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Admin. report

Dept. of Industries &
Commerce, Madras

1936



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No. 1253-A/36.

OFFICE OF THE DIRECTOR OF INDUSTRIES,
MADRAS, dated the 28th July 1936.

From

L. B. GREEN, Esq., M.B.E.,

Acting Director of Industries,

Madras,

To

THE SECRETARY TO GOVERNMENT,

DEVELOPMENT DEPARTMENT,

Madras.

SIR,

I have the honour to submit the Administration Report of the
Department of Industries for the year ended 31st March 1936.

I have the honour to be,

Sir,

Your most obedient servant,

L. B. GREEN,

Director of Industries.



CONTENTS

	PAGES	PARAS.
1 Direction	1	1
2 Tours	1	2
3 Exhibitions	1-2	3
4 Committees	2	4
5 Conferences	2-3	5
6 Statutory Board of Industries	3-7	6-11
7 General assistance to trade and industry	7-15	12-20
8 Cottage industries	15-18	21-25
9 General review of the commercial and industrial conditions of the Presidency	18-40	26-67
10 Kerala Soap Institute, Calicut	40-45	68-75
11 Textile section	45-51	76-85
12 Sericulture	51-56	86-98
13 Engineering section	56-63	99-115
14 Industrial education	63-70	116-131
15 Leather Trades Institute, Madras	71-73	132-137
16 School of Arts and Crafts, Madras	74-75	138-145
17 Programme of work for 1936-37	76-77	146
18 Receipts and expenditure	77-78	147
19 Appendix I—Statement showing the receipts and charges of the Department of Industries for the year 1935-36	79	
20 & 21 Appendices II and III—Statistics relating to Government and recognized Industrial Schools for 1935-36	80-91	
22 Appendix IV—Statistics relating to recognized Industrial Schools for 1935-36	92-95	



ADMINISTRATION REPORT OF THE DEPARTMENT OF
INDUSTRIES, MADRAS, FOR THE YEAR ENDED
31st MARCH 1936.

Direction.—Mr. V. Ramakrishna, I.C.S., was in charge of the department until 2nd June 1935 when I relieved him, and continued as Director for the remainder of the year. I held the appointment of Deputy Director of Industries until the date mentioned when I was succeeded by Mr. W. Fyfe.

2. *Tours.*—Mr. Ramakrishna was on tour for 24 days during the year. I was on tour for 49 days and visited Simla in July, and Delhi in October 1935, in connexion with various conferences which will be referred to in a subsequent paragraph.

3. *Exhibitions.*—In accordance with the established practice, the department participated during the year in a number of agricultural and industrial exhibitions held in various parts of the Presidency, e.g., the Sri Rama Navami Exhibition, Rajahmundry, the Madras Provincial Co-operative Conference and Exhibition, Madras, the All-India Swadeshi Exhibition, Calicut, the Presidency College Exhibition, the Agricultural and Industrial Exhibition and Cattle Show, Nellore, the All-India Viswakarma Arts and Crafts Exhibition, Madras, and the Park Fair at Madras. At most of these exhibitions, a representative range of soaps manufactured at the Kerala Soap Institute, Calicut, was displayed; and wherever possible, the working of pumping and boring machinery, of improved textile appliances, and of silk-worm rearing and reeling appliances, was demonstrated for the benefit of the general public. In certain exhibitions, the improved domestic hearth, and articles turned out at the Government School of Arts and Crafts and the several industrial schools were also displayed. A special feature of the departmental display at the Madras Park Fair, was a demonstration of the working of the cane-splitting machine which had been imported by the department from Germany. In Madras, the cane is split or rounded by hand with the result that lengths of cane, whether in round form or flat, are very irregular and it is not possible with such material to obtain that smooth and regular finish which is required and is so noticeable in the imported article. It was in order to obviate these defects, and to demonstrate that rattan cane of the required smoothness and finish can be made if it is prepared by machinery that this demonstration, the first of its kind, was staged. Actual demonstrations of this description at fairs and exhibitions serve a distinctly useful purpose and afford

a welcome relief from the ordinary stereo-typed exhibit. If funds could be provided for the employment of the necessary demonstrators, the working of an improved potters' wheel, crayon making, and button making, amongst other things, could be demonstrated in this way on suitable occasions. Exhibitions and fairs held in other parts of India, such as the Mysore Dasara Exhibition, as well as in countries overseas, e.g., the British Industries Fair, the Imperial Fruit Show and Canners Exhibition at Liverpool, and the Poznan International Industries Fair, Poland, were brought to the notice of firms and individuals in the Presidency.

4. *Committees.*—I continued to serve on a number of committees, including the Local Advisory Committee of the South Indian Railway, Local Advisory Committee of the Madras and Southern Mahratta Railway, Provincial Research Committee, Provincial Cotton Committee, Provincial Marketing Board, Executive Committee of the Victory Memorial School for the Blind, Poonamalle, Council of the Victoria Technical Institute and Senate of the Andhra University. I served also as a member of the Board of Directors and of the Executive Committee of the Madras Handloom Weavers' Provincial Co-operative Society, Limited, during the year. In G.O. No. 1527 P., Development, dated the 22nd November 1935, Government constituted a Sub-Committee of the Provincial Economic Council for Agricultural Development. At the first meeting of the sub-committee on the 16th December 1935, four separate sub-committees were formed out of this sub-committee, namely (i) Agriculture, (ii) Irrigation, (iii) Sugar and Miscellaneous, and (iv) Agricultural Credit. I was appointed a member of sub-committees No. II and No. III, of the latter of which I was Convener. Sub-committee No. III was set up to consider the following subjects:—(i) Fruit preservation and canning, (ii) Open pan system of sugar manufacture, (iii) Dairy industry and (iv) Extension of the cultivation of sugarcane in the Tanjore district. The sub-committee considered also the question of the preparation and supply of activated charcoal, as well as that of the utilization of molasses. The sub-committee submitted its report to Government shortly after the close of the year. A large number of notes on various industrial subjects were prepared in connexion with the preliminary meeting of the Provincial Economic Advisory Council.

5. *Conferences.*—A conference of Ministers in charge of Industries and Directors of Industries, which I attended, was held at Simla, on the 28th and 29th of October 1935, at which the following subjects, amongst others, were discussed:—(i) progress of the schemes for the development of the handloom weaving industry and the question of allotments for 1936–37, (ii) grants for an All-India exhibition and All-India competition pertaining to the handloom industry, (iii) abolition of distinction in respect of fees charged by educational institutions under the Departments of Industries from students belonging to the province and those

coming from outside, and (iv) regulation of labour conditions (with particular reference to child labour) in unregulated factories and workshops. I attended the first meeting of the Advisory Council of Industrial Intelligence and Research, which was held at Simla, on the 8th and 9th July 1935, when a number of important subjects were discussed, including amongst others, (i) the consideration of methods of co-operation, in matters of industrial research, among the laboratories of the Central, Provincial and State Governments, (ii) the consideration of what items of research should be undertaken by the Research Branch of the Government Test House and (iii) the practicability of undertaking research on glass manufacture. I attended also the meeting of the Imperial Sericultural Committee, which was held at Delhi on the 30th of October 1935, when the progress of the schemes for the development of the sericulture industry was reviewed, and the question of allotments for 1936–37 considered.

6. *Statutory Board of Industries.*—The composition of the Board of Industries was, as noted below, at the beginning of the year 1935–36:—

- | | |
|--|--|
| (i) The Director of Industries, Madras | } Ex officio. |
| (ii) The Secretary to Government, Finance Department. | |
| (iii) D. M. Reid, Esq., elected by the Madras Chamber of Commerce. | |
| (iv) M.R.Ry. Chandulal M. Kothari Avargal, B.A., LL.B., elected by the Southern India Chamber of Commerce. | |
| (v) D. Q. Davidson, Esq., elected by the Madras Trades Association. | |
| (vi) M.R.Ry. Diwan Bahadur A. Appadurai Pillai Avargal, M.A., I.S.O., M.L.C. | } Elected by the Madras Legislative Council. |
| (vii) M.R.Ry. V. T. Arasu Avargal, M.L.C. | |
| (viii) Mohammad Ismail Sahib Bahadur | } Nominated by Government under section 3(2) of the Act. |
| (ix) M.R.Ry. A. Ranganatha Mudaliyar Avargal, M.L.C. | |
| (x) M.R.Ry. Chelikani Appa Rao Garu | |
| (xi) M.R.Ry. Rao Bahadur C. V. S. Narasimharaju Garu, B.A., B.L. | |
| (xii) The Registrar of Co-operative Societies, Madras. | |

On account of his proceeding on leave out of India, Mr. D. M. Reid, resigned his membership on the Board, and in his stead Mr. C. Elphinston was elected, shortly after the close of the year by the Madras Chamber of Commerce. M.R.Ry. A. Ranganatha Mudaliyar vacated his seat on the Board by efflux of time on 21st March 1936, but was reappointed as a member for a further term.

7. Two meetings of the Board of Industries were held during the year, namely, on the 16th September 1935, and 30th March

1936, at which the undernoted six applications for loans, and the question of the provision of financial assistance to industries were considered :—

- (i) Application from Muthuvalli Mahabub Sahib, Hospet, for a loan of Rs. 4,000 under section 6 (a) of the State Aid to Industries Act, for the purpose of installing a new Hornsby or Blackstone oil engine.
- (ii) Application from Messrs. T. Abdul Razaak and Sons, Proprietors, The Anjikandi Rice and Oil Mills, Cannanore, for a loan of Rs. 12,000 for the purpose of discharging a prior mortgage.
- (iii) Application from Mr. Kalathil Kunhonakkan, Proprietor, the Victoria Weaving Establishment, Alavil, Cannanore, for a loan of Rs. 10,000 for developing his weaving factory.
- (iv) Application from the National Crucibles Company, Limited, Rajahmundry, for a loan of Rs. 15,000, for the purpose of developing their crucible manufacturing industry.
- (v) Application from the Sri Ramakrishna Sugar Mills, Kirlampudi, East Godavari for a loan of Rs. 50,000, for the development of the sugar factory.
- (vi) Application from Mr. Rebala Hanumantha Rao, K. V., Agraharam, Nellore, for a loan of Rs. 500, for the purpose of developing the manufacture of dry unit cells and batteries.
- (vii) The provision of financial assistance to industries.

8. Of the six applications above referred to, numbers (i) to (iii) were rejected unanimously by the Board as they did not satisfy the conditions of section 5 (1) of the Act. Application (v) was recommended by a majority of the Board and sanctioned by Government, the loan being disbursed during the year. (vi) which was also recommended unanimously by the Board has been sanctioned by Government since the close of the year. As regards (iv), the Board recommended unanimously a smaller loan of Rs. 5,000 subject to the conditions, (i) that the Managing Director offered his house as collateral security, and (ii) that manufacturing operations, on the basis of an output of 2½ tons of crucibles per month, were commenced within six months of the disbursement of the loan. The Managing Director was not, however, willing to accept the first of the conditions imposed by the Board and the question of the grant of a loan was under the consideration of Government at the close of the year.

9. The Act further to amend the Madras State Aid to Industries Act, 1922 (Act No. X of 1935), by the addition of a clause (g) to section 6 of the State Aid to Industries Act, providing for

the supply, at concessional rates, of electric energy from a source belonging to the Local Government, was assented to by His Excellency the Governor-General on the 30th April 1935.

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

- (i) *The Kallakurichi Co-operative Agricultural and Industrial Society, Limited.*—According to the audit report, the society sustained a net loss of Rs. 2,546-5-0 during the year ended 30th June 1935, but the general working of the society was being improved with the assistance of an officer of the Co-operative Department. The main factory at Kallakurichi was leased out, whilst the other two factories at Sankarapuram and Rishivandiyam were run by the society with the assistance of the Co-operative Department. As it was reported that the machinery was in a neglected condition, arrangements were made, in February 1935, for the revaluation of the assets of the society, including the machinery and plant, by the Industrial Engineer. The Registrar of Co-operative Societies who was furnished with a copy of the report of the revaluation, and asked whether it was proposed to adopt the revaluation figure for purposes of audit report has replied to the effect that the society will be discharging the Government loan in full shortly. The society paid the instalment of the loan which fell due during the year.
- (ii) *The Andal Mills, Gudiyattam.*—The amount of Rupees 1,800 offered by Messrs. Crossley Bros., was received in June 1935, and adjusted to the credit of the arrears of loan due from the proprietor, Mr. D. Rangaswamy Nayudu. For the balance of Rs. 1,715-6-10 due from him, an affidavit of claim has been filed with the Official Assignee, Madras, who has not so far passed any orders on it. The Government Solicitor has been requested to ascertain from him how the matter stands and whether there is any likelihood of a dividend being declared in the near future.
- (iii) *The Salem Dye Works Syndicate, Limited.*—Necessary proceedings against the Salem Dye Works Syndicate, Limited, for the recovery of the entire balance of loan outstanding against them were taken in accordance with the orders contained in G.O. No. 248, Development, dated 14th February 1935. Meanwhile, a new company styled “The South India Dye Works, Limited” was formed with the object of purchasing the machinery and movable properties of the Salem Dye Works Syndicate, Limited, after discharging their liabilities to Government, and transferring the machinery to Mettur and housing it in a building for the purchase of which they have made an application to Government. Pending the issue of

orders on that application, the Government have directed that further proceedings against the Salem Dye Works Syndicate, Limited, in the matter of the recovery of the arrears of loan, should be stayed. The insurance of the concern fell due on 13th November 1935 and as the syndicate failed to renew it, the renewal was effected by the department for a period of six months and the cost of the premium subsequently collected from them.

(iv) *The Ram Ram Safety Match Works, Tholampalayam.*—

The collateral properties offered as security were brought to sale and realized an amount of Rs. 165 which was adjusted to the credit of the loan account. There is still a balance of Rs. 209-6-6 due, and as it has been reported by the Collector of Coimbatore that the defaulter has no properties other than those already sold and that there is no means of recovering the amount, Government have been addressed to sanction the write-off of the outstanding balance.

(v) *Toy-maker K. Subbarayudu, Kondapalli, Kistna district.*—

The statement of accounts of the toy-maker for the year 1934-45 showed that the concern worked at a profit. Mr. Subbarayudu asked for an extension of time for payment of the third instalment also which was granted by Government. The amount has since been paid by him with penal interest for the extended period.

(vi) *The Metal Industries, Limited, Shoranur.*—

The audited accounts for the period ended 31st August 1935, showed that this concern worked at a loss. Owing to some differences of opinion in the management, Mr. C. K. Menon, retired from the post of Managing Director and Technical Expert early in January 1936, and was replaced by Mr. K. P. K. Menon who is now supervising the manufacturing operations. The instalment of the loan was paid on the due date.

vii) *Messrs. Boddu Paidanna Sons, Vizianagram.*—

The audit report for the year ended 31st March 1935 disclosed a loss on the working of the concern. Although the proprietors were permitted by Government to purchase and install two Chisty's oil expellers instead of a Muller oil expeller, they have not yet paid the suppliers of the machinery in full. They have not also submitted certain documents in connexion with the purchase by them of the new rice mill, and the question of securing by another mortgage this mill and the machinery installed in it, including the Chisty's expellers, filter press, etc., is therefore, held up. They applied for an extension of time for three months for the payment of the third instalment of the loan which fell due on 1st April 1935. The extension was granted by Government and the instalment has since been paid with penal interest.

(viii) *M.R.Ry. A. C. Krishnaswami Pillai, Mutupet, Tanjore district.*—The loan of Rs. 500 sanctioned to Mr. Krishnaswamy Pillai for the purpose of starting a coir factory on a small scale was disbursed on 8th April 1935. There has been some delay on the part of the borrower in purchasing and setting up the requisite appliances, but it is understood that manufacturing operations have recently been started.

(ix) *The Sri Ramakrishna Sugar Mills, Kirlampudi, East Godavari district.*—The loan of Rs. 50,000 sanctioned to the mills was disbursed on 31st March 1936.

11. In reviewing the results of the working of the State Aid to Industries Act, the Public Accounts Committee expressed the view that the Act had not proved successful in attaining the objects for which it was enacted, and they suggested an examination of the possibility of amending the Act, or of the rules framed thereunder, or of taking such other action as might be necessary in order to render effective the Government's policy in the sphere of industrial finance. The subject was brought before the Board of Industries at a meeting held just before the close of the year. The Board considered the present time inopportune to take up the question of establishing, with Government support, a provincial credit institution, and accepted my view that the more practical course for the present would be to concentrate on efforts to improve and liberalise the present Act. Accordingly the Board made certain recommendations for the amendment of the Act with a view to increasing its practical usefulness, and these are now under the consideration of Government.

12. *General assistance to trade and industry.*—The Department of Industries is the special organ of Government charged with the oversight of trade and industry, and the work of providing general and statistical information on industrial and commercial subjects is carried on in the Bureau of Industrial and Commercial Information, the scope and organization of which have been fully detailed in previous administration reports. The work of the Bureau has increased during the last few years as a result not only of the development of particular subjects, but also of the increase of public interest in industrial and commercial questions of all kinds. The number of visitors calling at the office to make verbal enquiries has increased to such an extent in recent years that it has become very difficult to find the necessary time to interview callers and discuss with them, often at length, the subject of their inquiry. In addition to inquiries on industrial and commercial questions from the public, a number of inquiries were as usual received from the Director-General of Commercial Intelligence and Statistics, Calcutta, in regard to overseas trade in general, and with reference to the manufacturers of different articles, or to the financial standing and business

reputation of firms and individuals. The Director-General continued to be supplied with a monthly review of trade conditions in the Madras Presidency. In connexion with the Ottawa preferences, the Local Government were supplied with quarterly reports in respect of magnesite and cotton manufactures, and half yearly reports in respect of woollen carpets and rugs, coir yarn and matting, and myrobalans. An half-yearly report was sent to the Director-General of Commercial Intelligence and Statistics in respect of the industries of the Presidency affected by the Ottawa Trade Agreement, and also a special periodical report in regard to the Senna market.

13. The Bureau continued to compile statistics relating to industries, including statements of cotton, jute, paper and woollen mills, and mines and minerals, as also the annual review of the working of the Indian Mines Act. The annual return of large industrial establishments in the Madras Presidency coming under the operation of the Indian Factories Act, 1911, was, as usual compiled. Summaries on the subjects of manufactures and mines and quarries were also prepared for inclusion in the administration report of the Presidency. A considerable proportion of the reports which I submit to Government have, in greater or less degree, a statistical basis, whilst the increasing attention that is being devoted to economic questions, renders it necessary for the Director of Industries to maintain a close watch on market conditions, trends, and prices. The arrangement under which the work of compiling statistics was divided between the Board of Revenue and the Department of Industries was not an ideal one and there was obviously much to be said in favour of concentrating the preparation of all statistics in one department. The whole question was brought under review during the year, and in G.O. No. 529, Development, dated the 31st of March 1936, Government ordered that all the statistical work carried on in the office of the Board of Revenue, with the exception of the collection of information regarding rainfall, retail prices, and season, required for the preparation of the season report, together with the Statistical Officer and staff engaged on this work, should be transferred to the Director of Industries. It is hoped that this transfer will result, over a period, in an improvement in the economic organization of Government. When the transfer is given effect to, I propose to examine the question of whether it would be practicable to institute an index number of wholesale prices at Madras. The matter will require careful study; but as there are already index numbers of wholesale prices for Calcutta, Bombay, and Karachi, it is very desirable that there should also be one for Madras. Now that it is the recognized function of the Director of Industries to collect and present statistical and other information in regard to prices and the trade and business of the province, I trust that steps will be taken to change the designation of the Director of Industries in the Madras Presidency to "Director of Industries and Commerce," or

"Director of Industries, Commerce, and Statistics." The desirability of adopting this change of designation was referred to in my last administration report.

