the Committee that a Board of Visitors to the Institute should be constituted. The Committee made a number of valuable recommendations in regard to the exploitations of tanning materials generally and in particular stressed the importance of increasing the production and cheapening the supply of avaram. The difficulties in the way of securing an abundant supply of avaram to tanners at cheap prices are, however, very great and now that the Institute has been provided with a research staff the possibilities of new tanstuffs and of substitutes for the hitherto indispensable avaram will be fully investigated. The Committee also considered the question of the production of finished as against half-tanned leathers as also that of the prospects of development of the Chrome leather industry in the Presidency and with their conclusions and recommendations, Government expressed their general agreement. Considerations of space preclude a reference to other important recommendations of the Committee and suffice it to say here that, as a result of the acceptance by Government of the greater part of the Committee's proposals, it is hoped that the scope and usefulness of the Institute will be greatly enlarged, and that in particular research and investigation into the many important tanning problems which await solution will receive a distinct impetus. An encouraging start has already been made with the organization and development of the research side of the Institute but I need hardly say that results cannot be shown, nor should be expected at once.

SCHOOL OF ARTS AND CRAFTS, MADRAS.

133. *Staff*.—Mr. W. S. Hadaway held the appointment of Superintendent throughout the year except for a period of four months, from 1st July 1924 to 31st October 1924 during which he was on leave and M.R.Ry. Rao Sahib N. R. Balakrishna Mudaliyar, Assistant Superintendent, was in charge of the school and M.R.Ry. T. G. Krishnaswami Pillai acted as Assistant Superintendent. I

regret to have to record the deaths during the year of Mr. C. F. Letoille, after a meritorious service in the school extending over a period of 25 years, and of M.R.Ry. C. Arumuga Naicker, Senior Assistants. The Assistant Superintendent M.R.Ry. N. R. Balakrishna Mudaliyar was granted the sanad of Rao Sahib on the occasion of the King-Emperor's Birthday.

134. *Strength and attendance*.—The number of pupils on the rolls on the 31st March 1925 was 443 of whom 20 were females. The average attendance during the year was 235 and the average number on the rolls was 428. The figures for the three previous years were:—

Year.					Average number on the rolls.	Average attendance.
1921-22	..	..	..	..	234	66
1922-23	..	..	..	..	259	191
1923-24	..	..	..	..	337	210

It will be observed that the school again increased considerably in numbers during the year but a less satisfactory feature was the decline in average attendance from 71 per cent in the previous year to 55 per cent during the period under review. The Superintendent attributes the falling off in the average attendance partly to the abnormal illness which was prevalent in the City, and partly to the very poor attendance at the part-time classes.

135. *Departments and scholarships*.—Appendix I shows the distribution of the students according to the different departments in which they worked and the community to which they belonged. The percentage of artisans at 55 per cent was the same as in the previous year. The work turned out in the various departments does not call for any special mention. Appendix II gives a list of students who left the school during the year and the appointments they have obtained.

136. *Financial statement*.—This is given in Appendix III. The expenditure for the year amounted to Rs. 65,277-11-5 as compared with Rs. 73,908-3-9 during the previous year. The decrease of over Rs. 8,000 is attributable to the reduction in the budget allotment and the consequent dismissal of a number of workmen. *Per contra*, sales increased by Rs. 822-7-6 exclusive of sales at the Wembley Exhibition which amounted to Rs. 2,143-8-0. The accounts of the School were, as usual, audited by the Accountant-General.

137. *Library and Museum*.—The number of new books added to the library during the year was 56. There were 42 articles added to the museum during the year.

138. *Examinations.*—Appendix IV exhibits the results of the various Government Technical Examinations. The figures for the last three years have been as follows :—

Year.	Number appeared.	Number passed.	Percentage.
1922-23 ..	152	68	69
1923-24 ..	196	133	68
1924-25 ..	104	72	70

It will be seen that the number of students who appeared for the Technical Examinations showed an appreciable decrease and this is probably attributable, at least partly, to the increase in the fees for the examinations. The percentage of passes showed a slight increase over the previous year.

139. *Part-time Drawing classes.*—The attendance at these classes continued to be disappointing and the average number on the rolls declined from 21 in 1923-24 to 18 during the year under review.

140. *Board of Visitors.*—The Board of Visitors appointed during the previous year continued to function satisfactorily. A visitors' book is maintained in the Superintendent's office and copies of such remarks as the visitors may enter therein are forwarded by the Superintendent to the Director of Industries who submits them to Government. The several visitors evinced a considerable interest in the working of the school and the remarks entered in the visitors' book have been of an appreciative character. Mrs. G. M. Fawcett resigned her appointment as Honorary Visitor on leaving for England in January 1925 and Mrs. V. A. Cornish was appointed in her stead.

141. *Exhibit at the British Empire Exhibition.*—As stated in last year's report the Superintendent was not provided with funds to organize an exhibit of the work of the school and an exhibit was only made possible by the public-spirited action of Sir William Beardsell and the Rajah of Kollengode in lending a number of suitable articles. The exhibit which included carved furniture, black and gold lacquer, silver, rugs, palampores and metal work appears to have been a very successful one. Mr. Hadaway, who visited the Madras Court on several occasions during his leave, informs me that the exhibit was greatly appreciated by artists and others and that the school exhibits were recognized to be of excellent design and execution and of considerable artistic value.