14. A considerable number of inquiries were received and answered during the year, and the undermentioned instances may serve to illustrate the ways in which the Bureau is of assistance in supplying information and advice on industrial and commercial subjects to inquirers:—

- (i) The Consul for the Netherlands in Madras was supplied with the names of suppliers of ground chalk in this Presidency.
- (ii) An industrialist in the Northern Circars was supplied with information in regard to the possibility of starting a coconut desiccating factory.
- (iii) Information in regard to the manufacture of fire crackers was supplied to a firm in Sivakasi.
- (iv) An enquirer in Tanjore was supplied with the names of institutions in Bombay which provide instruction in radio.
- (v) An East India merchant in London was supplied with the names of manufacturers of cigars in this Presidency.
- (vi) Information in regard to the suitability of "nanal" grass for paper making was communicated to a paper mill in this Presidency.
- (vii) A cotton mill in Tiruppur was furnished with a list of the principal manufacturers and dealers in handlooms in Japan, Italy and Germany.
- (viii) Information in regard to the photo-stat system in use in this Presidency was supplied to the Director of Commercial Intelligence, Colombo.
- (ix) The Director-General of Commercial Intelligence and Statistics, Calcutta, was furnished with a note relating to the production of school slates in the Presidency.
- (x) An enquirer in Erode was supplied with a note on the saltpetre industry.
- (xi) The names and addresses of the principal exporters of cardamoms in the Presidency were communicated to an inquirer.
- (xii) The Director-General of Commercial Intelligence and Statistics, Calcutta, was supplied with a list of the names and addresses of the principal block printers in the Presidency.
- (xiii) A note on the distillation of vetivert and oris roots was communicated to an enquirer in Malabar.
- (xiv) A list of the manufacturers of bakelite products in Bombay was sent to a firm in Madras.

(xv) Information in regard to the imports of pepper by sea into the several maritime provinces of India with details of the principal countries of origin, was supplied to a firm on the West Coast.

15. *General industrial development.*—The tendency of industrial countries is to become more self-supporting agriculturally as a result of which the demand for some of India's staple products is restricted or curtailed. The stimulation of manufacturing industries in the agricultural countries has its counterpart in agricultural development in the industrial countries. The changed world conditions and the consequent restrictions on international trade render it imperative on our part to readjust our agricultural and industrial production, and to endeavour to produce such of the industrial products as there is a demand for, and for the production of which facilities exist. It was suggested in last year's report that the possibility of establishing several important industries, and of manufacturing several new products, would be opened up by the advent of electric power in certain areas. In the modern industrial world cheap electricity is an essential for certain chemical and metallurgical operations, for, in addition to its use as a source of power for running machinery, electricity can be utilized to great advantage for producing high temperatures as in operations where the electric furnace is used and in electro-metallurgy, or for actually bringing about chemical changes as in the electrolytic processes for producing alkali. The necessity of accelerating as far as possible the industrial development of the Province is fully realized since, if Madras does not take active steps in the direction of establishing some basic industries, there is ground for apprehension that we shall in a few years time be importing from other parts of India considerable quantities of industrial products which could and should be manufactured in this Presidency. If, however, important industries are to be attracted to the Madras Presidency, it may be necessary in the interests of the promotion of industrial development to adopt in suitable cases, a similar liberal policy to that followed by certain Indian States. Much time and attention was devoted during the year to the possibility of establishing new chemical and other industries, especially in the Mettur area, and correspondence and discussions with the interests concerned continued throughout the year. Information was collected in regard to the availability of the requisite raw materials and samples of salt and limestone and information on other points were sent to a company which had evinced an interest in regard to the establishment of an important chemical basic industry. Shortly after the close of the year, a definite offer was received to establish the industry in the Mettur area within 18 months provided certain concessions were granted, and the question is now under the consideration of Government. As the negotiations are in a confidential stage, it is not possible to refer to the project in greater detail, but I hope to be able to record in my next report that an important

basic chemical industry is actually in process of establishment. Although there is no doubt much to be said for the view that small scale industries offer, so far as India is concerned, the best solution of some of the difficulties generally inherent in the development of industries, it must be recognized that the establishment of industries of basic and fundamental importance would render possible and greatly facilitate the establishment of new medium or small scale industries, the finished products of the former functioning as raw materials in the processes employed by the medium or small scale industries. For this reason, and also on general economic grounds, it is not advisable to rule out the establishment of large scale industries and, to concentrate wholly on minor industries coming under handicrafts and cottage industries. The advent of electricity will, however, permit of industrial development being spread over a wider area of the Presidency, instead of being concentrated in large urban areas, Mettur, which seems likely to develop into a model industrial centre, will, for example, be able to offer all the amenities necessary to attract and retain a contented labour force. The possibility of establishing certain other industries in the Mettur area, e.g., the pulp (cellulose) industry, has also received consideration in conjunction with certain commercial interests. A reference was made in last year's report to the question of the manufacture of staple fibre, the use of which in replacement of cotton, is likely to increase. Staple fibre, like rayon or artificial silk, is produced from wood pulp by forcing viscose through minute holes to form filaments which are cut into short lengths or staples which can be spun on ordinary cotton machinery with little adjustment. The future appears to lie with staple fibre in cotton spinning as an alternative raw material to Egyptian cotton. Short staple cotton, if sufficiently cheap, or cotton linters, could be used in place of wood pulp as a base of cellulose for staple fibre manufacture, but the question is whether cotton linters could be assembled in sufficient quantity at a centre at a sufficiently low price. In regard to this question, enquiries have been instituted through the Agricultural Department and these are in progress. There is also the possibility of the utilization of bamboo pulp as a raw material for the production of cellulose required for the manufacture of staple fibre and if this proved to be possible, Mettur with its ample supply of good quality water, would be a very suitable centre for this newest textile industry. My preliminary enquiries go to show that the yield of alpha-cellulose from bamboo is very low and that the extraction of cellulose from bamboo would be higher than from short staple cotton or linters owing to the greater number of processes which would require to be employed. Further inquiries, however, are in progress, and I hope to be able to arrange shortly with a private firm for a consignment of bamboos to be sent to Europe for laboratory and manufacturing tests. There are considerable imports of cotton cloth into the Madras Presidency not only by sea, but also by rail

from Bombay and Ahmedabad. The imports from Bombay and Ahmedabad consist mostly of the finer varieties of goods, such as, fancy shirtings, bleached twills, sarees, dhoties, and mulls. The desirability of developing the manufacture of bleached textile goods in this Presidency has long been recognized, and it is satisfactory therefore to be able to record that a well-known Madras firm, which commands strong financial and technical backing, has acquired, during the year, an option over an area of land at Mettur with a view to establishing a cotton spinning, weaving, bleaching and finishing mill, and there is every prospect of this development materializing during the year 1936-37.

16. *Salem Iron Ores.*—It was mentioned in last year's report that the Geological Survey Department had been asked to carry out, as early as possible, an entirely new survey of the Salem iron ore deposits and to arrange for the officer deputed to carry out the investigation to collect the samples of ore to be sent for large scale magnetic concentration tests. I suggested that a new investigation of the deposits should be carried out as a preliminary to the taking of the bulk sample because, in the past, some investigators appear to have confined their attention to a part only of the deposits, and in view of the vital importance of the new investigation, it seemed desirable that the bulk samples should be collected from a sufficiently large area to enable definite and final conclusions to be drawn as to the commercial value of the deposits. For, it must be recognized that if the commercial exploitation of the Salem iron ores is to be taken up, a very large capital will be involved and industrialists will need to be very sure of their ground before embarking on the enterprise. The Director, Geological Survey of India considered, however, that the results of the tests with the magnetic concentration plant of the Travancore Minerals Co., Ltd., should be awaited before initiating a comprehensive examination of the deposits as a whole. Mr. Paul G. Dowie, Assistant Professor of Geology, Presidency College, Madras, was deputed to Salem during the Christmas holidays to collect samples of the Kanjamalai iron ore, and one of the samples of the deposits taken by Mr. Dowie was reduced to 30 mesh and despatched to the Travancore Minerals Co., Ltd., to enable them to ascertain whether their magnetic concentration plant was suitable for carrying out a bulk test of the ore. Unfortunately, however, it was found that their commercial magnetic separators, which are of the high intensity type, lifted the whole of the sample even when working at their lowest intensity, and their machines were therefore useless for a large scale test. The Travancore Minerals Co., Ltd., advised that, for the enrichment of magnetite ores, the magnetic separator usually employed is the 'Drum' type which takes a feed of lump ore. Accordingly, the Director, Geological Survey of India has been asked whether he could arrange for a sample of the ore to be tested on a magnetic separator of the 'Drum' type in Europe. The question of

examining some of the other samples of ore, which were drawn by Mr. Dowie from the Kanjamalai Hill deposits was also under consideration at the end of the year.

17. *Steel rolling mills.*—An important industrial development which came to fruition during the year was the manufacture of steel sections at Negapatam by the Indian Steel Rolling Mills, Limited, which was registered in 1934. The erection of the mill was completed by the 31st of December 1935, and the first billet was rolled on the 25th of January 1936 when the supply of electricity was connected up from Pykara. The mill is capable of an output of 8,000-10,000 tons of merchant sections per annum when working a single shift of eight hours, and it is aimed that the demand will warrant the mill working in two shifts of eight hours each and producing about 20,000 tons per annum. The mill is fed by billets heated in a special furnace using pulverised coal. Another steel rolling mill with a maximum capacity of about 20 tons of steel sections per day has been set up at Bezwada. This mill, which will melt steel scrap and re-roll it, experienced considerable difficulty owing to the fact that the permission granted by the Special Officer of the Bezwada Municipality for setting up the steel rolling mill was subsequently withdrawn by Government in the Local Self-Government Department, under the impression that the construction of the factory had not progressed to any extent, and the mill-owners were requested to remove the mill to an area in the northern part of the town and well away from the residential areas. I took the matter up with Government on behalf of the mill-owners and pointed out that they had spent a considerable amount of money on the levelling of the site, the purchase, transport, and partial erection of the machinery and plant, factory buildings, etc., and that if they had to remove to another site, they would be subjected to heavy loss and, with their limited resources, might not be able to stand the unexpected financial strain, in which case a promising new industry would be lost to Bezwada. The Government reviewed the question and decided that in the interests of industrial development, the mill should be permitted to work on its present site subject to certain conditions in regard to the use of fuel. The erection of the mill was approaching completion at the end of the year.

18. *Exemption from excise duty of small sugar factories.*—Applications were received during the year for exemption from payment of the excise duty on sugar from three of the small sugar concerns. Two of the factories were planned and erected, and one of the factories was reconstructed, before the excise duty was thought of, and circumstances will have to be very favourable for these small factories to be able to earn a profit after paying the excise duty, allowing for depreciation, and paying a reasonable price to the sugarcane growers, whilst, if, as a result of the increased internal competition, prices fall further, their position is likely to become serious. I endorsed the recommendation

which had been made by the Registrar of Co-operative Societies that the excise duty should be waived during the first two years of the factories' operations in the case of the two co-operative sugar concerns, and suggested that, if possible, the concession might be extended to the third factory which is not organized on co-operative lines. The Government were unable to recommend the request of the latter concern to the Government of India, whilst in the case of the two co-operative societies, the Government of India declined to grant their request to be exempted from the payment of excise duty on sugar.

19. *Molasses*.—The disposal of molasses by the sugar factories which have no distilleries attached to them presents considerable difficulty as there is little or no demand for the product. Molasses is now being exported by tankers to Europe where it is used not only for the production of industrial alcohol and by yeast makers, but also as an ingredient for cattle foods, but the exporting Corporation is able to handle only the molasses of the larger factories situated in reasonable proximity to the ports and commanding railway tank wagon freight. Although it is possible to burn molasses in the boiler furnaces of sugar mills, a satisfactory furnace which will overcome the clinkering difficulty has yet to be evolved. At the Vuyyuru sugar factory, however, the bagasse is sprayed with molasses through a perforated pipe at the point where the bagasse enters the conveyor from the mill. As molasses has about the same calorific value as bagasse, a saving of from 5 to 10 per cent of the bagasse is effected in this way and no special difficulties in regard to clinkering appear to have been met with. A possible way of utilizing the molasses produced by sugar factories situated not far from ports would be to manufacture butyl alcohol from molasses by the direct fermentation process. Butyl alcohol is becoming of increasing importance, as it is widely used in the varnish and lacquer industries, as well as for several other purposes. By the fermentation process referred to, acetone and ethyl alcohol are also produced, whilst hydrogen and CO₂ are obtained as by-products. The possibility of attaching a factory for the manufacture of these chemical products to a sugar mill located within easy distance of a port would seem to be worthy of examination, although the production of butyl alcohol and acetone would have to be exported to England, as there is very little demand, at present, for these chemical products in India. If, however, the manufacture of staple fibre by the acetate process is developed in India, a demand would arise for acetone. A factory manufacturing the solvents mentioned would seem to have a considerable advantage over a factory manufacturing the same products in England from imported molasses. Sub-Committee No. III of the Sub-Committee of the Provincial Economic Council for Agricultural Development considered the question of molasses, and in their report have suggested inter alia that the Agricultural Department should initiate experiments in regard to the possibilities of utilizing molasses both as a cattle food and a fertilizer.

20. *Wattle*.—The question of the import and use of wattle bark came under review during the year. Imports of this tanning material have increased considerably since 1922-23 when less than 200 tons were imported, the imports during each of the last two years having exceeded 13,000 tons. Avaram and konnam alone were used in the tannage of hides until about 1918, when owing to the high price of avaram, the South Indian tanner found it uneconomic to continue to use avaram for tanning. It was thus an economic necessity that led the Madras tanner to resort to wattle bark, and this necessity will continue unless and until avaram can be made available in sufficient quantity at rates which would render the tanning of hides with it economic. It is estimated that during the last four years, imports of wattle bark have represented over 85 per cent of the quantity of bark required for tanning the entire quantity of hides exported. Wattle extract has recently been introduced to a small extent in the place of wattle bark for the tanning of hides, and a representation received from a Madras firm that the import duty on wattle extract should be abolished, was supported by the department on the ground that it is a sound canon of fiscal policy not to tax the import of a raw material, for although wattle extract may be a finished product in relation to the bark, in relation to the tanning industry, it must be considered as a raw material. The question whether any steps could usefully be taken to encourage the cultivation of black wattle (*Acacia decurrens*) in the Madras Presidency was under the consideration of Government at the close of the year, and information as to the soil and climatic conditions required for its cultivation, and as to the availability of sufficient areas of land suitable for the purpose, was being collected by the Forest Department.

COTTAGE INDUSTRIES.

21. It is generally recognized that no scheme for the economic reconstruction of a great agricultural country like India can be complete without adequate provision for the introduction and development of rural industries, and that it is unlikely that the problem of unemployment in this country will ever be solved by the setting up of large-scale industries alone. (The Government of India have provided grants-in-aid for the improvement and development of the handloom weaving industry on co-operative lines, and for the benefit of the sericulture industry, and reference to these activities will be found in the appropriate sections of this report.) The Government of India have further decided to make a grant of Rs. 5 lakhs spread over a period of five years for the benefit of the cottage and small scale woollen industries of the several provinces. The woollen goods manufacturing industry of the Madras Presidency is more or less restricted to the production on handlooms of druggets, pile-carpets, and cumblies, and shortly after the close of the year, a scheme was drawn up which provides for the grant of assistance to the Ellore pile-carpet industry and the cumblie weaving industry in the Ceded districts. If the grant applied for is forthcoming, it is proposed to set up a small power plant comprising

willowing, carding, and spinning machinery, and a dye-house at Ellore, the operations of which will be organized on a co-operative basis. The amount which it is hoped to obtain for the development of the cumbly weaving industry in the Ceded districts will be used for the purpose of organizing two parties which will visit the villages and demonstrate to the cumbly weavers the advantages of using improved types of looms and appliances. It is also proposed to organize and subsidize two co-operative societies each year, during the period of five years that the Government of India grant will be in force, for the purchase and supply of wool and for the financing of the supply of improved appliances to the weaver members. The cumbly weaving industry of the Ceded districts is at present organized on extremely primitive lines, and the advent of the Government of India's subvention affords a welcome opportunity of doing something for the industry and of improving the lot of those engaged in it.

22. *Preparation of cashew syrup from cashew apple.*—In view of the availability in quantity of cashew apple, which is, except for minor use, generally allowed to go to waste during the season, experiments in regard to the utilization of the product were carried out at the Indian Institute of Science, Bangalore. The experiments involved a study of the nature and composition of the fruit juice, and the evolution of simple methods to concentrate, decolorize and deodorize the syrup. The conditions for the preparation of cashew syrup from cashew apple as a cottage industry having been standardized, arrangements were made for a practical demonstration of the processes involved, to be conducted at Mangalore. A demonstration, which was carried out under the auspices of the District Advancement Association of South Kanara in the presence of a number of members of the Association and other interested members of the general public, was very successful, and as a result, it is hoped that the preparation of the syrup for use in preserves, and also in beverages, will gradually develop as a home industry in Mangalore, and in the villages of the South Kanara district. It is understood that one gentleman in Mangalore has already taken up the manufacture of the syrup with a view to using it in the preservation of ginger and mangoes. The food value of the syrup would be greatly enhanced if the process could be adapted to retain the vitamin C originally present in the fruit. The syrup could also form the basis of cashew arrack which, it is understood, is now prepared only during the season when the fruit is available.

23. *Manufacture of white sugar from palmyra juice.*—A demonstration of white sugar manufacture from palmyra juice with the aid of centrifugals was conducted at Rettakulam in the Tinnevely district during the year. It has been demonstrated that good marketable white sugar can be prepared from palmyra juice by the open-pan system and that the molasses obtained in the process can be converted into jaggery by reboiling with fresh juice. It has also been shown that it is possible to prepare from

palmyra juice a higher quality jaggery than is at present being prepared in the district. Owing to various disadvantages under which the demonstration was carried on, however, the data obtained can be regarded only as provisional pending confirmation by further trials. Arrangements were in progress at the end of the year for the conduct of a demonstration of the manufacture of white sugar and improved jaggery from palmyra juice at Bhimavaram in the West Godavari district. It is hoped that this further demonstration will afford an opportunity of ascertaining definitely whether the manufacture of white sugar from palmyra juice by the open-pan system can be carried on profitably as a cottage industry, or whether it is more profitable to manufacture good quality or even ordinary quality jaggery. If the demonstration is successful, an endeavour will be made to organize co-operative societies of tappers to manufacture white sugar or improved jaggery, as is found most profitable, not only in the West Godavari, but also in the Tinnevely district where the original demonstration was carried out.

24. *Improved methods of coir retting and coir production.*—Attempts have been made from time to time to encourage the people on the East Coast to adopt improved methods of retting coconut husks, as it was considered that provided West Coast methods were adopted, coir fibre and yarn could be produced on the East Coast approximately equal in quality to those produced on the West Coast. There are large areas under coconut in parts of Ganjam, Vizagapatam, Godavari, and elsewhere, but the coir produced in these areas is of an inferior quality, and much of the coconut husk is used as fuel. The Cottage Industry Committee recommended that the experiments carried on at Thoppururai, should be extended to other parts of the Presidency where the areas under coconut are large, and where facilities for retting are available, while in other centres, steps should be taken to teach the ryots improved methods of extracting fibre and the manufacture of coir ropes. There should be scope for the development of the coir industry in the Presidency, as there are many localities where large quantities of coconut husks are available, but where the people are ignorant of the proper methods of retting coir and producing coir goods, and an increased measure of interest is being shown in the possibilities of developing this cottage industry. The Government have sanctioned my proposals for the demonstration of improved methods of coir retting and coir production at Baruva in the Ganjam district, and it is hoped that, as a result of the demonstration, which will be carried out during the year 1936-37, the economic position of the fisher folk in the area will be improved, whilst if the experiments are successful, it should be possible to introduce the improved methods of coir production in other suitable areas on the East Coast.

25. *Agent in London, for the sale of Madras industrial products.*—The second annual grant of Rs. 3,000 sanctioned by Government to the authorities of the Victoria Technical Institute

for a period of three years to enable them to arrange for the sale of Madras Industrial products in European markets through an agent in London was disbursed in the year under review. Articles to the value of Rs. 591 were supplied to the agent during the year ending 30th June 1936, and in the eleven months ending 31st May 1936, sales to the value of Rs. 1,244 were effected by him. The articles supplied to the agent consisted mainly of palm-leaf baskets, ivory articles, horn paddy birds, and toys. Arrangements were made by the agent for the display of a range of articles at the British Industries Fair. The agent considers that the prospects of developing a satisfactory trade in baskets, which are made by Muhammadan women at Pulicat, Manapad, and Nagore, are encouraging, provided that the dyeing of the basket can be improved. Accordingly, experiments have been conducted at the Textile Institute, and a sample set of dyed palmyra leaves with fast colours prepared. Subsequently, the Assistant Director of Industries (Textiles) visited Pulicat and demonstrated the process of dyeing in fast colours, and on my recommendation, a small amount has been sanctioned by the authorities of the Victoria Technical Institute for the engagement of a woman dyer to learn the process and to teach it to the women workers of Pulicat. The chief supplier of baskets at Manapad recently visited Madras and was shown the dyeing process at the Textile Institute. The results of the experiments at Pulicat are awaited before introducing the new dyeing process at Nagore. It is hoped that when fast colours are introduced the basket trade will expand considerably. Samples of turned white wood articles supplied to schools by Messrs: Dryads, Ltd., Leicester have been sent to the agent in London, and he has been asked if he can secure orders for these articles. It cannot be claimed that the progress made by the agency during the year was very encouraging, but it is hoped that as the goods are gradually adapted to suit the requirements of the London market and become better known, an increased demand will set in for them.

GENERAL REVIEW OF COMMERCIAL AND INDUSTRIAL CONDITIONS.

26. *World conditions.*—The year under review was one of continued economic improvement, not indeed in international trade, but in domestic production. It was a year of easy monetary conditions, expanding trade and, on the whole, of rising commodity prices, though, as in the previous year, the upward trend of wholesale prices was at times either checked or accelerated by passing events, whilst the improvement has not effected all countries equally. The volume of world trade during the calendar year 1935 was actually some two per cent in advance of that of 1934, but its total value was without material change. International trade in fact shows little sign of returning to its former level. The volume of world trade is still about 23 per cent below that of 1929, whilst its value measured in gold is only one-third of what it was in that year, and the lowering of the

barriers to international trade, slow and difficult, as it must inevitably be, remains one of the most fundamental tasks of the present day. Within national boundaries a much more considerable improvement has come about as is indicated by the fact that production and employment in most countries increased more than world trade, the increase in world industrial production during the year amounting to about 11 per cent. In fact the index for world production, as a whole, is now back at the 1929 level. There is doubt, however, as to the extent to which industrial recovery in the various countries is attributable to natural causes, and how much to artificial influences and the temporarily stimulating, though unproductive and sterile expenditure, involved in re-armament programmes, which in some countries have been a factor in increased industrial output and employment, but which may sooner or later have to be paid for in a diminution of purchasing power. And in so far as industrial recovery is founded on warlike preparations it must contain an element of unreality. The contrast shown between the recovery of production and of trade is striking. It reflects partly the decline in gold values in which trade is measured, but more largely the fact that world recovery thus far has been an affair more within, than across national boundaries. The continued expansion in industrial activity has been largely responsible for a further reduction in the heavy stocks of raw materials which for a long period overshadowed markets. There has been during the past year an increase in the prices of a number of foodstuffs and raw materials, whilst at the same time export prices of many finished goods have continued to fall, or at least shown no tendency to rise. The first years of the world depression were marked by a far greater rise in the price of raw materials than in those of manufactured goods, but during the previous year this tendency was arrested and during the period under review, the spread between the prices of primary commodities and manufactured goods has tended to narrow in many countries, thus raising the purchasing power of large sections of the world's population. As compared with the previous year wholesale prices moved upwards in practically every country, British and American prices rising by approximately the same amount, the improved trend in the principal markets reflecting the acceleration in the demand for raw materials. The Statist index of the general price level of wholesale commodities which was 82.9 in March 1935 rose to 86.4 in March 1936. The Calcutta index number (July 1914=100) which was 87 in March 1935, advanced to 91 in March 1936 representing a rise of 5 per cent. The Karachi index number similarly advanced from 97 in March 1935 to 100 in March 1936 or by 3 per cent. On the other hand, the Bombay index number which was 98 in March 1935 and rose to a 100 in October of that year declined to 95 or by 3 per cent in March 1936. A significant feature of the price advance during the year was that it took place during a period of relative currency stability, thus evidencing a real improvement in the international price level. The

outstanding feature of the exchange situation has been the realization of a large degree of *de facto* exchange stability. An area covering more than 85 per cent of world trade enjoyed during the greater part of the year under review, the benefit of practically stable exchange rates, and the relative levels of costs and prices in France, Great Britain, and the United States became, on the whole, better adjusted to each other. The flight from the franc, however, has since increased the probabilities of an eventual devaluation of the gold bloc currencies. The period immediately prior to and after any devaluation of the franc and the guilder may be expected to be one of uncertainty for commodity markets with prices in some instances showing sharp temporary declines. That period, however, should prove comparatively short-lived, provided the gold bloc currencies are devalued in a direct manner on the Belgian model without resorting to exchange restrictions, since the stabilization of the gold currencies at a level more in keeping with their true parities may be expected to encourage a return of confidence, and the removal of the brake on international trade provided by an overvalued franc and guilder, should assist world recovery, and with it a rise in raw material prices. The disintegration of the gold bloc should therefore assist international economic revival, whilst in spite of the continued maldistribution of gold, the mounting gold production, and the upward revaluation of gold in various countries, should gradually have its effect on credit conditions, and be reflected eventually in an upward movement in commodity prices. The short-term outlook, nevertheless, remains somewhat unsettled owing to the general feeling of insecurity born of the existing international political situation, whilst the fact that domestic trade is at present the mainstay of industrial activity in nearly all countries places a limit on the period during which the present phase of continuing improvement can be expected, and renders it difficult to venture on a long range forecast. Given some measure of political tranquillity and security, however, there are many factors in the present position that favour a continued expansion in the demand for primary products and a steady progression in world commodity prices.

27. Economic conditions in Madras.—One of the principal events in the economic sphere in India during the year was the coming into being of the Reserve Bank of India on 1st April 1935, when that institution took over the paper currency department of the Government of India. On 1st July, it assumed the functions of a bankers' bank, when it became compulsory for the other banks to maintain a percentage of their deposits with the Reserve Bank. The Bank rate, which had remained unchanged at $3\frac{1}{2}$ per cent since February 1933, was reduced to 3 per cent on the 28th November 1935, at the commencement of the busy season when rates generally tend to harden. As in other countries, internal trade in India improved, and this was reflected in the value of the cheques passing through the Madras Clearing

House which increased from Rs. 56,22,16,756 in the year ended 31st March 1935 to Rs. 69,83,09,506 in the year under review. The improvement in commercial conditions was not, however, reflected in the earnings of the railways. The total receipts of the Madras and Southern Mahratta Railway Company, Limited, declined from Rs. 7,47,09,618 in 1934-35 to Rs. 7,31,03,000 in 1935-36 as the result of a falling off in receipts under oil seeds and to the competition experienced from road motors in passenger, parcels, and goods traffic. The total earnings of the South Indian Railway Company, Limited, also declined from Rs. 5,51,36,281 in 1934-35 to Rs. 5,23,22,637 in 1935-36 owing to the competition of road vehicles which offer door to door service at cheaper rates, a falling off in the import of foreign grains and pulses, and to the restricted movement of groundnut. The total value of the trade of the Madras Presidency decreased by Rs. 90 lakhs or by nearly 1.2 per cent to Rs. 7,585.48 lakhs but though the foreign trade declined in value from Rs. 4,446.22 lakhs to Rs. 4,337.37 lakhs, the coasting trade increased from Rs. 3,229.34 lakhs to Rs. 3,248.11 lakhs. In the case of private merchandise, imports from foreign countries declined from Rs. 1,735.12 lakhs to Rs. 1,571.11 lakhs, or by over 9 per cent. Imports of machinery and mill work, cotton twist and yarn, paper and paste board, hardware, chemicals, manures, drugs and medicines, liquors, silk, glass and glassware, and tea chests increased, but amongst other articles, metals and ores, cotton manufactures, grain pulse and flour, oils, vehicles, dyeing and tanning substances, sugar, rubber, spices, art-silk, tobacco, and soap, registered decreases. Exports of private merchandise (excluding re-exports) increased from Rs. 2,505.05 lakhs to Rs. 2,680.26 lakhs or by nearly 7 per cent. Oil-seeds, leather, tea, cotton manufactures, fruits and vegetables, coffee, grain pulse and flour, coir (raw and manufactured), metals and ores, tobacco, rubber, hides and skins (raw), and oils increased, whilst exports of cotton raw, oil-cakes, and spices declined. Shipments of gold declined sharply from Rs. 106.54 lakhs to Rs. 4.72 lakhs. A glance at the table of prices of commodities which faces this page shows that the average of the monthly average values of most primary products was higher during the year under review, though the movement of quotations was anything but uniform. The averages of the monthly average values of cotton, groundnuts, paddy and rice, copra, coconut oil, jute, tobacco, myrobalans, castor-oil, castor-seed, tanned cow hides, tanned goat-skins, and tanned sheep-skins were higher during the year under review than in the previous year. In fact, pepper, coir-yarn, and locally manufactured sugar were, amongst the listed commodities, the only ones to exhibit lower average values. Values of copra, coconut-oil, castor-seed, castor-oil, jute, tanned cow hides, tanned goat-skins and tanned sheep-skins were higher in March 1936 than in the corresponding month of the previous year, but cotton, groundnut, pepper, paddy and rice, coir-yarn, tobacco, myrobalans, and sugar were standing at lower levels.

Average monthly wholesale prices of some of the principal Madras commodities during the year 1935-36.

Commodities.	April.			May.			June.			July.			August.			September.			October.		
(1)	(2)			(3)			(4)			(5)			(6)			(7)			(8)		
	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.
Cotton (Cambodia), per candy of 520 lb.	189	6	0	196	4	10	192	8	0	190	0	0	180	8	0	175	0	0	175	0	0
Cotton (Karunganni), per candy of 520 lb.	172	8	0	178	0	0	175	0	0	175	0	0	172	8	2	167	8	0	167	8	0
Groundnuts (Nandyal), per candy of 531 lb.	33	15	3	36	12	0	34	11	0	31	1	6	33	9	5	31	2	0	32	1	6
Groundnuts (Coimbatore), per candy of 531 lb.																					
Pepper, per cwt.	26	10	0	26	11	2	25	6	6	25	1	0	25	11	7	29	8	0	32	12	0
Paddy, per bag of 164 lb.	4	7	3	4	10	7	4	11	0	4	11	0	4	11	7	24	3	0	25	1	0
Rice do.	6	4	6	6	8	7	6	9	0	6	9	6	6	10	0	4	11	9	4	11	9
Coir yarn, per candy of 672 lb.	62	0	0	62	0	0	61	0	0	60	0	0	60	0	0	58	8	0	55	12	0
Copra, per candy of 655 lb.	48	10	0	52	6	5	51	2	0	51	6	0	51	0	0	53	12	0	61	4	0
Coconut oil, per candy of 655 lb.	73	7	0	78	10	5	77	11	0	77	8	0	76	2	5	82	2	0	93	4	0
Jute, per candy of 506 lb.	33	2	0	36	0	0	39	0	0	37	2	0	35	0	0	32	0	0	35	0	0
Tobacco, per maund of 28 lb.	6	1	0	6	4	0	6	8	0	6	8	0	6	8	0	6	8	0	6	8	0
Myrobalans, per bag of 164 lb.	3	0	0	3	5	0	..	..	..	4	4	6	3	10	0	3	0	0	3	4	0
Castor oil, per candy of 500 lb.	62	10	0	67	6	0	66	14	0	66	10	0	70	10	0	70	2	0	75	10	0
Castor seed, per bag of 164 lb.	9	4	9	10	0	0	..	..	..	9	11	0	10	0	6	9	14	8	10	9	0
Java sugar, per cwt.	12	14	6	12	15	4	13	4	4	13	2	8	13	..	..	13	4	10	14	10	0
Nellikuppam sugar, per cwt.	12	12	6	12	13	9	13	2	3	13	0	10	13	0	10	13	4	10	14	7	6
Channapata sugar, per cwt.	12	12	6	12	13	9	13	2	3	13	0	10	13	0	10	13	4	10	14	7	6
Tanned cow hides—																					
Bangalore, 8-8½ lb., per lb.	0	7	0	0	7	3	0	7	2	0	7	4	0	7	8	0	8	4	0	9	10
Up-country, 8-8½ lb., per lb.	0	6	8	0	6	11	0	6	11	0	7	0	0	7	4	0	8	0	0	9	7
Coasts, 7-7½ lb., per lb.	0	7	0	0	7	2	0	7	2	0	7	4	0	7	7	0	8	6	0	10	1
Tanned goat skins—																					
Good, per lb.	1	5	5	1	5	2	1	6	9	1	8	0	1	8	2	1	8	6	1	9	0
Fair, per lb.	1	2	8	1	2	7	1	4	11	1	6	6	1	6	6	1	6	6	1	6	1
Common, per lb.	1	1	5	1	1	0	1	2	4	1	3	6	1	3	6	1	3	6	1	5	6
Tanned sheep skins—																					
Good, per lb.	1	7	2	1	6	11	1	8	11	1	9	6	1	9	5	1	9	6	1	9	11
Fair, per lb.	1	4	8	1	4	11	1	6	8	1	7	6	1	7	5	1	7	6	1	8	0
Common, per lb.	1	0	0	1	0	2	1	1	0	1	1	1	1	1	3	1	1	4	1	1	8

Commodities.	November.			December.			January.			February.			March.			Average of the monthly prices for 1934-35.			Average of the monthly prices for 1935-36.		
(1)	(9)			(10)			(11)			(12)			(13)			(14)			(15)		
	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.
Cotton (Cambodia), per candy of 520 lb.	177	0	0	176	10	8	166	4	0	160	0	0	157	8	0	168	11	1	178	0	2
Cotton (Karunganni), per candy of 520 lb.	168	0	0	164	2	8	150	10	0	145	10	0	142	8	0	156	11	7	164	14	2
Groundnuts (Nandyal), per candy of 531 lb.	29	2	7	29	12	0	32	8	3	30	7	2	30	6	8	22	14	10	32	2	1
Groundnuts (Coimbatore), per candy of 531 lb.	28	6	5	30	0	0	31	0	0												
Pepper, per cwt.	24	3	2	22	10	8	21	8	0	19	10	0	19	12	0	25	5	1	30	5	8
Paddy, per bag of 164 lb.	4	10	0	4	7	4	4	2	9	4	2	0	4	3	3	30	12	4	23	14	0
Rice do.	6	10	0	6	0	0	5	15	0	5	12	0	5	15	4	3	15	5	4	8	4
Coir yarn, per candy of 672 lb.	55	0	0	55	0	0	55	0	0	55	0	0	55	0	0	64	1	9	57	13	8
Copra, per candy of 655 lb.	64	12	10	66	5	4	68	0	0	68	12	0	68	0	0	40	15	3	58	12	7
Coconut oil, per candy of 655 lb.	98	12	10	98	5	4	100	4	0	99	14	0	98	7	0	61	3	0	87	11	4
Jute, per candy of 506 lb.	38	11	2	41	0	0	40	14	0	39	0	0	39	10	0	29	11	3	37	3	8
Tobacco, per maund of 28 lb.	6	0	0	6	0	0	6	0	0	6	0	0	5	4	0	5	13	10	6	2	9
Myrobalans, per bag of 164 lb.	3	4	0	2	8	6	2	9	0	2	2	0	2	4	0	2	12	0	2	13	0
Castor oil, per candy of 500 lb.	71	6	0	69	2	0	71	14	0	68	10	0	68	0	8	54	8	11	69	1	8
Castor seed, per bag of 164 lb.	10	1	0	10	0	9	10	1	0	9	9	9	9	11	2	7	15	7	9	14	6
Java sugar, per cwt.	13	7	11	13	4	3	13	5	2	13	4	0	13	3	7	13	8	1	13	8	1
Nellikuppam sugar, per cwt.	13	8	9	13	0	8	12	13	8	12	11	8	12	11	8	13	3	10	13	2	7
Channapata sugar, per cwt.	13	5	0	12	14	9	12	14	0	12	11	0	12	6	2	13	0	11	13	0	0
Tanned cow hides—																					
Bangalore, 8-8½ lb., per lb.	0	8	4	0	8	7	0	9	0	0	9	1	0	9	9	0	7	8	0	8	3
Up-country, 8-8½ lb., per lb.	0	8	1	0	8	3	0	8	9	0	8	9	0	8	9	0	6	11	0	8	0
Coasts, 7-7½ lb., per lb.	0	8	6	0	8	8	0	9	5	0	9	3	0	10	1	0	7	3	0	8	5
Tanned goat skins—																					
Good, per lb.	1	8	10	1	9	5	1	11	8	1	12	10	1	14	3	1	4	8	1	9	0
Fair, per lb.	1	6	7	1	7	1	1	9	8	1	10	8	1	12	2	1	2	11	1	6	11
Common, per lb.	1	5	0	1	5	0	1	7	9	1	8	7	1	10	5	1	1	7	1	4	9
Tanned sheep skins—																					
Good, per lb.	1	10	1	1	10	1	1	10	11	1	12	2	1	14	5	1	9	1	1	9	11
Fair, per lb.	1	7	11	1	7	9	1	8	7	1	9	10	1	12	2	1	6	2	1	7	9
Common, per lb.	1	1	10	1	1	9	1	1	11	1	2	7	1	8	6	1	0	9	1	1	6

28. *Inter-Empire and foreign trade.*—The trade with the British Empire during the year represented 57.66 per cent of the total foreign trade of the Presidency compared with 60.15 per cent and 59.22 per cent in 1933-34 and 1934-35 respectively. Imports decreased by Rs. 67.28 lakhs to Rs. 788.67 lakhs or by 8 per cent, whilst exports advanced by Rs. 1.65 lakhs to Rs. 1,669.05 lakhs or by 0.1 per cent. Imports from the United Kingdom decreased by Rs. 69.04 lakhs to Rs. 667.09 lakhs and exports to that country by Rs. 4.98 lakhs to Rs. 1,259.59 lakhs. The percentage of the trade with the United Kingdom to the total foreign trade of the Presidency declined from 46.95 per cent in 1934-35 to 45.20 per cent in the year under review. The following products contributed to the decrease in imports from the United Kingdom: brass mixed or yellow metal sheetings, cotton piece goods, copper sheets, machinery and mill work, cotton twist and yarn, and soap household. On the other hand, there was a marked increase in the imports of sulphate of ammonia. Exports to the United Kingdom of groundnuts, skins tanned, and cotton raw, decreased, but there were appreciable increases in the exports of hides tanned, coffee, skins raw, tobacco, leather unwrought, handkerchiefs and shawls, and coir manufactures. The trade with foreign countries (i.e., countries outside the British Empire) advanced from 40.78 per cent to 42.34 per cent of the total trade. Imports declined by Rs. 96.73 lakhs to Rs. 782.44 lakhs or by 11 per cent, but exports increased by Rs. 164.01 lakhs to Rs. 1,022.23 lakhs or by 19 per cent. Imports from European countries advanced from Rs. 291.31 lakhs to Rs. 310.66 lakhs and exports to these countries from Rs. 572.98 lakhs to Rs. 750.42 lakhs, whilst the percentage of the trade of these countries to the total trade of the Presidency advanced from 20.30 per cent to 24.89 per cent. As regards Asiatic countries, imports declined by Rs. 117.85 lakhs, owing chiefly to a marked falling off in imports of rice from Siam, and exports by Rs. 53.43 lakhs, the percentage of the trade with these countries to the total trade of the Madras Presidency declining from 14.97 per cent to 10.92 per cent. Imports from Japan increased by Rs. 14.38 lakhs, whilst exports to that country declined by Rs. 50.78 lakhs, the percentage of the trade with that country to the total trade of the Presidency declining from 6.39 per cent to 5.53 per cent. Imports from America declined by Rs. 4.06 lakhs, whilst exports to that country advanced by Rs. 40.12 lakhs, owing mainly to increased takings of cashewnuts and manganese ore.