GENERAL.

142. The continuance of the financial stringency precluded the provision of funds necessary to permit of any large measure of development during the year and efforts had perforce to be directed

mainly to the consolidation and expansion, so far as the limited funds permitted, of the existing departmental activities. Nevertheless, as the report itself will show, a large amount of very useful work has been done by the department during the year. The financial position of the Presidency has since improved considerably and I hope that, as a result of increased funds becoming available, it will be possible in next year's report to record more rapid progress in some at least of the department's varied activities. A number of schemes have been drawn up, and will be submitted to Government from time to time, as and when financial conditions permit.

FINANCE.

143. The following statement shows the receipts and expenditure during the past two years. Details of the receipts and expenditure of the department for the year under review, excluding those of the Kerala Soap Institute, which has been brought under Chapter II of the Account Code and operates on a fixed working capital, are exhibited in Appendix VII.

Item.	1923-24.			1924-25.			Increase or decrease.		
	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.
Expenditure	9,74,138	6	10	11,16,364	10	4	+	1,42,226	3 6
Receipts	3,11,239	0	3	4,55,713	4	9	+	1,44,474	4 6
Net cost	6,62,899	6	7	6,60,651	5	7	—	2,248	1 0

It will be seen that the net cost of the department further declined by Rs. 2,248-1-0. This decrease is accounted for partly by the reduction in expenditure under 'School of Arts and Crafts' and 'Weaving Branch' and partly by an increase in receipts under 'Kerala Soap Institute, Calicut', and 'District Engineering Branch'. That a further small decline in the net cost of the department was registered during the year may be regarded as very satisfactory in view of the fact that there was an increased expenditure under some heads due to normal expansion of departmental activities.

WORK OF THE STAFF.

144. The members of the staff, both executive and clerical, continued to render good service during the year, and among the latter, M.R.Ry. S. R. Athmanatha Ayyar, who combines in himself the duties of Office Manager and Bureau Superintendent, is deserving of special mention. This is the third, and perhaps the last administration report for which I have been, or shall be responsible, and I desire to place on record my appreciation of the valuable work which has been rendered to the department and to the public by the Deputy Director, and by the very small group of specialists in their several spheres, during the period of nearly three years of my connection with the department.

APPENDIX I.

School of Arts and Crafts.

Classification of pupils in the several departments of the school according to the occupation of parents or guardians.

Departments.	Officials.	Inferior servants.	Traders.	Landholders.	Artizans.	Coolies.	Mendicants.	Others.	Total.
Woodwork	12	15	16	6	85	2	..	..	136
Carpet-weaving	..	..	1	..	2	..	..	..	3
Metal work	2	..	1	2	11	..	..	..	16
Jewellery	2	2	2	..	12	..	..	..	18
Modelling	..	1	1	..	2	1	..	..	6
Engraving	13	16	19	9	65	1	..	..	123
Lacquer work	19	9	13	8	46	..	..	..	95
Special painting	8	5	6	4	3	..	..	..	26
Total	56	49	59	29	226	4	..	..	423

APPENDIX II.

School of Arts and Crafts.

Students who left the School in 1924-25 and have secured employment.

Name.	Highest examinations passed.	Period spent in the school.	Present employment.	Salary.
1. Ramalingam Pillai ..	Nil.	V. M. 2 0	Carpenter, Madras Arsenal ..	Rs. A. P. 0 4 0
2. S. P. Kudresan ..	Freehand Outline Drawing—Intermediate ; Jewellery—Intermediate.	7 0	Started private work at home	per day. 15 0 0
3. N. Balanadan ..	Nil.	2 0	Line work process in a photo firm in Bombay.	per mensem. 50 0 0
4. K. Hyder Khan ..	Freehand Outline Drawing—Elementary.	2 0	Loco Department, Royapuram ..	per mensem. 15 0 0
5. V. Narayana Ayyar ..		1 6	Drawing Master, Muslim High School, Triplicane.	per mensem. 35 0 0
6. P. Rama Rao ..	Wood-carving—Intermediate ; Design—Elementary ; Freehand Outline Drawing—Intermediate ; Technical Teachers' Certificate in Freehand Outline Drawing—Intermediate.	6 7	Handicraft Instructor, Corporation Model School, Egmore.	per mensem. 35 0 0
7. P. Tholasinga Rao ..	Freehand Outline Drawing—Intermediate ; Design—Elementary ; Painting—Elementary ; Wood Engraving—Intermediate ; Copper Plate Engraving—Advanced.	5 0	Engraver, Perumal Chetti & Co. ..	per mensem. 40 0 0
8. Mir Bastaballi ..	Painting—Advanced ; Modelling—Intermediate ; Freehand Outline Drawing—Advanced ; Technical Teachers' Certificate in Cabinet making—Advanced ; Technical Teachers' Certificate in Design—Intermediate ; Cabinet making—Advanced ; Design—Intermediate.	5 3	Drawing Master, Oosmani High School, Gulburga, Deccan.	£0 0 0 per mensem.