29. *New industrial undertakings.*—One hundred and eighty companies were registered during the year, 174 with, and six without, share capital. The authorized capital of the companies registered amounted to Rs. 495.95 lakhs and the paid up capital to Rs. 4.03 lakhs, as against Rs. 446.61 lakhs and Rs. 22.52 lakhs respectively in the year 1934-35. Of the new registrations, 97 were trading and industrial concerns, 35 banking institutions,

26 cinema enterprises, five transit and transport companies, three insurance companies and fourteen others. Fourteen cotton spinning and weaving mills, eight public utility concerns for the supply of electricity, and two sugar mills (in addition to a sugar and general investment trust), were registered during the year. The number of cotton mills floated during the year, with their registered offices at Coimbatore, was eight with an aggregate authorized capital of Rs. 58,40,000. The companies floated with the largest authorized capital were: The Indian Circular Insurance Company, Limited, Madras (Rs. one crore), the Sugar and General Investment Trust, Limited, Madras (Rs. 25 lakhs), Rajapalayam Mills, Limited, Ramnad (Rs. 12 lakhs), Pullicar Mills, Limited, Coimbatore (Rs. 11 lakhs), Trichinopoly Mills, Limited, Trichinopoly, Tirumurti Mills, Limited, Coimbatore, Carnatic Electric Supply Corporation, Limited, Madras, General Bank, Limited, Madras, and Aaron Spinning and Weaving Mills, Limited, Telli-cherry (Rs. 10 lakhs each), Sree Sankara Mills, Limited, Salem (Rs. 9 lakhs), and Kumaran Mills, Limited, Coimbatore, and the Vimala Mills, Limited, Coimbatore (Rs. 7 lakhs each).

30. *Mining operations.*—The following prospecting licences and mining leases were granted during the calendar year 1935:—

	ACS.
Thirty-two prospecting licences for prospecting for barytes over an area of	1,011.72
Eight prospecting licences for prospecting for mica over an area of	374.68
Six prospecting licences for prospecting for asbestos over an area of	739.01
Four prospecting licences for prospecting for steatite over an area of	633.68
Two prospecting licences for prospecting for silver, lead, copper, zinc and antimony over an area of ..	446.97
One prospecting licence for prospecting for gold over an area of	7,562.40
One prospecting licence for prospecting for lead, copper, silver and zinc over an area of	236.00
One prospecting licence for prospecting for manganese over an area of	227.00
One prospecting licence for prospecting for red oxide and red ochre over an area of	85.00
One prospecting licence for prospecting for iron ore and manganese over an area of	77.60
One prospecting licence for prospecting for gold and silver over an area of	64.36
One prospecting licence for prospecting for diamond over an area of	50.00
One prospecting licence for prospecting for kaolin or China clay over an area of	37.14
One prospecting licence for prospecting for silver, lead and zinc over an area of	21.00
One prospecting licence for prospecting for aluminium silicate over an area of	14.00

Five mining leases for working barytes over an area of	360.52
Two mining leases for working mica over an area of	25.65
One mining lease for working limestone over an area of	3,579.81
One mining lease for working phosphatic nodules and gypsum over an area of	3,162.57
One mining lease for working asbestos over an area of	54.30
One mining lease for working kyanite over an area of	48.00
One mining lease for working steatite over an area of	24.64
One mining lease for working garnet sand over an area of	2.04

Mining was carried on during the year in the districts of Cuddapah, Kurnool, Nellore, the Nilgiris, Salem, Trichinopoly, Vizagapatam, Anantapur, Bellary, and Chittoor.

31. *Manganese.*—The mining of manganese was carried on in Bellary and Vizagapatam districts, the former reporting a production of from 200 to 300 tons and the latter of 15,885 tons. The total production in 1935 was about 4,000 tons less than in 1934. Exports of manganese increased from 196,018 tons valued at Rs. 29.89 lakhs in 1934–35 to 428,356 tons valued at Rs. 77.35 lakhs during the year under review. Of this quantity, Japan took 152,657 tons valued at Rs. 26.25 lakhs, France 95,252 tons valued at Rs. 17.34 lakhs, the United Kingdom 72,932 tons valued at Rs. 13.86 lakhs, and the United States of America 35,270 tons valued at Rs. 7.24 lakhs. The increasing demand for manganese ore in recent years has been further stimulated by the activity of the armaments industry.

32. *Magnesite.*—The output of magnesite increased from 11,859 tons in the previous year to 12,840 tons in 1935. Exports of magnesite from the Presidency amounted to 78,805 cwt. valued at Rs. 4.20 lakhs as against 69,320 cwt. valued at Rs. 3.41 lakhs in the previous year. Of the quantity exported, the United Kingdom took 61,429 cwt. valued at Rs. 3.09 lakhs. Although the Magnesite Syndicate, Limited, are in a position to produce thousands of tons of crude magnesite, their exports of this grade during the year amounted only to 20 tons. If a market for Indian crude magnesite is to be developed, it will be necessary to secure a substantially increased preference for the material in Empire markets.

33. *Mica.*—The production of mica increased from 386 tons in the previous year to 438 tons in 1935. A quantity of 342 tons of waste mica suitable for splitting purposes was also obtained, and appreciable quantities of this variety were consigned during the year. Exports of mica advanced from 10,275 cwt. valued at Rs. 7.73 lakhs in the previous year to 15,096 cwt. valued at Rs. 10.48 lakhs during the period under review, the United Kingdom taking 13,612 cwt. valued at Rs. 10.02 lakhs.

34. *Other minerals.*—The production of barytes increased from 2,899 tons in 1934 to 3,347 tons in 1935, whilst that of steatite advanced from 40 to 246 tons, and phosphatic nodules and gypsum from 59 and 55 tons to 102 and 528 tons respectively. The production of asbestos declined from 58 tons to about 8 tons. After an interval of five years, the Salem district returned a production of about 28 tons of corundum.

35. *Cotton.*—The area under cotton in the Presidency in 1935-36 was estimated at 2,648,900 acres as against 2,271,800 acres for the previous year, representing an increase of 14.2 per cent over the finally recorded area of 2,320,278 acres in 1934-35. The yield has been estimated at 540,700 bales of 400 lb. as against 476,840 bales in the previous year, an increase of 13.4 per cent. Exports of raw cotton declined from 26,335 tons valued at Rs. 174.35 lakhs in the previous year to 13,800 tons valued at Rs. 97.07 lakhs in the period under review, representing a decrease of 47.6 per cent in quantity and 44.3 per cent in value. It may be noted that the decline in the All-India exports of raw cotton amounted only to 2.7 per cent in quantity and to 3 per cent in value. Of the quantity of cotton exported from the Presidency, Japan took 3,959 tons valued at Rs. 26.04 lakhs, Germany 2,648 tons valued at Rs. 21.77 lakhs, Belgium, 2,639 tons valued at Rs. 18.43 lakhs, the United Kingdom 1,724 tons valued at Rs. 10.80 lakhs, and France 1,655 tons valued at Rs. 11.16 lakhs. Prices of cotton fluctuated widely during the year owing to the uncertainty which prevailed in regard to the American Government's agricultural policy in relation to the 1935 crop. Although the average of the monthly average values of cotton was higher during the period under review than in the previous year, prices at the end of March 1936 were standing appreciably lower than at the corresponding period of the previous year.

36. *Cotton mills.*—There were 39 cotton mills at work in the Madras Presidency with 1,035,230 spindles and 5,834 looms. The mill production of yarn during the year amounted to 113.08 million lb. compared with 103.77 million lb. in the previous year representing an increase of nearly 9 per cent. The mill production of cotton piece goods, during the year, increased slightly in yardage from 75.17 to 75.45 million yards, but decreased in weight from 20.90 to 20.30 million lb. The production of higher count yarns, namely, 40s and above, increased further from 17.21 to 19.84 million lb. Exports of cotton piecegoods (chiefly coloured, printed or dyed) from the Presidency advanced from 21.58 million yards valued at Rs. 81.74 lakhs to 22.16 million yards valued at Rs. 83.51 lakhs. The period under review was the first complete year since the introduction of the nine-hour day in cotton mills. Although it is hoped that ultimately greater efficiency will enable the loom pieceworker to recover most of his production lost by the hour no longer worked, at present the output is found to be practically the same per hour as it was during the longer working

day. The effect of the shorter working day has, therefore, been reflected in higher costs of production, and has impaired the competitive position of Indian mills against Japan. Competition was also experienced from imported towels, shirts, and other ready made garments, as well as from fabrics made of mixtures of rayon or staple fibre or fabrics made of various fibres other than cotton which are becoming increasingly popular and are replacing cotton to some extent. It is also noticeable that the Northern India mills are now devoting more attention to the Southern market, and shirtings from Ahmedabad appear to be gaining ground. There was a good demand for cloth during the first half of the year and prices tended to attain a degree of equilibrium with cotton values, but during the latter half of the year, demand for cloth fell off, prices became unremunerative, and stocks accumulated. The last quarter of the year especially was an unprofitable one for cotton weaving mills. Conditions were brighter in the spinning section of the industry during the first half of the year, and in April, May and June, there were satisfactory sales of yarn at fair prices. This was followed by a slack period for about three months due mainly to lack of confidence owing to the uncertainty in the cotton market to which reference is made in the preceding paragraph. In October-November cotton took an upward turn in India owing to the Italo-Abyssinian dispute and mills benefited by a renewed demand for yarn, although this was entirely speculative. Following the Supreme Court's decision against the legality of the various agricultural acts respecting cotton in America, cotton prices slumped steadily, and the remainder of the year was most disappointing from the spinners' point of view. The year as a whole was one of uncertainty caused by widely fluctuating cotton prices, with Japanese and Chinese 32s and 40s being imported heavily at dumping prices and adversely affecting prices of Indian mill production. Night work and consequent over production internally did not help the position, but the worst effects of these were kept in check by many mills resorting to the spinning of finer counts, especially 40s and 60s and thus reducing the production of 20s to 32s. The manufacture of hosiery in India is also expanding, and as it uses mainly coarse counts, a certain amount of the excess production in 20s to 32s was absorbed by this industry. The tendency of yarn prices was downwards and the year closed with 20s at annas 8 per 10 lb. and 40s at annas 12 per 10 lb. less than at the opening of the period under review.

37. *Hosiery.*—There were eight organized factories working, and the production increased from 1,228,295 lb. in the previous year to 1,232,059 lb. in the period under review. Demand was maintained at a satisfactory level during the year, but prices continued to show little or no profit to manufacturers.

38. *Madras handkerchiefs.*—Exports of Madras handkerchiefs increased in value from Rs. 12.45 lakhs to Rs. 29.66 lakhs. In the first six months of the year, shipments were light on account

of the low produce prices ruling, and heavy stocks held, on the West Coast of Africa, but during the remaining period of the year the rise in produce prices stimulated demand and shipments improved. As a result of the improvement in demand, there was an all-round increase in prices which is being maintained and looms are now fairly well engaged. The outlook for this important section of the handloom weaving industry appears to be fairly good.

39. *Jute mills*.—There were four jute mills in existence during the year, i.e., at Nellimarla, Chitavalsah, Ellore and Guntur, although two of them appear to have been idle during a part of the year. The number of looms and spindles in the mills was 966 and 22,384 respectively. The demand from local consuming centres was fairly steady throughout the year, but prices realized during the latter half were considerably lower than in the first half. In September when it became known that there was no possibility of a restriction either of working hours, or of additions to machinery, prices were marked down, but towards the end of the year the market steadied. The jute crop restriction scheme sponsored by the Bengal Government proved effective so that the price of the raw material gradually increased though not to an undue extent.

40. *Tanning industry—General*.—Exports of tanned hides advanced from 10,970 tons valued at Rs. 190.56 lakhs to 13,592 tons valued at Rs. 221.46 lakhs, but exports of tanned skins declined from 6,047 tons valued at Rs. 301.86 lakhs to 5,904 tons valued at Rs. 275.09 lakhs. The total quantity of tanned hides and skins, exported thus increased by 2,479 tons or by over 14 per cent, but the value increased by less than 1 per cent owing to a decline in the export of the higher priced tanned skins. Almost the entire quantity of tanned hides and tanned goat skins, and by far the greater portion of the sheep skins exported, went as usual to the United Kingdom, shipments to that country comprising, cow hides 11,408 tons valued at Rs. 180.38 lakhs, buff hides 824 tons valued at Rs. 12.95 lakhs, buff calf skins 371 tons valued at Rs. 6.66 lakhs, cow calf skins 693 tons valued at Rs. 15.78 lakhs, tanned goat skins 2,721 tons valued at Rs. 127.74 lakhs, and tanned sheep skins 2,384 tons valued at Rs. 114.80 lakhs. The year 1935-36 was more satisfactory than its recent predecessors, and the Madras tanner did comparatively well as a result of improved purchasing power in the United Kingdom. The leather situation at the end of the year appeared to be sound as production in the United Kingdom was on a fairly large scale, sales were being made steadily, and stocks were small, whilst the market generally was stronger than it was even a year ago.

41. *Tanned cow hides*.—The market opened dull at the commencement of the period under review when the price of Light Weight Prime Bangalore Cow Hides was 12½d. A better

all round demand was experienced in May and the market remained steady until September when the uncertain political situation caused the market to advance 15 per cent to 20 per cent within a month. The tanners' output was strongly competed for and the grade referred to rose from 12¾d. in early September to 15½d. a month later when it was found that the war scare, which had much affected the views of tanners, had been altogether exaggerated. The basis for the rapid advance in price was removed and as supplies were freely available, prices fell sharply and by the middle of November had almost returned to the level existing before the advance; Prime Bangalore 5/5½ lb. being quoted at 13d. The last quarter of 1935 was relatively quiet though the conditions of the trade were healthy, and 1936 opened with a steady demand and firmer tone. This firmness became accentuated in February and in early March political considerations, a demand for lining sides from America, the increased import duty in the United Kingdom on continental calf, and the increased call for raw materials in the Home market on account of Government orders combined to produce another boom better founded than that of September-October. Prices again shot upwards and Light Weight Prime Bangalores rose as high as 15¾d. Demand was less balanced than on the former occasion and certain weights remained rather slow. The year closed with a somewhat quieter feeling and prices had a slightly easier tendency. As in the previous year, there was a very good demand for the cheapest class of leather shipped, viz., Inferior Fifths and the supply of these was at times inadequate to meet the demand. Shipments were larger than in 1934-35 and averaged about 3,500 bales per month.

42. *Tanned skins*.—The feature of this trade during the year was the tendency for buyers in the United Kingdom to obtain their supplies by buying direct from Madras shippers, rather than through the medium of the public auctions held in London at intervals of seven to eight weeks, with the result that the quantities of tanned goat skins offered in January at the public auctions was the smallest for 12 years. There was also a reduction in shipments of tanned goat from Madras and an increase in those of tanned sheep, which tanners no doubt found more profitable. The price of tanned goat skins was at a low level at the beginning of the period under review and the active conditions which existed in the London market during the rest of 1935 caused an advance in values to take place. Skins of a standard mark and selection which were selling at 2s. 5d. per lb. in September had advanced to 2s. 9d. in October and were quoted about 3s. at the end of March 1936. A similar advance took place in all grades, but at the close of the period, buyers considered that prices were too high and demand was slower. At the beginning of the period under review prices for tanned sheep were unsteady, but a firmer tone soon set in. A comprehensive demand from the United Kingdom caused prices to advance steadily later in the year and

at the close a very high relative value prevailed. A standard mark of light weight sheep which sold in an assortment of 10, 20, 35, 35 at 2s. 11d. in May 1935 had buyers at about 3s. 9d. at the close of the official year. A particularly strong demand prevailed for common sheep of the Dindigul type and as supplies became more and more inadequate, the price of this tannage became out of proportion to its intrinsic value. The prospect for tanned sheep is good, but prices are at a rather dangerous level and may not be maintained.

43. *Tanned cow-calf skins.*—These experienced a very large rise in values and a parcel of standard assortment worth 19d. in April 1935 could be sold at 26d. at the end of March 1936. The enhancement of the import duty on chrome box and willow continental calf from 15 per cent to 30 per cent at the beginning of March 1936 had the effect of increasing demand from United Kingdom buyers for light kip leather from Madras and the price of calf skins at the close of the official year was higher than at any time in the last few years. Shipments were maintained at an average of about 220 bales per month which was almost exactly the same figure as in the previous year.

44. *Tanned buffalo hides.*—This class of leather was on a more stable price basis than other descriptions although there was a very steep advance in October. Supplies were larger in the first quarter of 1936 than had been the case in 1935, when the average monthly shipment was 227 bales, a maximum of 479 bales being reached in March 1936. A certain amount of business was done with New York in light weight buffs which assisted to maintain the price of this weight.

45. *Tanned buffalo calf skins.*—The price of this type of leather improved considerably and good business was done towards the close of 1935 and in the first quarter of 1936. In May 1935 a parcel of standard assortment was worth only 10½d. but in March 1936, the value was about 14d.

46. *Reptile skins.*—The trade in these skins has been very small and almost entirely confined to snake skins which have only been shipped in very small parcels.

47. *Finished leather manufactures.*—The support accorded to this industry by local markets was only moderate and confined to low priced grades of box sides. The local demand for glaze kid, however, was good throughout the year and both blacks and coloured skins have sold well, replacing imported leather. There was a steady demand from the United Kingdom for finished leather of Indian manufacture and prices have ruled firm. There was also a fair business done with various colonies in chrome tanned products.

48. *Sugar.*—The area planted with sugarcane up to 25th December 1935 has been estimated at 131,120 acres as compared with 122,470 acres for the corresponding period of the previous

year, representing an increase of 7.1 per cent. The final area for the previous year was 125,310 acres, and the estimate for that year fell short of the final area by about 2.3 per cent. The yield has been estimated at 360,410 tons of jaggery as against 320,940 tons of jaggery estimated in January 1935, an increase of 12.3 per cent. The final estimate for 1934-35 was 351,100 tons. Important increases in acreage were in the districts of Chittoor (+ 2,600 acres), North Arcot (+2,300 acres), Kistna (+ 2,000 acres), and Vizagapatam and Trichinopoly (+ 1,000 acres each). Imports of sugar amounted to 39,314 tons valued at Rs. 33.49 lakhs as compared with 49,793 tons valued at Rupees 43.43 lakhs in 1934-35. The average of the average monthly prices of Nellikuppam sugar declined slightly, as compared with the previous year, and prices of both South and North Indian sugars were below Java parity throughout the period under review. Apparently, the only way in which sugar prices in South India could be maintained at about the Java parity would be by the formation of a strong Marketing Board in Madras.

49. Sugar and its allied products have received two headings in the accounts relating to the Inland Trade of India, namely: "Sugar-refined and unrefined" and "Gur, rab, molasses, jaggery, etc.", and it has not been possible under this arrangement to distinguish between white sugar and gur, or as a corollary, to arrive at an estimate of the consumption of sugar in the Madras Presidency. The matter was taken up with the Director-General of Commercial Intelligence during the year, and it has been decided, in consultation with the Sugar Technologist of the Imperial Council of Agricultural Research, to substitute the existing head "Sugar—refined and unrefined" by "Sugar, all kinds." The revised head includes all sugar which is treated as such in ordinary commerce and comprises: (i) all imported sugar, (ii) sugar manufactured by central sugar factories in India, (iii) sugar manufactured by gur refineries in India, and (iv) sugar produced by khandsari factories. Figures for gur, rab, molasses, jaggery, etc., will continue to be shown under the existing omnibus heading. From 1936-37, therefore, it should be possible to estimate with a reasonable degree of accuracy, the consumption of sugar in the Madras Presidency. The production of cane and palmyra sugar in the Madras Presidency (excluding Mysore and Travancore) during the year 1935-36 was approximately 28,500 tons. The sugar production in South India (including Mysore and Travancore) in 1936-37 is likely to be more than half the total consumption in the Madras Presidency and the States of Mysore, Travancore and Cochin, as the Mysore production will be very much larger. There is scope for the further development of the sugar industry in the Presidency although in view of the uncertainty in regard to the future course of sugar prices, it is very necessary that any new factories that are set up should be of economic size. The difficulties attending the further development of the industry in the Presidency are (i) the comparative absence

of areas under cane sufficient in extent to support sugar factories of economic capacity, and (ii) lack of finance. The difficulty of finance is felt even by some of the existing factories. The possibilities of developing the cultivation of sugarcane in one or two areas of the Presidency with a view eventually to the starting of new sugar factories received preliminary consideration during the year. I have inspected a tract of land between the Cauvery and the Coleroon where sugarcane is already being cultivated to some extent, and consider that there are possibilities of bringing under the crop in that area, a considerable acreage, capable of supporting eventually a large size sugar factory, irrigation from the Cauvery and the Coleroon being supplemented when necessary by water from the Palavar spring channel which contains water throughout the year. Sub-committee No. III of the sub-committee of the Provincial Economic Council of Agricultural Development has recommended that an investigation of the possibilities of developing the cultivation of sugarcane in this area should be carried out. The question of establishing at Lalgudi in the Trichinopoly district, a sugar factory of 250-300 tons capacity, on a co-operative basis, was under investigation at the end of the year, and it is hoped that the project will materialise before long.