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Students who left the School in 1924-25 and have secured employment—*cont.*

Name.	Highest examinations passed.	Period spent in the school.	Present employment.	Salary.
9. G. Sambantha Naicker ..	Freehand Outline Drawing—Intermediate; Painting—Intermediate; Modelling—Intermediate; Design—Intermediate; Technical Teachers' Certificate in Freehand Outline Drawing—Intermediate.	Y. M. ..	Pen and Ink draughtsman, Tata Institute, Bangalore.	Rs. A. P. 60 0 0 per mensem.
10. P. D. Phillip ..	Copper Plate Engraving—Advanced; Wood Engraving—Intermediate; Design—Intermediate; Freehand Outline Drawing—Intermediate; Painting—Elementary.	5 0	Engraver, Farry & Co., Lucknow ..	80 0 0 per mensem.
11. C. Rajagopal Chetti ..	Freehand Outline Drawing—Intermediate; Copper Plate Engraving—Intermediate; Painting—Lower; Geometrical Drawing—Elementary; Technical Teachers' Certificate in Freehand Outline Drawing—Intermediate.	4 6	Acting Junior Assistant Maistri, School of Arts and Crafts, Madras.	30 0 0 per mensem.
12. G. A. Dorairaj ..	Freehand Outline Drawing—Intermediate; Geometrical Drawing—Elementary; Design—Elementary; Engraving—Advanced.	..	Acting Junior Maistri, School of Arts and Crafts, Madras.	30 0 0 per mensem.
13. K. Ramalingam ..	Freehand Outline Drawing—Intermediate; Painting—Elementary.	3 0	Engraver, P. Orr & Sons, Madras ..	25 0 0 per mensem.
14. V. Madurai Asari ..	Nil.	3 0	Daily paid workman (Carpenter at Mahabalipuram).	0 8 0 per day.
15. V. Govinda Asari ..	Nil.	3 0	Do.	Do.
16. T. J. Devaratnam ..	Nil.	2 6	Apprentice Engine driver, Madras and Southern Mahratta Railway.	15 0 0 per mensem.
17. R. Jambulinga Madali ..	Nil.	1 6	Attender, High Court of Judicature, Madras.	15 0 0 per mensem.
18. C. Salagopa Achari ..	Freehand Outline Drawing—Advanced; Design—Intermediate.	4 0	Artist, Isabella Thoburn College, Lucknow.	100 0 0 per mensem.

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APPENDIX III.

School of Arts and Crafts, Madras.

Statement of receipts and charges for the year 1924-25.

Receipts.	Amount.			Charges.	Amount.		
	Rs.	A.	P.		Rs.	A.	P.
Fees—				Salaries—			
Cash ..	1,515	5	0	Superintendents (Non-voted) ..	..	..	12,406 0 0
Realization upon bills ..	2,821	6	0	Assistant Superintendent ..	..	..	3,125 0 0
" by book adjustment ..	50	2	0	Teachers and assistants ..	9,156 15 0	..	..
" at Wembley Exhibition ..	2,145	8	0	Maistris ..	9,156 15 0	..	..
Sundry debtors ..	138	6	0	Temporary establishment ..	339 0 0	..	..
				Clerks and servants ..	6,349 1 0	..	..
							25,001 15 0
Stock of manufactured articles on 31st March 1925 ..	15,907	13	6	Contingencies—			
Stock of unfinished articles on 31st March 1925 ..	1,988	5	0	Rates and taxes—Non-voted ..	1,362 5 0	..	..
Stock of materials on 31st March 1925 ..	4,953	3	1	Slipends—Voted ..	2,690 14 0	..	..
Stock of tools and plants on 31st March 1925 ..	6,582	12	8				
				Books and maps ..	351 0 2	..	..
Stock of manufactured articles on 31st March 1924 ..	29,130	2	3	Materials ..	4,951 8 2	..	..
Stock of unfinished articles on 31st March 1924 ..	14,659	13	6	Wages ..	7,287 15 1	..	..
Stock of materials on 31st March 1924 ..	1,772	3	0	Tools and plants ..	381 6 10	..	..
Stock of tools and plants on 31st March 1924 ..	5,606	6	4	Art collections ..	469 0 0	..	..
Increase of stock of manufactured articles, and unfinished articles during the current year ..	6,520	7	5	Telephone ..	208 2 0	..	..
				Packing and freight ..	41 3 0	..	..
				Cleaning charges ..	632 2 0	..	..
				Electric rent ..	72 0 0	..	..
				Miscellaneous ..	151 7 6	..	..
				Menials ..	299 8 0	..	..
				Photographs ..	110 0 0	..	..
				Office expenses ..	793 7 9	..	..
				Postage stamps ..	50 0 0	..	..
							15,798 12 6
							+ 4,892 12 11
Net cost ..	481	4	0				
Total ..	4,817	15	0				
	60,459	12	5				
	65,277	11	5				
							24,741 12 5
							65,277 11 5

* As per Accountant-General's March final accounts.

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APPENDIX V—cont. Statistics relating to Industrial Schools for 1924-25—cont.