50. The department continued, during the year, to perform a good deal of advisory work in connexion with the development of the sugar industry, and was in close touch with the existing factories, and with persons who were considering the establishment of new factories. In the matter of efficiency, the progress made by the new factories during the year was disappointing, for, apart from the Bobbili and Hospet factories, the recovery of sugar was low owing partly, at least, to the inferior quality of the cane due to adverse seasonal conditions. It is always difficult to get the maximum efficiency from a sugar factory in the first season of its operation, and there is also a certain amount of difficulty in the initial stages in organising supplies of fresh cane of good quality in localities where no sugar factories existed before, and this was a factor in the poor recovery obtained in some of the cases. There were twelve sugar factories at work in the Presidency during the year. The factory of the Vuyyuru Co-operative Industrial and Credit Society, Limited, Vuyyuru, which has a crushing capacity of 850 tons sugarcane a day, commenced crushing on the 9th January and finished working on the 16th April 1936. The varieties of sugarcane grown by the members of the society attain their maximum maturity in the months of December and January, and as crushing was not commenced until January and a reasonable crushing capacity was not reached until the end of February, cane was crushed after inversion had set in. In consequence the recovery was as low as 6.9 per cent. The factory crushed 33,630 tons of cane from which 2,319 tons of sugar and 1,433 tons of molasses

were obtained. The factory of the India Sugars and Refineries, Limited, Hospet, worked for 119 days and crushed 26,245 tons of cane from which 2,363 tons of sugar and 1,029 tons of molasses were produced, the percentage of sugar recovery on cane being 9.005, and of molasses 3.921. The most successful of the new mills was the Sri Rama Sugar Mills, Limited, Bobbili, which worked for 129 days and crushed 16,954 tons of cane from which 1,585 tons of sugar and 500 tons of molasses were obtained, the percentage of sugar recovery on cane being 9.36 and of molasses 3.1. The financial results of the year's working are not available, but it is believed that a satisfactory rate of interest has been earned on the capital. The Coimbatore Lakshmi Sugar Mills, Limited, Podanur, worked for 114 days and crushed 4,097 tons of cane from which 331 tons of sugar were manufactured giving an yield of 8.07 per cent of sugar on cane. The Sri Ramakrishna Sugar Mills, Limited, Kirlampudi, worked for 110 days and crushed 6,073 tons of cane from which 404 tons of sugar were secured, the percentage of extraction being 6.65. The factory worked at a loss during the year. The factory of the Etikoppaka Co-operative Industrial and Credit Society, Limited, Etikoppaka, worked for 127 days and crushed 5,133 tons of cane from which 365 tons of sugar were obtained, the yield of sugar on cane working out to 7.11 per cent. On account of drought and heavy rains during the crushing season, the recovery of sugar was low and the factory worked at a loss. The Sri Ramakrishna Co-operative Industrial and Credit Society, Limited, Thummapala, was converted during the year, into a joint stock company styled the Vizagapatam Sugars and Refinery, Limited. The factory crushed 4,705 tons of cane from which 326 tons of sugar were obtained, giving a recovery of sugar of only 6.9 per cent. The two new 50-ton factories of the Madras Sugars, Limited, in the North Arcot district, and of the Kalyanpur Sugar Mills, Limited, in South Kanara district were under construction during the year and have not yet reached the stage of production. At the instance of the department, specially reduced rates for the transport of sugarcane seed and sugarcane were obtained in some cases, whilst a reduction in the freight rate on the transport of sugar from Bezwada to Madras was also secured.

51. *Oil-seeds—Groundnuts.*—The area and yield of groundnuts have been estimated at 2,492,500 acres and 1,143,400 tons, as against 2,323,300 acres and 920,260 tons in the previous year, an increase of 7.3 and 24 per cent respectively. Exports of groundnuts to foreign countries declined in quantity from 436,350 tons to 332,230 tons, or by nearly 24 per cent, but the value improved from Rs. 499.76 lakhs to Rs. 538.89 lakhs or by nearly 8 per cent. Owing to a short crop in India, it was generally expected at the beginning of the year, that prices of groundnuts would improve. This was justified to a certain extent and there was an improvement from the opening price of £12-16-3 per ton

f.o.b. to £14 in May, but prices receded to £12-5-0 in June consequent on the decree issued by the French Government doubling the duties on oil-seeds originating from countries other than the French colonies. In the second quarter of the year, under review, the price declined to £11-15-0, but the political situation in Europe becoming serious, buyers started covering themselves with the result that there was an advance in price to £12, and during the next few months there was a further appreciation to £13-15-0. When, however, it became evident that there was no immediate fear of the war spreading, the European buyers who had bought considerable quantities held completely off, and the price level receded to £11, a low record for the year. The month of December closed with a better tendency which was continued up to the last quarter of the year due to the fact that Germany bought a large quantity of Indian groundnuts and other oil-seeds owing to a general shortage of fats in that country. Sellers in India took full advantage of the buying interest in Europe during the last quarter of the year and disposed of large quantities, the price reaching £12-13-9, and closing steady at about £12. On the whole the period under review was more remunerative to growers than the previous year.

52. *Castor*.—The area sown with castor up to the 25th of November 1935 was estimated at 261,700 acres as against 289,200 acres for the corresponding period of the previous year, representing a decrease of 9.5 per cent. The yield has been estimated at 25,800 tons as against 26,100 tons in the preceding year. Exports of castor seed by sea declined in quantity from 34,666 tons to 18,385 tons or by 47 per cent, and in value from Rs. 41.78 lakhs to Rs. 27.09 lakhs or by 35 per cent. The United Kingdom took 8,854 tons valued at Rs. 12.85 lakhs, and France 5,242 tons valued at Rs. 7.81 lakhs.

53. *Oil-milling*.—The oil-milling industry does not seem to have made much headway during the year and the decided falling off in the demand for groundnuts for local consumption towards the end of the period under review seemed to indicate that oil mills were finding it difficult to sell their products locally at remunerative prices. An oil mill for pressing groundnuts has been started in Madras by a firm with world-wide connexions and the capacity of this mill, which contains a battery of expellers, is understood to be about 15 tons a day. A few mills were closed in the Coimbatore district owing to the low prices ruling for oil for internal consumption in relation to the prices offered for seed by groundnut exporters. The groundnut oil-millers in the northern districts continued to be affected by competition from the Hyderabad State. The mills on the West Coast would have fared badly, but for the import of Ceylon copra, as the West Coast production was restricted owing to the short crop. An enquiry conducted during the year has revealed that there are more than 20,000 country ghannies or village chekkus, worked by bullock power or by manual labour, pressing groundnut, castory, gingelly, illuppai,

pongam, margosa, kusum, copra, etc. These chekkus do not work throughout the year, but only on an average for two to three months, except in the neighbourhood of large towns. Imports of copra into the Madras Presidency increased from 5,101 tons valued at Rs. 5.62 lakhs to 7,044 tons valued at Rs. 11.57 lakhs. Imports of coconut oil declined in quantity from 650,139 gallons to 567,198 gallons, but increased in value from Rs. 4.80 lakhs to Rs. 6.97 lakhs. Prices of coconut oil were generally higher than those of the previous year rising from Rs. 73-7-0 per candy in April 1935 to Rs. 100-4-0 in January and closing at Rs. 98-7-0 in March 1936. Exports of groundnut cake declined from 49,512 tons valued at Rs. 30.36 lakhs to 38,745 tons valued at Rs. 24.28 lakhs. The question of the possibility of developing an export trade in groundnut oil has been under consideration for some time and it was further discussed with a well-known firm of exporters during the year, but it seems to be the case that no appreciable expansion of Indian groundnut oil exports can take place unless facilities are provided for exporting the oil in bulk from this country.

54. *Soap industry*.—Imports of all classes of soap into the Madras Presidency decreased from 1,624 tons valued at Rupees 12.48 lakhs to 540 tons valued at Rs. 7.19 lakhs. The value of imports of household and laundry soap declined from Rs. 4.71 lakhs to Rs. 0.19 lakhs, and, of toilet soaps from Rs. 7.66 lakhs to Rs. 6.86 lakhs. The quality of the toilet soaps produced in the factories in the Presidency improved somewhat during the year, although prices had to be reduced in order to meet the growing competition, the large factories in Bombay and Calcutta making strenuous efforts to develop their trade in the South. The washing soap made by the cottage industrialists is in good demand, but many of them experienced a difficult year owing to the increased cost of coconut oil, which is the chief basis in the process most of them employ.

55. *Cashewnuts*.—Exports of cashew kernels advanced from 5,785 tons valued at Rs. 61.12 lakhs to 7,673 tons valued at Rs. 96.76 lakhs. No figures are available in regard to the production of cashewnuts, but it is certain that the crop harvested in South Kanara in March-May 1935 was considerably in excess of any previous crop. This was owing partly to favourable weather conditions, but more especially to newly planted trees coming into bearing, and to greater attention having been paid to the older trees. Imports of raw cashewnuts from East Africa were unusually heavy during the year, and, probably accounted for about half the total shipments of cashew kernels. Competition in the cashewnut industry continues to increase and profit margins to decrease, but the majority of cashew kernel shippers benefited by the rise in United States prices, which took place from May to December, though during the last few months of the year, there was some reaction in values. The number of workers employed, chiefly women, continues to increase and the labour supply

is being expanded by considerable numbers coming into Mangalore from outlying villages. As only half the population of the United States of America is said to have taken to cashew kernels, as yet, the probabilities are that this industry has still further potentialities of expansion.

56. *Coir*.—The total exports of coir advanced from 622,732 cwt. valued at Rs. 79.19 lakhs to 681,288 cwt. valued at Rs. 87.01 lakhs representing an increase of 9 per cent in quantity and nearly 10 per cent in value. Coir yarn accounted for 599,612 cwt. valued at Rs. 60.18 lakhs. mats and mattings for 55,368 cwt. valued at Rs. 17.53 lakhs. and other sorts for 26,308 cwt. valued at Rs. 9.30 lakhs, of the exports. Exports of coir yarn increased by 50,000 cwt. in quantity and by Rs. 3 lakhs in value, and of other sorts by 16,000 cwt. in quantity and by Rs. 6 lakhs in value, but on the other hand exports of coir mats and mattings declined by 7,550 cwt. in quantity and by Rs. 1.35 lakhs in value. Although the volume of exports of coir yarn was maintained, prices showed an inclination to sag; and price margins have been finer than ever. Exports from Calicut during the year showed a falling off as compared with the two previous years and this may be ascribed to the financial difficulties which are involved in selling to countries such as Germany and Italy which normally are large importers of the product. Prices of first-grade fine unsoaked yarn declined from Rs. 32-8-0 per candy in April 1935 to Rs. 27 at the end of the year. Beypore yarn declined from Rs. 42-8-0 per candy in April 1935 to Rs. 36 at the end of the year, whilst Quilandi soaked yarn fell from Rs. 55 to Rs. 43, the latter an abnormally low price for this quality of yarn. The outlook for coir yarn appears to be rather uncertain owing to restricted imports into certain countries in Europe, and a falling off in demand from others. The United Kingdom continued to be India's best customer for coir mats and mattings. Many of the mat and matting producers are said to be trading at a loss, and even the few well-managed ones to be operating on the narrowest possible margins of profit.

57. *West Coast timber*.—The timber trade on the West Coast continued to be in a depressed condition during the year with very poor demand from Bombay and other markets where the off-take has declined considerably. Prices for sleepers have been reduced to an uneconomic level, the tenders accepted by the local railways leaving producers practically no margin of profit. Prices of most timbers remained at about the same level as in the previous year. There was an abnormal demand from France for rosewood, but business with Germany was possible only when buyers were prepared to purchase German goods of equivalent value. The production of teakwood which is used by Government and the railways was maintained, but the demand for white cedar and red cedar was intermittent. Prices of pillamarudu, poon, pali, and benteak showed no tendency to rise, and a certain amount of timber was cut from immature trees.

58. *Tiles*.—The tile industry experienced an unsatisfactory year owing to overproduction on the part of some of the factories which in turn necessitated resorting to price cutting in order to liquidate stocks. Unless there is some regulation of production, the position is unlikely to undergo any considerable improvement in the near future. There has been a reduction in the off-take of tiles in India, with the result that competition for shipment orders is extremely keen, and prices are somewhat unremunerative.

59. *Manures*.—Imports of manures (excluding oil cake) increased in value from Rs. 32.39 lakhs to Rs. 37.27 lakhs. The gradual increase in the imports of fertilizers is little short of remarkable, when it is considered that a decade or so ago, the consumption of imported chemical manures was practically confined to plantation requirements. There was a satisfactory and increasing demand for fertilizers for sugarcane, paddy, tobacco, and other crops. On the slopes of the Nilgiris, the off-take of fertilizers for potatoes was maintained. Fertilizers for tea were consumed only on a limited scale, but although tea estates have not yet recommenced manuring on any large scale, there are signs that the manuring of backward acreages and high grown quality teas will shortly be resumed. The demand for coffee manures fell off considerably owing to the decline in the market price of the crop.

60. *Chemicals*.—The demand for locally manufactured chemicals was good during the year, but prices, if anything, were slightly lower owing to the low quotations received from the Continent of Europe and Japan. Keen competition from Germany and Japan kept prices of chemicals, other than sulphuric acid and nitric acid, at a low level, though on the whole local manufacturers were fairly successful in holding the market against this competition. Imports under the head "Chemicals and Chemical Preparations" increased from Rs. 40.31 lakhs to Rs. 42.15 lakhs. The consumption of chemicals by the textile and soap industries was maintained and there was an increased demand from the tanning industry. Dyeing and tanning substances to the value of Rs. 44.35 lakhs were imported during the year, the consumption of dyes increasing further as a result of the expansion in the cottage dyeing industry.

61. *Cement*.—Imports of portland cement declined from 26,062 tons in 1934-35 to 21,020 tons during the year under review. The production of the Coimbatore Cement Company, Limited, increased from 16,768 tons to 56,247 tons and their despatches of cement from 13,877 tons to 59,065 tons. In order to meet the growing demand in South India, the company have decided to increase the capacity of their works from 60,000 to 100,000 tons per year and it is understood that the order for the necessary machinery and plant has already been placed.

62. *Match industry*.—The condition of the industry during the year was characterized by continued overproduction, and falling prices. The present production of factories in the Madras Presidency, plus the arrivals of matches from Rangoon, are still in excess of the market's normal consumption. It is estimated that the consumption of matches in the Madras Presidency is about 5,500 cases, converted into 40's, whereas the total manufacturing capacity plus the arrivals from Rangoon, Calcutta, and Bombay are estimated to amount to 6,500 cases monthly. The cottage factories continued to sell at very low rates, in some cases as low as Re. 1-4-0 and Re. 1-5-0 per gross for small size 40 sticks.

63. *Pepper*.—Exports of pepper to foreign countries declined from 60,681 cwt. valued at Rs. 18.88 lakhs to 24,939 cwt. valued at Rs. 7.07 lakhs. The 1935-36 Tellicherry crop amounted to about 7,000 tons which was 30 per cent below normal and the Alleppey crop to 13,000 tons, i.e., 10 per cent above normal. The total Malabar yield was about 10 per cent below normal. The industry remained in a depressed condition, prices declining steadily during the year, and it will be a long time before there can be a recovery from the serious position which resulted from the collapse of the London pepper pool in January 1935. There was an abnormal demand during the earlier part of the year from Italy, the only country which imports Tellicherry pepper regardless of price, but the outbreak of the Italo-Abyssinian war in October 1935 put a stop to exports to that country. There have been considerable imports of low-priced pepper into Bombay from Singapore, and the Dutch East Indies (Lampong pepper) since January 1935, mainly on the part of the Indian speculators, and the large stocks which remain on their hands in Bombay are acting as a depressing factor in the Indian market.

64. *Tea*.—There was an increase in the quantity and value of tea exported during the year from 48.14 million lb. valued at Rs. 425.73 lakhs in 1934-35 to 50.37 million lb. valued at Rs. 441.62 lakhs in the year under review. The United Kingdom took 46.54 million lb. and Ceylon 3.49 million lb. The third year of the scheme for regulation of exports has been completed and it would appear that the control of exports exercised under the scheme is at last commencing to take effect, stocks in the United Kingdom between February 1935 and January 1936 showing a reduction of 20 million lb. The market was weak at the commencement of the season, but gradually a better demand was noticeable in the London market, whilst the Indian market ruled fairly steady throughout the year. For the week ending 31st March 1935 the average price obtained for South Indian teas in the London market was 1s. 2d. per lb., whereas the average price for the week ending 31st March 1936 was 1s. 2d. per lb. The fate of the voluntary restriction scheme which restricts production had not been decided by the end of the year, but it is hoped and expected that

an agreement will eventually be reached. In the event of producers not agreeing, by the necessary majority, to restrict production, prices in India would almost certainly register a substantial fall.

65. *Coffee*.—Exports of coffee advanced from 140,579 cwt. valued at Rs. 72.50 lakhs to 213,654 cwt. valued at Rs. 101.23 lakhs, or by about 52 per cent in quantity and by 40 per cent in value. Of the quantity exported, France took 82,553 cwt. valued at Rs. 35.87 lakhs, and the United Kingdom 71,034 cwt. valued at Rs. 37.16 lakhs, while smaller quantities were taken by Norway, Belgium and Germany. The crops from the southern districts, i.e., Nilgiris, Shevaroy, Anamalais, Nelliampathies, Palnies, and Kanan Devan Hills, were estimated at about 4,900 tons for 1935-36 against 2,680 tons actually harvested during the preceding season. Prices of Mysore and Coorg coffee declined steadily throughout the season from the opening point of Rs. 35 to a closing price of Rs. 25 per cwt. for fair average quality assortment. Much of the coffee shipped to London remains unsold and is meeting a very poor market. The quality of the 1935-36 Mysore and Coorg crop was rather below average, and it was noticeable throughout the season that Mysore and Coorg coffees in Continental markets did not obtain the usual premia over Central American and Brazilian coffees. Relatively the market for native coffee at Mangalore was much better than the demand for plantation coffee, France, as usual, being the chief buyer. Prices, however, followed a course similar to that of plantation coffee, the market opening at Rs. 155 and closing at Rs. 125 per candy. Coimbatore is the chief market for coffee from the southern districts, and in common with the position obtaining in the Mangalore market, prices for all qualities ruled very low during the year, the market for Nilgiri assortment opening at Rs. 36, and falling steadily to Rs. 31 per cwt. The coffee industry generally is in an extremely depressed condition and many South Indian estates are working at a loss.