District.	Name of the institution.	(20) Rattan work.	(21) Plumbering and minor sanitary science.	(22) Motor-car driving and repairs work.	(23) Mat and basket making.	(24) Chemistry of leather manufacture.	(25) Electric Engineering and wiring.	(26) Drawing, Metal work-ers, Wood workers and Brick-layers.	(27) Engraving.	(28) General Education Branch.	(29) Scientific instrument making.	(30) Goldsmith's work.	(31) Lacquer work.	(32) Special painting.	(33) Printing and allied trades.	(34) Boot and shoe-making.
	GOVERNMENT INSTITUTIONS— —cont.															
Madura	Government Industrial Institute, Madura.	..	..	10	..	..	..	..	..	..	..	..	..	..	..	..
Madras	Leather Trades Institute, Madras.	..	..	..	..	10	..	..	..	..	..	..	..	..	..	..
Do.	School of Arts and Crafts, Madras.	..	..	..	..	..	..	..	129	..	..	18	91	50	..	..
Do.	Government Trades School, Madras.	..	40	..	..	..	208	149	..	..	..	..	..	..	..	..
Do.	Government Textile Institute, Madras.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	40	10	..	10	208	149	129	..	..	18	91	50	..	..
	AIDED INSTITUTIONS—cont.															
Coimbatore	St. Joseph's Industrial School, Coimbatore.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Madras	C.N.T. Institute, Vepery, Madras.	..	..	11	..	..	4	..	..	..	..	..	..	..	..	..
Trichinopoly	Wesleyan Mission Industrial School, Karur.	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do.	St. Joseph's Industrial School, Trichinopoly.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Madras	Anjuman-i-Ahli-i-Islam, Madras.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

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APPENDIX V—cont. Statistics relating to Industrial Schools for 1924-25—cont.

District.	Name of the institution.	(3) Boys or girls.	(4) 1924.	(5) 1925.	(6) Drawing.	(7) Fitter's work.	(8) Blacksmith's work.	(9) Other branches.	(10) Civil Engineering.	(11) Carpentry and Cabinet making.	(12) Metal work.	(13) Cotton.	(14) Carpet.	(15) Lace making.	(16) Embroidery.	(17) Other branches.	(18) Agriculture.	(19) Oil-engine driving.
	AIDED INSTITUTIONS—cont.																	
North Arcot	A.A.M. Industrial School, Katpadi.	Boys.	84	104	..	..	7	..	..	89	..	..	..	..	..	..	..	..
South Arcot	St. Joseph's Industrial School, Tiruvannam.	Do.	62	69	..	..	2	..	..	67	..	..	..	..	..	..	..	..
Tanjore	St. Francis Xavier Industrial School, Tanjore.	Do.	67	59	..	..	..	..	..	22	..	37	..	..	..	..	..	..
Tinnevely	S.P.G. Art Industrial School, for Boys, Nazareth.	Do.	73	85	..	..	4	..	..	51	..	30	..	..	..	..	..	..
Vizagapatam	St. Aloysius' Industrial School, Vizagapatam.	Do.	18	20	..	20	..	..	..	..	..	..	..	..	..	..	..	..
Kurnool	Coles' Vocational Middle School, Kurnool.	Do.	34	42	..	..	..	..	..	8	..	42	..	..	..	..	..	..
Trichinopoly	All Saints Boys' Industrial School, Puttur.	Do.	32	42	..	..	5	..	..	..	..	..	..	..	..	..	..	..
Tanjore	St. Mary's Industrial School, Kumbakonam.	Do.	66	55	..	..	..	..	..	50	..	..	..	..	..	..	..	..
North Arcot	Anjuman-i-Isha-a-Thal Hasanath, Vellore.	Do.	45	49	..	..	..	..	..	49	..	..	..	..	..	..	..	..
Chingleput	U.F.C.M. Agricultural School, Melosapuram.	Do.	46	49	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ganjam	Raja's Industrial School, Parlakimedi.	Do.	36	40	..	..	..	..	..	18	..	22	..	..	..	..	..	..
Chingleput	A.A.M. Industrial School, Saidapet.	Do.	26	21	..	..	..	..	..	14	..	..	..	..	..	..	..	..

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APPENDIX V—cont.
Statistics relating to Industrial Schools for 1924-25—cont.

District.	Name of the institution.	(20) Rattan work.	(21) Plumbing and Minor Sanitary Science.	(22) Motor-car driving and repairs work.	(23) Mat and basket making.	(24) Chemistry of leather manufacture.	(25) Electric engineering and wiring.	(26) Drawing, metal workers, wood workers and bricklayers.	(27) Engraving.	(28) General Education branch.	(29) Potentiline instrument making.	(30) Goldsmith's work.	(31) Lacquer work.	(32) Special painting.	(33) Printing and allied trades.	(34) Boot and shoe-making.
AIDED INSTITUTIONS—cont.																
North Arcot ..	A.A.M. Industrial School, Kapadi.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
South Arcot ..	St. Joseph's Industrial School, Tindivanam.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tanjore ..	St. Francis Xavier Industrial School, Tanjore.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tinnevely ..	S.P.G. Art Industrial School for Boys, Nazareth.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Vizagapatam ..	St. Aloysius' Industrial School, Vizagapatam.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kurnool ..	Coles' Vocational Middle School, Kurnool.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Trichinopoly ..	All Saints' Boys' Industrial School, Pattur.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tanjore ..	St. Mary's Industrial School, Kumalakom.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
North Arcot ..	Anjuman-i-Ishatul Hasnath, Vellore.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chingleput ..	U.F.C.M. Agricultural School, Melkospuram.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ganjam ..	Raja's Industrial School, Parlakimedi.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chingleput ..	A.A.M. Industrial School, Saidapet.	..	7	..	..	..	..	..	..	..	..	..	..	..	..	..