66. *Rubber*.—Exports of rubber increased from 11.60 million lb. valued at Rs. 37.43 lakhs in 1934-35 to 17.96 million lb. valued at Rs. 56.68 lakhs in the year under review. The value of exports to the United Kingdom declined from Rs. 23.22 lakhs to Rs. 20.98 lakhs, but shipments to Ceylon increased from Rs. 8.40 lakhs to Rs. 17.56 lakhs, and to Italy from Rs. 2.79 lakhs to Rs. 7.44 lakhs. The rubber regulation scheme which was introduced in June 1934 appears to be working smoothly and according to plan. The average prices for 1933, 1934, and 1935 were $3\frac{7}{32}d.$, $6\frac{5}{32}d.$ and $6d.$ per lb., respectively, whilst the price in March 1936 was $7\frac{1}{16}d.$ per lb. World stocks during the year 1935 were reduced by 68,000 tons. The export quota has since been increased by 5 per cent (i.e., from 60 to 65 per cent) and it remains to be seen how this will affect the world stock position.

67. *Miscellaneous.*—Exports of sandalwood oil increased in quantity from 3,183 gallons to 3,273 gallons, but decreased in value from Rs. 3.39 lakhs to Rs. 2.83 lakhs. Exports of lemon grass oil increased from 77,790 gallons valued at Rs. 11.77 lakhs to 98,877 gallons valued at Rs. 12.60 lakhs, and owing to the large crop, prices were forced down from 2/6d. to 1/4d. per lb. c.i.f. The ginger crop was again a small one; exports were on a restricted scale, and prices advanced from 60s. to 80s. per cwt. There were again no shoals of sardine in West Coast waters and the major portion of the fish oil and guano industry remained inactive. The cardamom crop was short, but the quality was good, and, in consequence, there was a considerable improvement in the market after the opening of the season. The aluminium hollow-ware industry passed through another year of depression and the consumption was still only about 40 per cent of normal, for although prices of brass and copper increased slightly, the advance was not sufficient to stimulate the aluminium market to any great extent, and until prices of brass and copper more closely approach the pre-war level, aluminium will not return into general use. Imports of stoneware into the Presidency have practically ceased, the demand being met by local potteries. The slate manufacturing industry showed some advance during the year both in respect of the quality of slates and in the method of framing. Around Markapur, the splitting, polishing and mounting of slates continues to be conducted on a cottage industry basis, but the industry has expanded and new centres of slate manufacture near Markapur are springing up. The slate manufacturing factory at Kallai has also developed during the year and is now producing slates equal in quality to the best German slates and at competitive prices. It is hoped that in a year or two, this factory will be able to supply the entire local requirements of slates. There was no improvement in the cigar manufacturing industry during the year and no development in the export trade can be expected unless the duty on importations into Great Britain is considerably reduced, or the duty is levied on an ad valorem basis instead of under the present system of assessment by weight.

KERALA SOAP INSTITUTE, CALICUT.

68. *Staff.*—M.R.Ry. A. K. Menon, B.A., continued as Superintendent of the Institute throughout the year. Mr. Menon continued to be a member of the Indian Oil Seeds and Vegetable Oils Committee of the Imperial Council of Agricultural Research, and although no meeting of the committee was held during the year, he submitted several notes and compiled some statistics in regard to the oil seeds industry for the information of the committee. Mr. Menon attended the first meeting of the Oils and Soap Committee of the Industrial Research Bureau held at Calcutta on the 25th and 26th November 1935. Mr. Menon was appointed a member of the Oil Committee of the Annamalai University and attended one meeting at Madras and another at Chidambaram. It

is understood that a report in regard to the possibility of introducing a course in Oil Technology in the University was submitted by the Committee for the consideration of the Syndicate.

69. *Production and accounts.*—It was mentioned in the report of the previous year that trade conditions were unsatisfactory from the standpoint of the soap manufacturer and that, despite the favourable level of raw material prices, the margin of profit was small owing to the intensive competition that had to be faced both from the organized factories and the ever-growing number of small establishments. Conditions during the year became still more difficult since the competition from private factories, both large and small, continued to be severe rendering it necessary in some cases to reduce prices, despite the pronounced rising tendency of raw material prices. A form of competition which it is difficult for small factories, such as the Kerala Soap Institute to meet, is the gift coupon system introduced by some of the larger manufacturers—Indian and foreign. In the case of one large manufacturer, one bar of washing soap is given free to a purchaser of one cake of toilet soap, a bottle of perfume with a box of toilet soap, and towels for empty cartons of washing soap. This form of sales propaganda makes a strong appeal to the consuming public, and places the small manufacturer, possessed of limited financial resources, under a considerable handicap in developing his business. The total output declined from 170 tons in the previous year to 163 tons in the year under review, but the production of toilet soaps increased from 39 to 61 tons. There was, despite the difficult conditions referred to, a gratifying improvement in the sales which increased in value from Rs. 1,38,406 to Rs. 1,66,528. The result of the year's working subject to audit, was a net profit of Rs. 15,214 as compared with Rs. 6,659 in the previous year.

70. *Agencies.*—The volume of business introduced by the agents and stockists during the period under review showed an increase over that of the previous year in spite of the severe competition encountered in all lines. The Madras agent introduced the largest volume of business, whilst the turnover of the West Coast, Madras, Bezwada and Colombo agents also increased. Mr. S. Ch. Mallaparaju, the agent at Bezwada, evinced a great deal of personal interest in the matter of developing sales, as a result of which, his turnover quadrupled during the year, and his agency jurisdiction has been extended. During the year new agents were appointed for Travancore, Hyderabad and the Central Provinces, whilst arrangements were in progress at the end of the year for effecting sales through retail dealers in Calcutta. The sales of Kerala Family soap, which was introduced during the previous year, improved considerably. It has not been possible to introduce the 'Silver Jubilee Soap' to the market owing to the delay in procuring suitable cartons and it is proposed to introduce a new 'Coronation Soap' in place of the 'Silver Jubilee Soap' to commemorate the Coronation of His Majesty King Edward VIII next year sufficiently in advance of this historic event.

71. *Visits to important markets.*—During the year, the Superintendent visited Madras, Kumbakonam, Tanjore, Trichinopoly, Kodaikanal, Madura, Ootacamund, Coimbatore, Nilambur, Malapuram, Tirupati, Chittoor, Madanapalle, Bangalore, Mysore, Trichur, Cochin, Ernakulam, Alleppey and Calcutta, with a view to developing sales of the Institute's products. There can be no doubt that, in order to obtain the best results from the agents and stockists, it is necessary to visit them periodically in order to discuss local market conditions and to encourage them to develop sales. In the course of his tours the Superintendent visited and inspected a number of soap factories and advised the owners how to improve their methods and products, whilst several of the ex-students of the institute who sought advice on various matters by correspondence, were given the necessary assistance.

72. *Training of apprentices.*—Thirteen students were under training in the Institute during the year. Of these 12 underwent the ordinary course and one the short term course. Many of the students have, on the completion of their training, either secured employment in soap works or started factories of their own and, so far as information is available, 54 out of the 88 students trained, are engaged in the soap-making and allied industries. There can be no doubt that the training in soap manufacture afforded by the Institute has had a very beneficial effect on the industry in general.

73. *Laboratory.*—In order to maintain the uniformly high standard of the Institute's products, a careful examination of the various raw materials and of the finished products in different stages of manufacture is necessary, and during the year 575 analyses were carried out in the laboratory of which 430 were of raw materials, such as, oils, tallow, rosin, caustic alkali, essential oils, etc., and soaps in different stages of manufacture, and 145 were of soaps, oils, tooth-powders, dental creams and other toilet articles received from agents and stockists, ex-students, and members of the public, or collected by the Superintendent of the Institute in the course of his tours. Certificates of analyses were issued in respect of four products. The students continued to receive training in the laboratory in the practical testing of oils and soaps.

74. *Research and experiments.*—The following is a brief summary of the research and experimental work carried out in the Institute during the year :

(i) *Oil refining.*—The refining of coconut oil and groundnut oil in the oil refining plant was continued. The standardized refined and deodorized oil product which had been marketed during the previous year under the trade name of 'Kokol' continued to be supplied to hospitals, clubs and boarding houses. A quantity of refined cotton seed oil, which had been originally imported for canning fish, but had gone rancid, was reconditioned for a private factory in Malabar.

(ii) *Oil-seeds.*—A study of safflower, soya bean, niger seed, and palm nut, was conducted during the year.

(a) *Safflower.*—This is cultivated as a late summer crop in the Ceded districts and in the Bombay Presidency, where the oil is used for culinary purposes in preference to groundnut oil. The seeds are small (100 weighing 5.2 grammes). The yield of oil on extraction with petroleum ether has been found to be 35.4 per cent of the total weight of seed, or 65 per cent of the weight of the kernel. It is a light yellow oil with an agreeable taste and no characteristic smell, and may be considered a good oil for salad purposes for those who do not like the flavour of coconut oil, sesame oil, or groundnut oil. The oil has an acid value of 0.9 and a saponification value of 192.5.

(b) *Soya beans.*—The seeds tested were derived from Baroda and the Agricultural Research Station, Aduthurai, in the Tanjore district. The former is the round yellow variety having an oil content of 18.5 per cent while the Tanjore variety showed an oil content of 13.5 per cent on extraction with petroleum ether. Various methods of pressing were tried, but the yield of oil was poor, and the oil content of the seed will have to be considerably improved before it can be used for oil pressing.

(c) *Niger seed*—(*Niger ginzotica abyssinica*).—This seed is cultivated in Ganjam and other northern districts and is largely exported. It is small in size (100 weighing 0.36 grammes) and is black in colour. Extracted with ether, it showed an oil content of 43.3 per cent. It has an acid value of 1.6 per cent, a saponification value of 190.5, a good taste, and no distinct colour.

(d) *Palm nut.*—The fruits were received from the Agricultural Farm at Trichur in bunches of 600 to 700 on one spathe. The average weight of a dried fruit with the pulp is 4.6 grammes and the weight of the kernel is 0.85 grammes, the latter having an oil content of 41.5 per cent. The yield of oil from the outer pulpy fibre was found to be 1.2 per cent, whilst the kernel oil has an acid value of 1.0 and a saponification value of 248.0. The oil is similar to coconut oil in colour, consistency, smell, and other properties. The comparatively small production of coconut oil in India and the steadily increasing consumption of it renders the question of developing the cultivation of the oil palm in India a matter of considerable importance.

(iii) *Groundnut sludge.*—This is produced when groundnut kernels are crushed in expellers. It varies from 1 to 3 per cent according to circumstances, such as, the pressure applied, the quality of the kernel, etc. It consists

of the fine meal of the kernel mixed with a large amount of oil and cannot be repressed or used as oil or cake. The quantity of sludge available from expellers in this Presidency is estimated at from 2,000 to 3,000 tons. Methods of converting the sludge into washing soaps and sapon soaps were studied during the year and the results of the preliminary trials have been fairly successful.

(v) *Miscellaneous*.—A few experiments were conducted in regard to the possibility of increasing the digestibility of groundnut cake as a human and cattle food by subjecting it to chemical treatment. The experiments initiated with a view to devising a mechanical roaster for roasting the cashewnuts prior to shelling were continued during the year with, on the whole, satisfactory results, and a model suitable for demonstration purposes is being constructed. An investigation was also conducted in regard to the utilization of the rind of cashewnuts for insecticidal soaps. The preparation of yeast (*Saccharo macescerevisa*) and the preparation of ergosterol for the manufacture of Vitamin D were also attempted, but the work had not advanced beyond the preliminary stage by the end of the year. Extracts were prepared from various plants, roots, etc., used in the preparation of hair oils and skin lotions, and samples of hair oils and germicidal soaps containing these extracts were made and are now in process of testing. The chief substances so far investigated are: *Lawsonia alba* (henna), *Hydrocotyl asiatica* (brami), *Acacia concinna* (cheeni), and *Cosenium fennes tratum* (colomba root).

75. *General*.—An enquiry was made into the oil crushing industry of the Province, and statistics were called for from the District Collectors in regard to the mills worked by power, and the country chekkus or ghannies worked by bullocks or by manual labour. The statistics collected have now to be verified and tabulated with reference to their number, capacity, description, quantity of the various seeds crushed, etc. The Institute participated, as usual, in a considerable number of exhibitions, as well as in the Health and Baby Week celebrations at 35 centres and secured a number of awards in the shape of gold medals or certificates of merit. A large number of enquiries in regard to the manufacture of soaps, equipment of soap factories, and various problems connected with the oil and allied industries were received and answered during the year, of which considerations of space will admit only of a reference to three. A firm in Madras was supplied with information in regard to a simple method of detecting adulteration in groundnut oil and also for reducing the free fatty acids. Information in regard to the determination of the presence of vitamins in fish oil was communicated to a firm on the West Coast. An inquirer was supplied with information in regard to a suitable method of purifying genuine, but old ghee, in order to recover its sweet flavour and hardness.

A scheme for the conversion of the Kerala Soap Institute into an Oil Technological Institute was forwarded by Government during the year for the consideration of the Imperial Council of Agricultural Research. Under this scheme, the facilities afforded by the research and instructional side of the Institute will be placed at the disposal of the Governments of Bombay, Hyderabad, Mysore, Travancore and Cochin, and students will also be admitted from these areas on equal terms. The scheme as drawn up will therefore operate for the benefit of the whole of Peninsular India. The Imperial Council of Agricultural Research have been invited to contribute a subsidy of Rs. 21,300 per annum for a three years' programme. The scheme was in the first instance placed before the Provincial Research Committee which recommended it to the Imperial Council of Agricultural Research.

TEXTILE SECTION.

76. *Staff*.—Mr. D. M. Amalsad continued as Assistant Director of Industries (Textiles) and Principal of the Government Textile Institute, Madras, throughout the year.

77. *Grant-in-aid by the Government of India for the development of the handloom weaving industry*.—The scheme referred to in last year's administration report, which was drawn up by the department and received the approval of the Government of India, provided in essence for the setting up of a central provincial co-operative society in Madras for developing co-operative buying and selling on behalf of the handloom weavers, with a number of district primary production societies linked to it, and later on for the installation of a power-driven calendering plant so as to permit of the finishing of handwoven cloths, and of the creation of an increased demand for them. The grant has been utilized to provide a subsidy to the Madras Handloom Weavers' Provincial Co-operative Society, Limited, which was registered during the year with an authorized capital of Rs. 5 lakhs divided into 10,000 shares of Rs. 50 each. The by-laws of the Provincial Co-operative Society were drawn up, and the objects of the Society were brought to the notice of persons interested in the handloom weaving industry who were invited to apply for membership in the prescribed form to enable the Director of Industries to move the Registrar of Co-operative Societies to register the Society under the Madras Co-operative Societies Act of 1932. As soon as the required number of signatures had been received arrangements were made for the Madras Handloom Weavers' Provincial Co-operative Society, Limited, to be registered. The orders of Government nominating the members of the Board of Directors of the Society for the first year were received in July. The Provincial Co-operative Society commenced business on the 12th of August 1935, on which date the first meetings of the general body and of the board of directors were held. The Secretary and Marketing Officer of the Society were selected, and they took charge of their respective duties on the 16th of September 1935.

The centres of operation in the districts were decided upon and the six supervisors of production societies, who were appointed in the middle of September, joined duty on various dates in that month. When the Provincial Society was established there were 29 primary weavers' production societies in the Presidency but many of them were not engaged on actual production, whilst several were dormant, and others were on the verge of liquidation. The supervisors of production societies, with the assistance of the officials of the Co-operative Department, organized eight societies, revived certain societies, and converted the existing weavers' credit societies into weavers' production societies. At the end of the year there were on the rolls of the Provincial Society, 87 weavers' co-operative societies, 29 individual members, and eight firms. One of the first questions to receive the consideration of the Provincial Society was necessarily that of yarn supply, and five mills in the Presidency agreed to the conditions of supply laid down and undertook to supply yarn to the primary weavers' societies on the guarantee of the Provincial Society. Guarantees to the extent of Rs. 25,070 were given in respect of 16 societies and yarn to the value of Rs. 5,000 was supplied to them by the mills during the year. On the recommendation of the Registrar of Co-operative Societies and the Deputy Registrars of Co-operative Societies, subsidies were sanctioned to 25 production societies, and Rs. 1,958 was disbursed in this way during the year. With a view to popularising the handwoven fabrics produced by the weavers' societies in the Presidency and to advertise the activities of the Provincial Society, a range of handwoven cloths produced by the former were exhibited at the Madras Park Fair in December 1935. The correct measurement, close texture, and fast colours of the fabrics produced by the primary societies were appreciated by the public and cloths to the value of Rs. 900 were sold at the Exhibition, whilst a gold medal was awarded to the Provincial Society for the excellence of its exhibits. A cloth designer has been appointed by the Provincial Society and endeavours will be made to introduce new designs, as also to reduce the cost of production of hand-woven cloths though it remains to be seen to what extent this will prove to be possible. The crux of the whole problem of handloom weaving is marketing, and in order to popularise hand-woven cloths among the wholesale dealers and the public and to find an outlet for the cloths produced by the primary weavers' societies, it was found necessary towards the end of the year to open an emporium at Madras. It is hoped that the venture will receive the sympathy and support of the merchants and the general public. Though the authorized share capital of the Provincial Society is Rs. 5 lakhs, the paid up share capital at the end of the year was only Rs. 14,200, and unless members of the general public, who are interested in the amelioration of the condition of the handloom weavers, come forward to subscribe for shares in the Provincial Society, it will not be possible for the Society to develop its operations in the manner originally contemplated and for the full benefit

to be derived from the subsidy granted by the Government of India. In G.O. Ms. No. 315, dated 27th of February 1936, Government accepted my proposal that the administration and control of the grants-in-aid to the handloom industry provided by the Government of India, and of the Madras Handloom Weavers' Provincial Co-operative Society, Limited, in relation to it, should be transferred from the Industries to the Co-operative Department, the Director of Industries and his staff giving the requisite technical advice and assistance to the Co-operative Department. When there exists a special department of Government to supervise the working of co-operative societies, it hardly seemed advantageous to entrust the working of a particular society to another department, and as the question of finance was becoming all important, there was obviously much to be said in favour of vesting the control of the scheme in the Registrar of Co-operative Societies, who is not only familiar with the technique of co-operative finance, but is also in a much better position to control the co-operative society on behalf of Government to the extent to which control is necessary or practicable. It was also considered that the supervision of the district supervisors of production societies by the officers of the Co-operative Department would be facilitated by the transfer of the control of the Provincial Society from the Director of Industries to the Registrar of Co-operative Societies. The Government of India grant for 1934-35 and 1935-36 was Rs. 26,500 and Rs. 59,500 respectively, and an amount of Rs. 21,831-10-0 had been drawn by the Provincial Society up to the 31st March 1936.

78. *Government Textile Institute.*—The Institute continued to provide the usual courses of instruction, namely the supervisor course, the artisan course, and the cotton power spinning course for the benefit of mill apprentices, in addition to a special course in sericulture and ericulture. On the 31st of March 1936, there were 88 students undergoing training in the Institute, 37 in the supervisor course (first and second years), 34 in the artisan course, and two in the special sericulture and ericulture course, whilst 15 mill apprentices underwent training in the power spinning course. The candidates admitted into the Institute hailed from 16 districts in the Presidency. In order to supplement the training afforded to pupils in the Textile Institute and to fit them better for subsequent employment, the mills in the Presidency have been requested to entertain as apprentices, past supervisor pupils of the Institute who may apply to them for admission. With a view to affording facilities for the training of suitable candidates for instructorships in textile schools, Government approved my proposals for the institution of a pupil teacher's course at the Institute with effect from the school-year 1936-37. The course will extend over one school year and selected candidates who have successfully undergone the supervisor's course in the Institute will be admitted to the training class. Three pupils will be taken every year and each will be paid a stipend of Rs. 15 per mensem for ten months.

The pupil teachers will specialize in the teaching of all the branches of the textile industry as provided for in the Textile Institute. They will assist the demonstrators and lecturers in the conduct of the instructional classes, acquaint themselves with their work, and also take classes in their absence or under their guidance.

79. *Aided textile schools.*—The aided schools devoted to textiles continued to be under the supervision of the Assistant Director of Industries (Textiles). An amount of Rs. 18,425 was sanctioned as maintenance grant to the textile schools, whilst a sum of Rs. 1,284 was disbursed as capitation grant. Equipment grants were given to the amount of Rs. 447.