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APPENDIX V—cont.
Statistics relating to Industrial Schools for 1924-25—cont.

District.	Name of the institution.	Boys or girls.	Number on roll on 31st March.		(6) Drawing.	Mechanical Engineering.			(10) Civil Engineering.	(11) Carpentry and cabinet making.	(12) Metal work.	Weaving.		Needle crafts.			(18) Agriculture.	(19) Oil-engine driving.
			1924.	1925.		(7) Fitter's work.	(8) Blacksmith's work.	(9) Other branches.				(13) Cotton.	(14) Carpet.	(15) Lace making.	(16) Embroidery.	(17) Other branches.		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
North Arcot ..	AIDED INSTITUTIONS—cont. Anjuman-i-Mofidul-Islam Muhammadan Orphanage, Melvisharam.	Boys.	24	24	..	..	..	..	..	24	..	..	..	..	..	..	..	..
South Arcot ..	Danish Mission Industrial School, Panruti.	Do.	79	82	..	..	..	..	..	16	..	36	..	..	..	..	..	..
Tinnevelly ..	The Weaving Institute, Alwarthirunagari.	Do.	18	15	..	..	..	..	..	..	..	15	..	..	..	..	..	..
Madras ..	The Orr Assisted Industries School, Madras.	Do.	29	24	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. ..	The Addison Assisted Indus- tries School, Madras.	Do.	20	20	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Guntur ..	The Municipal Industrial School, Guntur.	Bo.	15	15	..	..	..	..	..	15	..	..	..	..	..	..	..	..
Tinnevelly ..	St. Mary's Industrial School, Vedakangulam.	Do.	15	18	..	..	..	..	..	..	..	18	..	..	..	..	..	..
South Kanara.	Commonwealth Trust Engi- neering Works Classes, Mangalore.	Do.	15	12	..	..	..	12	..	..	..	..	..	..	..	..	..	..
Madura ..	The Paumalai Trades School, Paumalai.	Do.	26	43	..	3	..	..	..	28	..	..	..	..	..	..	..	4
Tinnevelly ..	St. Joseph's Industrial School, Adikalapuram.	Do.	37	34	..	..	..	..	..	19	..	15	..	..	..	..	..	..
Bellary ..	Board Panchana School, Yennanganur.	Do.	15	14	..	..	..	..	..	..	..	..	..	..	..	..	..	..

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APPENDIX V—cont.
Statistics relating to Industrial Schools for 1924-25—cont.

District.	Name of the institution.	(20) Rattan work.	(21) Plumbing and minor sanitary science.	(22) Motor-car driving and repairs work.	(23) Mat-making and basket making.	(24) Chemistry of leather manufacture.	(25) Electric engineering and wiring.	(26) Drawing metal workers, wood workers and brick layers.	(27) Engraving.	(28) General education branch.	(29) Scientific instrument making.	(30) Goldsmith's work.	(31) Lacquer work.	(32) Special painting.	(33) Printing and allied trades.	(34) Boot and shoe-making.
AIDED INSTITUTIONS—cont.																
North Arcot ..	Anjuman-i-Mofidul-Islam Muhammadan Orphanage, Melvisharam.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
South Arcot ..	Danish Mission Industrial School, Panruti.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tinnevelly ..	The Weaving Institute, Alwathirunagari.	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Madras ..	The Orr Assisted Industries School, Madras.	1	..	..	..	..	..	..	..	..	24	..	..	..	20	..
Do. ..	The Addison Assisted Industries School, Madras.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Guntur ..	Municipal Industrial School, Guntur.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tinnevelly ..	St. Mary's Industrial School, Vedakangulam.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
South Kanara.	Commonwealth Trust Engineering Works Classes, Mangalore.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Madura ..	The Pasumalai Trades School, Pasumalai.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tinnevelly ..	St. Joseph's Industrial School, Adakalapuram.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Bellary ..	Board Lanchama School, Yenniganur.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	14

APPENDIX V—cont.
relating to Industrial Schools for 1924-25—cont.