80. *Research work.*—The small jacquard machine of 32 hooks for weaving ribbons and extra border design with gold lace and silver lametta, which had been constructed in the previous year, was perfected during the period under review. The reversing motion for controlling ground healds in a jacquard loom weaving sarees has been modified from a system of dead weights to one of suitable roller movement. A beaming machine suitable for preparing short warps for tablet looms, a cheap tablet loom for weaving counterpanes, a domestic foot silk-reeling machine with single reel, and an improved silk twisting machine with six spindles, were constructed at the Institute during the year. Experiments in artificial silk sizing were conducted, and samples of artificial silk hank-sized by the hank sizing method and of artificial silk warp sized by the bobbin-sizing method, were prepared for the benefit of a firm at Trichinopoly. As stated elsewhere in this report, experiments in the dyeing of palmyra leaf were carried out and dyed samples prepared for the fancy basket suppliers to the Victoria Technical Institute, Madras. Experiments in dyeing silk for gold thread manufacture were also successfully conducted.

81. *Assistance to jails.*—As in previous years, visits to the textile manufacturing sections of the jails and the provision of technical advice in regard to their working formed part of the work of the Textile branch. A suitable type of sizing machine for the Coimbatore Central Jail, and woollen warping mill for the Bellary Central Jail, were selected. The Central Jails, Coimbatore, Trichinopoly, Camanore and Bellary were visited by the Assistant Director of Industries (Textiles) during the year. A demonstrator from the Textile Institute was deputed to Bellary to assist the jail authorities in the erection of the wool spinning plant in the new premises.

82. *Powerloom weaving.*—As a result of the availability of electric power in several districts of the Presidency, the setting up of textile concerns of various descriptions is receiving an impetus, and it is desirable that facilities should be afforded in the Textile Institute for the training of students in power loom weaving so

that when they leave the Institute, they may not be at a disadvantage if they have to seek employment in mills. It would also be an advantage for the Institute to be able to demonstrate to small capitalists the advantages of power loom weaving under certain conditions. An offer of Messrs. Volkart Brothers, Madras, to place a power loom and accessories at the disposal of the Textile Institute for demonstration purposes was gratefully accepted during the year, and as soon as financial conditions permit, it is hoped that it will be possible to equip and organize a proper power loom section of the Institute.

83. *Difficulties of handloom weavers.*—In recent years handloom products have had to face increasing competition from cheap imported cloth and Indian mill-made fabrics. In November, the Collector of Salem reported that there was considerable unemployment among the handloom weavers of Salem said to be caused by the increasing influx of Japanese gadas for conversion into dyed sarees. The Assistant Director of Industries (Textiles) and myself visited Salem and I submitted a report to Government embodying the results of my enquiries. Subsequently, endeavours were made to switch the Salem weavers on to the manufacture of other descriptions of cloth, but up to the present no progress can be recorded in this direction. The difficulties with which the handloom weavers of Salem are at present confronted are more or less similar to those which the handloom weavers throughout the Presidency are meeting with. Up to comparatively recently the handloom weaving industry appears to have held its own fairly well, but there is ground for apprehension that from now onwards, the industry may find it increasingly difficult to maintain its position in face of the growing competition of cheap Japanese cloth, of cloth from Bombay and Ahmedabad, and of cloth produced by the new weaving mills that are being set up in South India. And it may be found necessary, sooner or later, to effect some adjustment of the spheres of production of the power weaving mill and the handloom, and regulation of the classes of fabrics to be produced by each. The justification for any such arbitrary interference with production and trade would lie in the vital importance of the handloom weaving industry, and in the fact that if the industry disappears or is seriously weakened, there is nothing to take its place in the economy of this country. The importance of the handloom weaving industry of this Presidency will be evident when it is stated that it is over four times as important as the power loom industry both in respect of production and value, and many times more important in respect of the amount of employment which it provides. Although reports of serious unemployment amongst the handloom weavers were received from weaving centres during the year, there does not appear to have been any falling off in the consumption of yarn (by weight) by the handloom weavers. For, the consumption of yarn by the handloom weavers of the Presidency during the year ended 31st March 1936 was 83.4 million lb. as compared with 78.8 million lb. in

1934-35, 72.6 million lb. in 1933-34, and an average annual consumption of 59 million lb. in the decade ending with the year 1920-21. No entirely satisfactory explanation of the apparent paradox of increasing yarn consumption and growing unemployment is forthcoming, although it seems probable that owing to the depression in agriculture more people have taken to handloom weaving, and that there are now more handloom weavers than there is work for. There is the possibility also that the handloom weavers are now weaving more coarse cloth. A survey of the production, marketing, and consumption, of the cotton handloom products of the Presidency with special reference to the economic condition of the handloom weaver, as a preliminary to the rationalization of the industry, seems to be indicated.

84. *Special Tariff Board.*—During the year, a Special Tariff Board was constituted by the Government of India for the purpose of enquiring into the position of the Indian textile industry with reference to the then existing duties on imports from the United Kingdom. I submitted to the Board a memorandum on the handloom weaving industry of the Madras Presidency, in which, besides making certain recommendations in regard to the duties on imports of cotton cloth and yarn from the United Kingdom, I suggested that if the handloom weaving industry is to be organized on a broad basis, it will be necessary to provide a fund from which the development of the industry could be financed. The necessity of providing assistance to the weaker section of the textile industry has been recognized by the Government of India in providing a subvention for the development of the handloom industry. But the industry is of such magnitude and importance that the funds which the Government of India are able to provide are insufficient to enable the problems which face the handloom industry to be tackled on a sufficiently broad basis. It was suggested therefore that a small additional import duty of one pie per pound on yarn and cloth imported from all countries, should be imposed, and a cess of one pie per pound levied on every pound of yarn manufactured by mills in India, an equivalent rebate being allowed on yarn exported from this country, the revenue from these duties to be distributed among the various provinces in proportion to their population and yarn consumption. In addition to the memorandum which I submitted to the Special Tariff Board, the Assistant Director of Industries (Textiles) forwarded a statement embodying his answers to the supplementary questions in regard to the handloom industry. The Assistant Director of Industries (Textiles) and myself had an informal discussion with the members of the Special Tariff Board on the 14th November, and they also visited the Textile Institute a few days later when they inspected a wide range of the handloom cloths produced in the Presidency.

85. *Miscellaneous.*—A 100 hooks jacquard machine was lent or hire to a weaving establishment at Mangalore. The two departmental sizing machines continued to work at the P.S. G. & Son

Charity Industrial Institute, Peelamedu, Coimbatore and the London Mission Boys' School, Erode respectively. Assistance was rendered to the East African Government in regard to the purchase of a set of appliances, consisting of a peg-warping board, tablet loom, and cottage silk-reeling machine. In connexion with the grant-in-aid for the development of the handloom weaving industry, referred to in paragraph 77 of this report, a census of handlooms and appliances was completed by the Revenue authorities, and the statistics embodying the returns received were compiled by the department and communicated to the Government of India. Proposals were submitted to Government during the year for conducting at the Textile Institute experiments in connexion with the manufacture of gold-thread, and the necessary provision on this account has been included in the budget estimates for 1936-37. As soon as the machines for flattening the silver wire, twisting the silk, and gilding the thread have been received, the experiments will be started.

SERICULTURE.

86. Mr. K. T. Achaya continued as Sericultural Expert throughout the year. The Sericultural Expert toured for 36 days and visited all the important sericultural centres in the Presidency. In G.O. Ms. No. 1606, Development, dated 16th November 1935, Government approved my proposal that the headquarters of the Sericultural Expert should be changed from Madras to Kollegal, and this was given effect to shortly after the close of the year. The transfer of the Sericultural Expert to Kollegal will enable effective supervision to be exercised over the production, testing, and distribution of disease free seed under the Government of India subvention scheme, and the effect of the operations on the economic condition of the rearers to be closely watched.

87. *Government of India grant.*—The scheme for the production and distribution of disease-free 'cellular' seed, and for the conduct of research on silkworm diseases, sanctioned by the Government of India was proposed to be given effect to from the 1st of August 1935, but owing to the delay in promulgating the special rules governing the recruitment of the staff, the several posts could not be filled up until later in the year. A few candidates for the posts of moth testers, operatives on moth testing, and mulberry cultivators were, however, given some preliminary training in microscopic work in advance, so that no time was lost when the appointments were made. For the *Peripatetic Rearing Party*, Kollegal, nine additional moth testers were appointed from the 25th of November 1935 and after receiving the necessary training they were placed in charge of circles, the Kollegal taluk being split up into 15 circles, each in charge of a moth tester. The new moth testers tested 148,979 disease-free layings, and with a little more experience should do well. One *aided grainage* was started in the village of Chilukvadi at the end of November, and 13,805 disease-free layings were tested by the end of the year. At the *Hosur*

farm, an area of 13 acres of land was fully grown with mulberry and yielded leaves, this farm produced 119,089 disease-free layings during the year, and is expected to supply its full quota during 1936-37. At the *Palmaner farm*, an area of five acres of land was leased in December, but as the mulberry has only just been planted, it will be some time before this farm can produce its full quota of disease-free layings. An area of 5.32 acres of mulberry was leased for the *Thadaguni farm* and five more acres have yet to be leased. It has not been possible to lease a larger area owing to the paucity of suitable gardens within a reasonable distance of the farm, but this difficulty is being overcome temporarily by purchasing leaves, and when necessity arises, 39,207 disease-free layings were produced in the farm, and it is hoped that the full quota will be worked out during the year 1936-37. A private farm at *Vadakkulam*, Tinnevely district has been recognized under the subvention scheme and will be given a bonus on tested layings; but no supply of disease-free layings was made from this source during the year.

11872 Pathology Assistant. provided under the Government of India subvention scheme, who was selected by the Madras Services Commission, joined duty on the 14th of December 1935, and to enable him to acquaint himself with the sericultural conditions in Kollegal taluk, he was deputed to work in Thadaguni farm which is located in the heart of the Kollegal silk-worm rearing villages. The Pathology Assistant also spent a month in the Coimbatore Agricultural College in order to study the laboratory methods practised in the entomological and psychological sections as a preliminary to setting up a small laboratory in Kollegal. In addition to observing the village rearing conditions, the Pathology Assistant conducted, with the assistance of the Farm Manager, Thadaguni, one complete rearing with ten layings of seeds fully pebrinized from a pebrinized lot of seed cocoons, and ten layings of tested and disease-free seed from the same pebrinized lot. These experiments yielded interesting results and will be continued. Worms will be reared in different places in order to determine whether heredity or contamination is the cause of further pebrinization, although disease-free layings obtained even from a pebrinized lot have yielded satisfactory rearing results. A second experiment went further and showed that tested layings from the same pebrinized lot reduced the percentage of pebrine from 20 per cent to 4 per cent in the course of three generations. This experiment will be continued in order to ascertain whether the lot can be made perfectly pebrine free. The amounts provided under the Government of India scheme for non-recurring expenditure, namely, Rs. 6,300 for microscopes, tin conicals, and other accessories, and Rs. 1,000 for the purchase of apparatus and fittings for the laboratory, were fully spent. Under recurring expenditure, an amount of Rs. 2,547 had been spent by the end of the year.

88. Peripatetic Rearing Party.—The number of layings tested by the party increased from 961,588 in the previous year to

1,102,049 in the period under review. The bulk of the work was carried out by the old moth testers as the newly entertained operatives were new to the work and lacked the necessary experience. The layings tested by the departmental moth testers were in great demand in the sericultural villages although these layings have to compete with the Mysore tested layings, as well as with seed cocoons bought from Mysore villages by local seed vendors. As the private rearers availed themselves of the service of the moth testers to a greater extent, seed cocoons to the value of only Rs. 248-6-6 were purchased during the year, and as an amount of Rs. 310 was realized from the sale of disease-free layings and pierced cocoons, the operations yielded a profit of Rs. 62. The moth testers and the silk superintendent inspected periodically the rearings conducted by the village rearers out of the disease-free layings supplied by the Peripatetic Rearing Party. Twelve thousand five hundred and eighty-six disease-free layings of hybrid seed were distributed in Kollegal taluk during the year.

89. Silk Farm, Coonoor.—Hybridization work was continued at this farm during the year. The number of layings and seed cocoons supplied to different farms was 7,300 and 17,600, respectively. Grafting and budding work and cross polination were conducted successfully. On account of the higher and quicker yield obtained by rearers from hybrid races, an increased number of hybrid layings is being prepared and distributed in Kollegal taluk. As an attempt to secure a supply of hybrid seed for cross-ing from Japan was unsuccessful, arrangements were made with the Director, International Committee for the improvement of sericulture in China, Shanghai, to supply the following seed: (i) hybrid between European uni-voltine and Chinese bi-voltine, (ii) hybrid between Japanese uni-voltine and Chinese bi-voltine, and (iii) hybrid between Japanese and Chinese bi-voltine races. This seed was reared satisfactorily, and the first-crossed seed was reared successfully by the Kollegal village rearers.

90. Silk Farm, Hosur.—The extent of land under mulberry was 13 acres and the mulberry has grown up well. Nineteen successful rearings were conducted during the year with 9,301 layings of Mysore and hybrid seed which yielded 1,318,772 cocoons in number or 2,841 lb. in weight. The total quantity of leaves consumed in the production of these cocoons was 76,603 lb. After selecting the best cocoons for seed purposes, the balance of the cocoons was converted into silk weighing 76 lb. valued at Rs. 330. One lakh and nineteen thousand eighty-nine layings were supplied from this farm and gave satisfactory results.

91. Silk Farm, Palmaner.—The farm plantation of 75 cents was under water during the greater part of the year owing to the unusually heavy rains and the rearings were therefore conducted by purchasing leaves. Five acres of land have been leased and brought under mulberry cultivation. Seven rearings were conducted during the year with 870 disease-free layings which yielded

374 lb. or 17\,523 cocoons consuming 6,013 lb. of leaves. Nineteen thousand eighty-six disease-free layings were supplied from this farm and gave satisfactory results, whilst the balance of the cocoons was converted into silk.

92. *Thadaguni Farm*.—The number of rearings conducted in this farm was 10 with 4,431 disease-free layings yielding 1,090 lb. of raw cocoons. Out of these cocoons, 39,207 disease-free layings were successfully distributed and yielded good results, the remainder being converted into silk and disposed of. Interesting results were forthcoming from experiments conducted at the farm with different kinds of manure.

93. *District Sericultural work*.—The five assistant demonstrators of sericulture were stationed at (i) Kuppam, (ii) Bellary, (iii) Ellore, (iv) Mangalagiri, and (v) Vadakangulam, and demonstrated the rearing of mulberry and eri-worms in different villages. As the price ruling for mulberry silk was very low and no outlet could be found for eri cocoons, the progress of the work has been slow, except at Vadakangulam where the farm has been recognized under the Government of India subvention scheme.

94. *Improved Japanese cottage machines*.—The successful demonstration of the Japanese foot reeling machine with four reels by the silk reeling demonstrator has resulted in several country silk reeling establishments in Kollegal, either installing the improved machines or substituting component parts of them, such as, buttons, and pulleys, etc., for the equivalent parts of their own machines. A rearer of Kamakarai village has installed four of the improved machines. The silk reeled on the improved foot reeling machines has realized about Rs. 25 more per maund of 1,000 tolas than the ordinary country-made silk, though there is no difference in the cost of production. Experiments were conducted during the year on the Japanese twisting machine with 24 spindles with a view to increasing its production.

95. *Silk-worm guts*.—A sample consignment of gut was prepared and sent to the Superintendent of the General Hospital, Madras, who was so satisfied with it that he indented for 1,000 guts of 16 inches length. These long guts can be secured only from uni-voltine or good hybrid cocoons and not from local Mysore cocoons which yield only a gut from nine to ten inches maximum length. The possibility of developing this work at Coonoor, where uni-voltine and hybrid seeds are reared, is under consideration.

96. *Seasonal conditions*.—The conditions in the Kollegal taluk were unsatisfactory for the flush of mulberry leaves as the rainfall was only 25.52 inches as against a normal rainfall of 40 inches. The adverse seasonal conditions in conjunction with the low price realized for cocoons, raw silk, and silk waste owing to the abnormal competition from imported raw and spun silk, had an adverse effect upon the silk industry of Kollegal. The price of country

reeled silk varied from Rs. 120 to Rs. 100 per maund of 1,000 tolas for first quality, from Rs. 100 to Rs. 85 for second quality, and from Rs. 85 to Rs. 75 for third quality, whilst the price of waste varied from Rs. 3 to Rs. 4-8-0 per maund of 1,125 tolas.

97. *Protection for the sericulture industry*.—A report was submitted to Government during the year in regard to the inadequacy of the existing protection to the silk industry. In 1932-33, the Tariff Board investigated the position of the sericultural industry in India, and as a result of their investigation, they were satisfied that India possesses natural advantages for the development of the industry, and that plentiful, efficient, and cheap labour for such development is also available. The Tariff Board considered that the sericultural industry of India is of considerable importance in the agricultural and industrial economy of the country, and that it needed protection against foreign competition for a period of five years to enable the industry to undergo a reorganization which would, it was hoped, result in a reduction of the cost of production. As the protection afforded to the silk industry generally has been inadequate, it has not been possible for capitalists and others interested in the industry to carry out the reorganization of the industry on the lines suggested by the Tariff Board, although a portion of the period of protection has already passed. In view of this, the cost of production of raw silk has remained practically the same. The silk industry is languishing and unless a more effective measure of protection can be afforded to the industry there seems little possibility of arresting its decline. The Local Government addressed the Government of India in the matter, and it is understood that the representations on the subject have also been submitted by the Governments of Mysore and Bengal.

98. *Eri culture*.—It was stated in last year's report that a consignment of eri cocoons had been sent to Messrs. Lister & Co., Limited, Bradford, for conversion into different counts of yarn. The yarn spun out of the cocoon was received in December. It was found on an investigation of costs that it would not be a commercial proposition to export eri cocoons to England to be spun into yarn for re-export to India, whilst it was clearly not profitable to export cocoons to England to be marketed there. As it was understood that the Mysore Government had decided to set up a waste silk spinning plant in the Mysore State, enquiries were instituted as to whether the plant would be in a position to absorb the eri cocoons produced in the Madras Presidency. It was ascertained, however, that no experiments had been conducted in regard to the utilization of eri cocoons in the silk waste spinning plant and considerable doubt existed as to whether eri cocoons could be spun on a plant intended for spinning mulberry waste silk. Moreover, it was apparent that at the rate the Mysore factory proposed to buy mulberry silk waste, it would not be an economic proposition for rearers to produce eri cocoons for supply to the Mysore waste plant. As there was no point in continuing to produce eri cocoons for which no outlet could be found, it was

decided, shortly after the close of the year, to discontinue, for the present, the ericultural operations conducted at Kuppam. When the Mysore silk waste spinning plant is set up, endeavours will be made to arrange for trials to be carried out with eri cocoons, and should these be successful, the question can be reopened, although the economics of the supply of eri cocoons for conversion into yarn on the Mysore waste silk spinning plant appear to be the reverse of hopeful.

ENGINEERING SECTION.

99. *General.*—The work of the Engineering section consists mainly of the conduct of boring and pumping operations, the systematic inspection and maintenance under the compounding fee system of pumping installations and industrial machinery already at work, the purchase, erection, and maintenance of pumping plants suitable for irrigation, as well as of industrial machinery, the investigation of applications for loans under the Land Improvement Loans Act, and the conduct of the preliminary enquiries in connexion with some of the applications under the State Aid to Industries Act.

100. *Staff.*—Mr. L. S. Pinto held the appointment of Industrial Engineer throughout the year, except for a period of 12 days from 17th to 28th June 1935 when he was on leave. The Industrial Engineer was assisted by four Assistant Industrial Engineers, one in charge of the Industrial Engineering Workshop, Madras, and one each in charge of the Bezwada, Tanjore and Coimbatore divisions, the Industrial Engineer holding direct charge of the Madras subdivision, comprising the districts of Madras and Chingleput.