District.	Name of the institution.	Boys or girls.	Number on rolls on 31st March		(9) Drawing.	Mechanical engineering.		(10) Civil engineering.	(11) Carpentry and cabinet making.	(12) Metal work.	Weaving.		Needle crafts.		(17) Other branches.	(18) Agriculture.	(19) Oil-engine driving.
			1924	1925.		Fitter's work.	Blacksmith's work.				Cotton.	Carpet.	Lace making.	Embroidery.			
Godavari ..	C.B.M. Industrial School, Ocaunda.	Boys.	..	15	..	..	..	..	15	..	..	..	..	..	..	..	..
Madras ..	Sri Ram Motor School, Madras.	Do.	26	54	..	..	4	..	..	..	..	..	30	39	..	..	..
Tinnevelly ..	C.M.S. Industrial School for Blind, Palamcottah.	Boys and girls.	62	63	..	..	..	..	..	..	41	..	..	..	..	..	..
	Total ..	..	1488	1,580	..	100	21	99	738	3	333	24	..	..	..	49	11
Chingleput ..	U.F.C.M. Lace School, Chingleput.	Girls.	58	58	..	..	..	..	..	..	..	..	58	..	..	..	..
Madras ..	C.B.M. Girls' Industrial School, Kilpauk.	Do.	65	69	..	..	..	..	..	..	..	..	30	..	..	..	..
South Arcot ..	D.M. Girls' Industrial School, Keelar.	Do.	38	45	..	..	..	..	..	..	..	..	28	17	..	..	..
Trichinopoly ..	Wesleyan Mission Lace School, Karur.	Do.	22	18	..	..	..	..	..	..	..	..	18	..	..	..	..
Madura ..	St. Joseph's Convent Industrial School, Madura.	Do.	91	94	..	..	..	..	..	..	..	..	..	..	..	..	..
Tinnevelly ..	S.P.G. Lace School, Edavangudi.	Do.	23	29	..	..	..	..	..	..	..	..	29	..	..	..	..
Do. ..	S.P.G. Lace School, Kudangulam.	Do.	27	24	..	..	..	..	..	..	..	..	24	..	..	..	..
Bellary ..	St. Joseph Girls' Industrial School, Bellary.	Do.	73	54	..	..	..	..	..	..	..	..	15	..	39	..	..
Tinnevelly ..	R.C. Lace School, Vedakangulam.	Do.	77	83	..	..	..	..	..	..	..	..	83	..	..	..	..

APPENDIX V—cont.

Statistics relating to Industrial Schools for 1924-25—cont.

District.	Name of the institution.	(20) Batten work.	(21) Plumber and minor sanitary science.	(22) Motor-car driving and repairs work.	(23) Mat and basket making.	(24) Chemistry of leather manufacture.	(25) Electric engineering and wiring.	(26) Drawing, metal workers, wood workers, and bricklayers.	(27) Engraving.	(28) General education branch.	(29) Scientific instrument making.	(30) Goldsmith's work.	(31) Lacquer work.	(32) Special painting.	(33) Printing and allied trades.	(34) Boot and shoe-making.
	ARDED INSTITUTIONS—cont.															
Godavari	G.B.M. Industrial School, Coenada.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Madras	Sri Ram Motor School, Madras.	..	..	54	..	..	..	..	..	..	..	..	..	..	..	..
Tinnevely	C.M.S. Industrial School for Blind, Palamcottah.	22	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	32	..	80	..	..	4	..	..	..	24	..	..	..	28	14
Chingleput	U.F.C.M. Lace School, Chingleput.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Madras	C.S.M. Girls' Industrial School, Kilpauk.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
South Arcot	D.M. Girls' Industrial School, Keelar.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Trichinopoly	Wesleyan Mission Lace School, Karur.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Madras	St. Joseph's Convent Industrial School, Madras.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tinnevely	S.P.G. Lace School, Eda- yangudi.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do.	S.P.G. Lace School, Kuda- ngulam.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Bellary	St. Joseph Girls' Industrial School, Bellary.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tinnevely	R.C. Lace School, Vedakan- gulum.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

APPENDIX V—cont. Statistics relating to Industrial Schools for 1924-25—cont.

District.	Name of the institution.	(3) Boys or girls.	(4) 1924.	(5) 1925.	(6) Drawing.	(7) Fitter's work.	(8) Blacksmith's work.	(9) Other branches.	(10) Civil engineering.	(11) Carpentry and cabinet making.	(12) Metal work.	(13) Cotton.	(14) Carpet.	(15) Lace making.	(16) Embroidery.	(17) Other branches.	(18) Agriculture.	(19) Oil-engine driving.
	ARDED INSTITUTIONS—cont.																	
Tinnevely	Hindu Girls' Industrial School, Kudangulam.	Girls.	21	23	..	..	..	..	..	..	..	..	..	23	..	..	..	..
Anjengo	The Sacred Heart Convent Industrial Mission School, Anjengo.	Do.	19	24	..	..	..	..	..	..	..	..	..	24	..	..	..	..
Nellore	O.E.L.M. Girls' Industrial School, Gudur.	Do.	29	34	..	..	..	..	..	..	..	..	..	34	..	..	..	..
Chingleput	Wesleyan Mission Industrial School, Ikkadu.	Do.	73	71	..	..	..	..	..	..	..	..	..	32	37	..	..	..
Malabar	Commonwealth Embroidery School, Calicut.	Do.	..	63	..	..	..	..	..	..	..	..	..	..	63	..	..	..
Trichinopoly	Holy Cross Convent Industrial School, Trichinopoly.	Do.	..	61	..	..	..	..	..	..	..	..	..	..	61	..	..	..
Tanjore	C.S.M. Women's Industrial School, Mayavaram.	Do.	..	74	..	..	..	..	..	..	..	..	..	..	18	..	..	..
Chittoor	A.A.M. Women's Industrial School, Palmar.	Do.	38	42	..	..	..	..	..	..	..	..	..	20	22	..	..	..
Ganthur	A.B.M. Girls' Industrial School, Ongole.	Do.	14	18	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Coimbatore	L.M. Girls' Industrial School, Erode.	Do.	47	42	..	..	..	..	..	..	..	..	..	18	..	..	..	..
Madras	The Women's Home of Service, Mylapore.	Do.	..	78	..	..	..	..	..	..	..	..	..	40	38	..	..	..
	Total ..	..	705	1,004	..	..	..	..	..	..	86	35	..	476	363	65	..	..
	Grand Total ..	..	3,042	3,687	..	100	21	99	133	913	86	390	21	476	363	65	49	11

APPENDIX V—cont.

Statistics relating to Industrial Schools for 1924-25—cont.

District.	Name of the institution.	(20) Italian work.	(21) Plumbing and minor sanitary science.	(22) Motor-car driving and repairs work.	(23) Mat and basket-making.	(24) Chemistry of leather manufacture.	(25) Electric Engineering and wiring.	(26) Drawing — metal workers, wood workers and brick layers.	(27) Engraving.	(28) General education branch.	(29) Scientific instrument making.	(30) Goldsmith's work.	(31) Lacquer work.	(32) Special painting.	(33) Printing and allied trades.	(34) Boot and shoe-making.
	Aided Institutions—cont.															
Tinnevely ..	Hindu Girls' Industrial School, Kulaingulam.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Arjengo ..	The Sacred Heart Convent Industrial School, Anjengo.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Nelore ..	O.E.L.M. Girls' Industrial School, Gudur.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chingleput ..	Wesleyan Mission Industrial School, Ikkadu.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Malabar ..	Commonwealth Embroidery School, Calicut.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Trichinopoly ..	Holy Cross Convent Industrial School, Trichinopoly.*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tanjore ..	C.S.M. Women's Industrial School, Mayavaram.*	..	..	..	25	..	..	..	..	..	..	..	..	..	..	..
Chittoor ..	A.A.M. Women's Industrial Home, Palmaner.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Guntur ..	A.B.M. Girls' Industrial School, Ongole.	..	..	..	42	..	..	..	..	..	..	..	..	..	..	..
Coimbatore ..	L.M. Girls' Industrial School, Erode.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Madras ..	The Women's Home of Service, Mylapore.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	32	40	90	67	10	212	149	129	..	24	18	91	50	28	14
	Grand Total ..	32	40	90	67	10	212	149	129	..	24	18	91	50	28	14

* Recognized 1924-25.

APPENDIX VI.

Statistics relating to Industrial Schools for 1924-25.

District and name of the institution.	Boys or girls.	Number on rolls on 31st March 1925.	Receipts.					Public funds.			Management's contribution.		Total receipts (equal expenditure).	
			Miscellaneous receipts including proceeds of manufactured articles.	Fees.	Teaching and special grants.	Buildings and equipment grants.		Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
GOVERNMENT INSTITUTIONS.														
Madura—Government Industrial Institute, Madura.	Boys.	96	..	..	..	..	..	72,844 12 4	..	..	..	..	72,844 12 4	..
Madras—Leather Trades Institute, Madras.	Do.	10	..	..	..	..	..	42,381 6 2	..	..	..	..	42,381 6 2	..
School of Arts and Crafts, Madras.	Boys and girls.	443	..	..	..	..	..	60,384 14 6	..	..	..	..	60,384 14 6	..
Government Trades School, Madras.	Boys.	530	..	..	..	..	..	44,621 4 8	..	..	..	..	44,621 4 8	..
Government Textile Institute, Madras.	Boys and girls.	24	..	..	..	..	..	28,580 7 3	..	..	..	..	28,580 7 3	..
Total ..	..	1,103	..	..	..	..	..	2,48,812 12 11	..	..	..	..	2,48,812 12 11	..
AIDED INSTITUTIONS.														
Coimbatore—St. Joseph's Industrial School, Coimbatore.	Boys.	107	66,990 0 1	124 0 0	2,500 0 0	805 0 0	..	..	..	2,195 0 0	..	..	72,614 0 1	..
Madras—C.N.T. Institute, Vepery Madras.	Do.	239	14,227 6 3	8,961 4 4	9,000 0 0	1,000 0 0	..	..	..	10,985 10 0	..	..	44,174 4 7	..

APPENDIX VI—cont. Statistics relating to Industrial Schools for 1924-25—cont.

District and name of the institution.	Boys or girls.	Number on rolls on 31st March 1925.	Receipts.				Public funds.	Management's contribution.	Total receipts (equal expenditure).
			Miscellaneous receipts including sale-proceeds of manufactured articles.	Fees.	Teaching and special grants.	Buildings and equipment grants.			
			RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
AIDED INSTITUTIONS—cont.									
Trichinopoly— Wesleyan Mission Industrial School, Karur.	Boys.	60	32,229 15 4	..	3,468 0 0	1,000 0 0	..	6,860 0 3	43,557 15 7
St. Joseph's Industrial School, Trichinopoly.	Do.	28	29,876 11 5	..	1,700 0 0	1,000 0 0	..	9,278 3 9	41,854 15 2
Madras— Anjuman-i-Ahla-i-Islam, Madras.	Do.	78	4,445 5 0	..	5,000 0 0	225 0 0	..	11,000 4 8	20,670 9 8
North Arcot— A.A.M. Industrial School, Katpadi.	Do.	104	9,109 8 0	..	3,000 0 0	875 0 0	..	6,647 12 0	19,632 4 0
South Arcot— St. Joseph's Industrial School, Tindivanam.	Do.	69	9,342 11 5	..	5,200 0 0	674 0 0	..	7,380 9 8	22,597 5 1
Tanjore— St. Francis Xavier's Industrial School, Tanjore.	Do.	59	15,968 8 10	..	2,000 0 0	37 0 0	..	..	18,005 8 10
G. Coimbatore— G. Art Industrial School for Boys, Naza.	Do.	85	16,116 8 1	..	3,000 0 0	900 0 0	..	9,002 12 2	29,019 4 3
Madras— Industrial School, Taramani.	Do.	20	68,685 13 0	..	3,000 0 0	..	..	..	71,685 13 0
Madras— Industrial Middle School.	Do.	42	9,455 11 10	198 0 0	2,500 0 0	800 0 0	..	23,559 15 1	36,493 10 11

Industrial Do.	42	2,594 7 3	680 0 0	1,250 0 0	..	..	1,048 15 0	5,573 6 3
Industrial Do.	55	19,637 5 0	..	2,150 0 0	870 0 0	..	5,804 11 9	28,462 0 9
Industrial Do.	49	24,955 5 0	..	1,100 0 0	380 0 0	..	910 4 9	27,375 9 9
Industrial Do.	49	3,029 9 10	..	800 0 0	120 0 0	..	2,204 6 8	6,154 0 6
Industrial Do.	40	592 6 4	..	600 0 0	..	..	6,000 0 0	7,192 6 4
Industrial Do.	21	1,928 4 0	254 14 0	500 0 0	250 0 0	..	1,926 1 2	4,859 3 2
Industrial Do.	24	439 8 0	..	1,100 0 0	175 0 0	..	3,749 7 3	5,463 15 3
Industrial Do.	82	18,360 13 9	..	3,000 0 0	4,600 0 0	..	23,641 8 4	49,602 6 1
Industrial Do.	15	4,703 9 0	..	600 0 0	..	..	384 10 1	5,688 3 10
Industrial Do.	24	..	..	4,393 0 0	..	..	4,393 12 6	8,786 12 6
Industrial Do.	20	..	..	2,114 0 0	..	..	2,113 13 0	4,227 13 0
Industrial Do.	15	..	..	..	..	..	2,488 9 2	2,488 9 2
Industrial Do.	12	..	..	400 0 0	..	..	351 8 9	754 8 9

APPENDIX VI—cont.
Statistics relating to Industrial Schools for 1924-25—cont.

District and name of the institution.	Boys or girls.	Number on rolls on 31st March 1925.	Receipts.					Public funds.	Management's contribution.	Total receipts (equal expenditure).	
			Miscellaneous receipts including sale-proceeds of manufactured articles.	Fees.	Teaching and special grants.	Buildings and equipment grants.					
AIDED INSTITUTIONS—cont.											
Tinnevely— St. Mary's Industrial School, Vedatangulam.	Boys.	18	Rs. A. P. 3,010 0 0	Rs. A. P. ..	Rs. A. P. 400 0 0	Rs. A. P. 59 0 0	Rs. A. P. ..	Rs. A. P. 745 0 0	Rs. A. P. 4,214 0 0	Rs. A. P. 4,979 6 9	
Madura— Pasumalai Trades School, Pasumalai.	Do.	43	7,200 0 0	..	800 0 0	8,352 0 0	..	24,617 6 9	40,979 6 9		
Tinnevely— St. Joseph's Industrial School, Adaikalapuram.	Do.	34	1,942 8 0	..	600 0 0	225 0 0	..	1,087 11 6	3,855 3 6		
Bellary— Board Panehama School, Yemmiganur.	Do.	14	74 0 0	..	300 0 0	63 8 0	..	875 12 0	1,313 4 0		
Godavari— C.B.M. Industrial School, Cocanada.	Do.	15	..	..	600 0 0	..	..	4,200 0 0	4,800 0 0		
Madras— Sri Ram Motor School, Madras.	Do.	54	10,200 0 0	7,300 0 0	..	..	..	..	17,500 0 0		
Madras— Industrial School and Blind, Palam-velly.	Boys and girls.	63	7,717 14 0	..	1,500 0 0	..	..	402 10 0	9,620 8 0		
Total ..	..	1,580	3,82,833 14 2	17,518 2 4	62,575 0 0	22,420 8 0	..	1,73,869 8 3	6,59,217 0 9		

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