101. *Boring.*—The main work of the engineering section is boring for water. The department maintained nineteen power drills (fourteen Armstrong, three Calyx and two Keystone), one air compressor drill, and 106 hand-boring sets. The Government approved during the year a proposal that the three Calyx and two Keystone power drills should be withdrawn and disposed of in auction, since the cost of maintaining these old machines in commission had become disproportionate to the results obtained from them. The following table exhibits the territorial distribution of the applications received for boring, the number of feet bored in each of the divisions, and other relevant particulars.

Division.	Applications pending on 1st April 1935.	Applications received during 1935-36.	Applications disposed of during the year.	Applications pending on 1st April 1936.	Total number of feet bored.	Number of borings put down.	Number of successful borings.
Bezwada	91	208	211	88	27,581 5	348	280
Coimbatore	50	149	143	56	11,087 1	266	157
Tanjore	27	115	114	28	13,845 4	221	181
Madras	5	62	61	6	8,223 6	160	53
Total	173	534	529	178	60,737 4	995	671

It will be seen that the total number of borings put down and the depth bored during the year were 995 and 60,737 feet 4 inches, respectively, as against 1,175 and 63,513 feet 8 inches, respectively, in the previous year. The decrease is due, at least in part, to the fact that several sets were engaged on deep borings—the development of boring practice in this Presidency being in the direction of larger and deeper borings—and the deeper the boring the slower is the rate of progression, whilst the risk of mishaps to tools, necessitating resort to fishing operations, is considerably increased. The amount expended by the public on the boring operations conducted is estimated to be not less than Rs. 1,91,216. Of the 671 successful borings put down, those for agricultural purposes numbered 534. Assuming that the average yield per borehole is 50 gallons per minute, the total quantity of underground water made available for irrigation purposes from these boreholes works out to 26,700 gallons per minute, and assuming further that only a third of the supply tapped will be utilized, the borings put down during the year for agricultural purposes may be expected to maintain 2,366 acres of land under irrigation. The deepest of the borings completed during the year by a hand-boring set was 550 feet. This is the deepest boring ever put down by a departmental hand-boring set. The deepest of the borings completed during the year by a power drill was 710 feet.

102. *Artesian borings.*—At the close of the previous year, the department had to its credit 83 artesian boreholes. During the year under review, fourteen artesian springs were tapped. Of these, ten were in the Bezwada division, discharging fresh water at rates varying from 30 to 250 gallons per minute at ground level, the height of discharge ranging from one to four feet above ground level, and four were in the Tanjore division, two of which were feeble, whilst the discharge of water from the other two was three gallons per minute. Two new regions overlying artesian water, namely, Negapatam in the Tanjore district, and Uttamapalayam, in the Madura district were located during the year, in the course of boring work.

103. *Sub-artesian borings.*—Owing to the success and popularity of the borings put down and fitted with hand pumps during the last Mahamagam festival at Kumbakonam, and the Ardhodayam festival at Vedaranyam, which ensured a supply of good drinking water free from contamination to the pilgrims who attended the festivals, the West and East Tanjore District Boards sanctioned a programme of borewells for 1935-36 and about 25 of them were completed within the year. The local Assistant Industrial Engineer estimates that as a result of the putting down of these boreholes during the last few years, good drinking water is now regularly supplied to about 50,000 people. Three deep borewells were put down for the Panchayat Board, Moovalur, Mayavaram taluk, to depths varying from 200 to 240 feet and springs of good quality were tapped. Several successful well borings were put

down in the Cuddapah district, and the villagers, who were suffering acutely for want of good drinking water, are deriving great benefit from the supply of fresh water made available by the borings. Six successful borings were put down at Uyyalvada, Kurnool taluk, some of them being fitted with hand pumps, and the people of the village are now for the first time obtaining pure drinking water. Attracted by these results, the Kurnool District Board has engaged a departmental power drill for conducting a deep boring at Uyyalvada for public use. A number of borings were put down at other places in the Kurnool district in order to relieve the water scarcity in the villages and to minimize the ravages of the guinea-worm disease which is widely prevalent in the district. Two borings were put down in an existing well belonging to V. Sugendra Pachai of Pudupatti village, Trichinopoly district. Good and strong springs were tapped and the boreholes are supplying two pumping plants of 5 B.H.P. and 9 B.H.P., respectively, the yield of the bores being 20 to 25 gallons per minute on the crest of the lining pipes. A successful ground boring was put down for J. Subba Rao of Pamidi, Anantapur district, for supplying water for dyeing yarns, a hand pump has been fitted on the borehole and the dyer expects to derive an additional income of Rs. 800. Five successful borings were put down for the Aska Sugar Works and Distillery in the Ganjam district, water being supplied to the factory by pumps installed on them, and as a result of these borings, the proprietor of the factory expects to derive an increased income of about Rs. 4,000 per annum. A ground boring was put down for the sugar factory of the Vuyyuru Co-operative Industrial and Credit Society, Limited, Kistna district, to a depth of 394 feet. Fresh water was tapped at 250 feet below ground level, and it rose to nine feet below ground level. As the supply was not sufficient for the purposes of the factory, the boring was taken down to 394 feet when the yield was tested with a Worthington steam pump and found to be 10,000 to 12,000 gallons per hour at about 25 feet below ground level.

104. *Work of the power drills.*—Considerations of space will admit only of a very brief reference to the work of the power drills. One of the Armstrong drills was engaged throughout the year for the Loyal Mills, Limited, Koilpatti, Tinnevely district, and the boring, which was begun in March 1935, was taken to a depth of 350 feet in hard rocky strata, the water was tested and the discharge was found to be 750 gallons per hour at a depth of 150 feet. Another borehole was started for the mills and it had gone down to 44 feet from ground level at the close of the year. An Armstrong drill was engaged by the Maharaja of Pithapuram and a 10-inch boring was put down at Adyar to a depth of 710 feet in hard granite work, the yield of the borehole being 16 gallons per minute at 104 feet below ground level. A Calyx drill was engaged throughout the year for the District Board Engineer, Kurnool, at Rudracode, it went down to a depth of 73 feet 11 inches in hard granite rock, and as a result of the boring, there was

12 feet of water in the 35 feet deep well, the water being used for drinking purposes for the Chenchus and the Forest subordinates. An Armstrong drill was engaged for the Andhra University at Waltair to conduct borings for water-supply for drinking, laboratory and hostel purposes. It started work on the fourth borehole and the boring continued from 132 feet to 189 feet in hard rock and was in progress at the close of the year. Another Armstrong drill, which was engaged in putting down two borings for the Union Mission Tuberculosis Sanatorium, Arogyavaram, near Madanapalle Road, tapped a spring after the first boring had gone to a depth of 300 feet through hard granite rock and boulders, and the borehole was found capable of yielding a continuous supply of 12 gallons of water per minute. The second boring was in progress at the close of the year. A boring was put down for the India Sugars and Refineries, Limited, at Hospet, to a depth of 200 feet below ground level, and fresh water was tapped at 69 feet below ground level, the borehole when tested yielding a steady discharge of 3,000 gallons per hour. Another boring was put down by the same drill for the Kurnool District Board, at Remata, continuing an old boring, put down in the previous year, to a depth of 258 feet in hard granite rock, and when tested was found to yield two gallons per minute. The district board proposes to instal a pump on the borehole and to construct an overhead tank at a cost of Rs. 500. A third boring for the District Board, Kurnool, at Uyyalvada, Kurnool taluk, had gone to a depth of 102 feet 6 inches by the close of the year. An Armstrong drill was deputed for work at the King George Hospital, Vizagapatam, and the boring put down was in progress at the close of the year, having reached a depth of 84 feet below ground level. Another Armstrong drill conducted two borings, one at Coimbatore for Subbanna Gounder, and the other at Willingdon Island, Cochin Harbour Works, Ernakulam. The first boring was put down to a depth of 300 feet in very hard rock and a good sub-artesian current was tapped, the water-level remaining constant at 37 feet below ground level, the boring has been connected with an adjoining well and the water-supply will be utilized for irrigation. The second boring, which was intended for supplying drinking water to the island and to the ships calling at Cochin Harbour was commenced with a 10-inch bore, which was reduced to 8 inches, after having gone to a depth of 194 feet. The boring, which had reached a depth of 233' 3" by the close of the year, tapped a sub-artesian current, and the borehole was found to yield a continuous supply of 735 gallons of water per hour.

105. *Torpedoing operations.*—There were at the beginning of the year, six applications pending, 17 were received and 14 applications were disposed of during the year.

106. *Pumping sets.*—The department maintains a number of pumping plants for hiring out to ryots to pump water to their crops during the periods of drought, or for well-sinking. The number

of plants so maintained during the year was 33. It has been decided to scrap 10 plants which have become unserviceable. The number of applications pending at the beginning of the year was seven, 54 were received, and 59 applications were disposed of during the year. Two pumping sets continued to be employed at the Central Jail, Trichinopoly, continuously pumping water from wells for the use of the prisoners in the jail. A pumping unit was deputed to the Public Works Department in connexion with the bridge construction at Avoor.

107. *New investigations.*—During the year under review, advice was given to Government departments, and the public, on a variety of engineering problems. There were at the beginning of the year, 25 applications for information and advice on hand, 233 were received, and 241 applications were disposed of during the year.

108. *Assistance to agriculturists and industrialists—New erections.*—The department undertakes the erection of machinery and plant on payment of a nominal fee on the capital cost of machinery installed. The number of plants erected during the year was as follows:—

Division.	Pending on 1st April 1935.	Received during the year.	Disposed of during the year.	Pending on 1st April 1936.	Remarks.
Bezwada ..	9	20	21	8	Seventeen pumping and four industrial plants.
Coimbatore ..	3	12	11	4	Six pumping, three industrial and two combined plants.
Tanjore ..	2	15	14	3	Seven pumping, six industrial and one withdrawn.
Madras ..	..	6	4	2	Two pumping, one industrial and one combined plant.
Total ..	14	53	50	17	

The capital invested in the above plants, including the cost of buildings, amounted to Rs. 96,892. It may be of interest to record the horse-power of the largest and the smallest plants erected during the year in each division.

Division.	Largest plant. B.H.P.	Smallest plant. B.H.P.
Bezwada ..	28	1
Coimbatore ..	34	5
Tanjore ..	30	2
Madras ..	17½	3

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

Division.	Acreage brought under cultivation.	Probable enhanced income accruing therefrom. Rs.
Bezwada ..	73	17,000
Coimbatore ..	50	5,000
Tanjore ..	6	450
Madras ..	40	3,640

The erection of a six-ton ice plant was undertaken during the year for the Associated Mills, Limited, Kumbakonam. An American-made wind mill, provided with a 40-foot tower was erected by the Department for A. V. K. Kasinathan Chettiyar of Devakottah. In some cases, erections carried out by private agencies were found to be defective by the owners of the plants and they were re-erected by the department. A 28-B.H.P. Ruston Oil engine in the Bellary district, which had been erected two years ago by a private agency, broke down owing to the inefficient manner in which it had been erected, and was handed over to the department for re-erection. The re-erection was completed successfully during the year.

109. *Compounding system.*—Under this system, owners of private installations are entitled to have their plants inspected and overhauled three times a year on payment of a small fixed fee per annum, and also at other times if special requisitions are received, for which, however, a small additional fee is charged. The number of plants compounded during the year under review was 504, as against 502 in 1934-35. The following statement shows the number of plants under maintenance in the four divisions:—

Division.	Industrial plants.	Pump-ing plants.	Com-bined plants.	Elec-trical plants.	Total.
Bezwada ..	48	59	4	..	111
Coimbatore ..	44	100	7	..	151
Tanjore ..	98	76	4	26	204
Madras ..	12	21	5	..	38
Total ..	202	256	20	26	504

The total capital cost of the above installations is estimated at Rs. 30,24,175. The largest and the smallest plant compounded in the divisions were as follows:—

Division.	Largest size of plant. B.H.P.	Smallest size of plant. B.H.P.	Total approximate horse-power compounded.
Bezwada ..	105	½	2,067
Coimbatore ..	60	1½	2,225
Tanjore ..	200	2	4,076
Madras ..	39	5	525

110. *Sugarcane crushing mills.*—The department is in possession of nine power-driven sugarcane crushing mills, three with engines and six without engines, which are hired out to the public for crushing their cane. There was a heavy demand during the year for the use of these mills by the sugarcane growers, and all the departmental mills were engaged during the crushing season. Considerations of space will admit only of reference to one or two of the cases in which sets were hired out for crushing purposes. One of the sets was lent to the Chinnaparipudi Co-operative Society, Gudivada taluk, Kistna district, and 600 tons of canes were crushed, the society realizing a gross income of Rs. 10,800. Another set was employed by the Zamindar of Ullipalem, at Sajjavaripalem, Guntur district, 680 tons of canes were crushed and the Zamindar is reported to have derived an income of Rs. 12,240. The same set was lent subsequently to the Elamarru Co-operative Society, Gudivada taluk, Kistna district, and to J. Chandrappa of Kamalapur, Hospet taluk, Bellary district. Another set was lent to the Pdamaddala Co-operative Society, Gudivada taluk, and 1,210 tons of canes were crushed, an income of Rs. 12,100 having, it is reported, been realized. The same set was also hired out to S. Narayana Rao at Gompalagudem, Tiruvur division, Kistna district. A mill without engine, was lent to the President, Challapalli Co-operative Society, Kistna district, and 1,590 tons of canes were crushed, the jaggery manufactured realizing a price of Rs. 19,560. A set was engaged by the Zamindar of Rachur, Repalle taluk, Guntur district, and 400 tons of canes were crushed, an income of Rs. 7,200 resulting from the operations. The same set was lent later to P. Veeraraghaviah at Garupada, Gannavaram taluk, Kistna district, and to the Sri Kothandarama Co-operative Society, at Jakkulanakkalam, Gannavaram taluk, Kistna district.

111. *Sugar manufacture.*—The department is in possession of two sugar centrifugals and demonstrations with these plants were carried out in different places. At the request of a number of small ryots, the manufacture of 'Boora' sugar by the indigenous process was demonstrated at Sembattu and Udyarpalayam, Trichinopoly district, Aduthurai Agricultural Farm, Tirupanandal Mutt, Maruthur, and Olathurayampettai, Tanjore district, Palur Farm, South Arcot district and Rettakulam, Tinnevely district.

112. *Services rendered to co-operative societies.*—A hand-boring set completed a deep boring for the Vuyyuru Co-operative Industrial and Credit Society, which is elsewhere referred to. A pumping set was lent to the Vivekananda Co-operative Society, Akumur, for cleaning out a tank. Departmental sugarcane mills and engines were hired out to the following co-operative societies: Eletipalem Co-operative Credit Society, Repalle taluk, Guntur district, Chirivada Co-operative Credit Society, Gannavaram taluk, Pdamaddala Co-operative Society, Gudivada taluk, Elamarru Co-operative Credit Society, Gudivada taluk, Challapalli Co-operative and Industrial Credit Society, Sri Kothandarama Co-operative Credit Society, Jakkalanakkalam, and Chinnaparipudi Co-operative

Society, Gudivada taluk, Kistna district. A Pinto chekku was erected for the Coimbatore Co-operative Stores and Bank, Limited, Coimbatore. The plants of the Kallakurichi, Sankarapuram, Rishibandan, and Nangavaram Co-operative Societies in the Tanjore division continued to be under departmental supervision during the year.

113. *Services rendered to departments of Government.*—During the year under review, the value of services rendered to the Agricultural, Revenue, Public Works, Jail, Forest, Educational, Medical, Fisheries, Labour, Judicial, Health, and Registration Departments in the various divisions, amounted to Rs. 13,868-10-8, as shown below, as against Rs. 12,405-10-10 in 1934-35.

Divisions.	Value of services rendered.		
	RS.	A.	P.
Bezwada	7,567	6	8
Coimbatore	1,822	0	0
Tanjore	3,448	0	0
Madras	1,031	4	0
Total	13,868	10	8

114. *Loans for the purchase of pumping plants.*—Loans are granted only 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. During the year under review, 20 applications were disposed of and all of them were either withdrawn or rejected.

115. *Industrial engineering workshop.*—The total value of work orders executed in the workshop for various departments, and for private persons, during the year under review, is shown below:—

Details of work done under different heads.	Amount realized.	
	1935-36.	1934-35.
	RS.	RS.
I. Pumping and boring	66,792	56,970
II. Inter-departmental	70	253
III. Other Government departments	490	998
IV. Private parties	1,705	1,063
Total	69,057	59,284

The working of the concern during the year resulted in a net loss of Rs. 4,034-15-8, against a net loss of Rs. 8,182 in the previous year.

INDUSTRIAL EDUCATION.

116. Mr. W. Fyfe held the post of Inspector of Industrial Schools until the 2nd June 1935 when he was appointed Deputy Director of Industries, and was succeeded as Inspector of Industrial Schools by Mr. N. M. Adyanthaya who held the post during

the remaining portion of the year. The Inspector of Industrial Schools continued to act as Secretary to the Board of Visitors to the Government Industrial School, Madura, as a member of the Board of Examiners of the Government Fisheries Training Institute, Calicut, and as an official visitor to eleven central jails and the Senior Certified School, Chingleput.

117. *State technical scholarships*.—One scholarship of the value of £216 per annum, tenable for two years in the United Kingdom, was awarded during the year for the study of Sugar Engineering. The following four scholars were under training outside India at the end of the year.

Name.	Subject of study.
N. Venkatayya ...	Sugar manufacture.
M. Moinuddin ...	Bye-products of sugar manufacture.
G. S. Siddappa ...	Canning.
Md. M. Farookhi ...	Sugar Engineering.

In addition to the four scholarships awarded by Government, another scholarship became available owing to the late Mr. M. J. Murphy, I.C.S., having directed that the residuary funds of his estate be placed at the disposal of Government for constituting a scholarship fund, to provide for the award of a scholarship tenable in the United Kingdom to a student belonging to the Malabar or South Kanara district, for higher studies in industrial or technical subjects. Accordingly a scholarship of the value of £216, tenable for two years was awarded during the year to B. Jagannatha Hegde, a native of South Kanara, for the study of the glass industry.

118. *Scholarships tenable at the Victoria Jubilee Technical Institute, Bombay*.—As stated in paragraph 119 of the report for last year, the award of fresh scholarships for study at this Institute had been temporarily suspended. In view of the fact that no diploma course in textiles has been instituted locally, and that there continues to be a demand for trained men holding such diplomas for employment in the textile industry in this Presidency, one scholarship of the value of Rs. 60 per mensem tenable for three years was awarded during the year for training in textile manufacture at the Institute. A subsidy of Rs. 200 was paid to the Institute on behalf of the scholar under training.

119. *Scholarships tenable at the Andhra University*.—A reference was made in the report of the previous year to the institution of scholarships for training in Sugar Technology at the Andhra University College, Waltair. These scholarships are of the value of Rs. 40 each per mensem, and are tenable for a period not exceeding three years. Of the six candidates who were awarded scholarships during 1934, two completed their course of training in March 1936. In view of the demand for sugar technologists

Government have, since the close of the year, raised the number of scholarships tenable at any one time at the Andhra University from six to nine.

120. *Scholarships tenable at the Harcourt Butler Technological Institute, Cawnpore*.—All the three students who were awarded scholarships since 1932 for training in sugar technology having completed their courses of training at the Institute, the award of further scholarships has been discontinued as facilities for such training are now provided in this Presidency.

121. *Scholarships tenable at the Benares Hindu University*.—Of the six candidates who were awarded scholarships for study at the Benares Hindu University since the inauguration of this scholarship scheme in 1928, all except one, who discontinued his scholarship owing to ill-health, have taken the B.Sc. degree in Electrical Engineering and, of these five, three are reported to have secured employment in the Madras Electricity Department, whilst the other two have only recently completed their practical training. Facilities for training in this subject having been provided in the Engineering College, Guindy, the award of further scholarships tenable at the Benares Hindu University has been discontinued since 1932.

122. *Post graduate scholarships tenable at the Indian Institute of Science, Bangalore*.—Four new scholarships of the value of Rs. 60 each per mensem were awarded during the year, three tenable for two years in the Department of Electrical Technology, and one tenable for three years in the Department of Biology, and one candidate who was awarded a scholarship for study in the General Chemistry Department did not avail of it as he had secured employment in the Nutrition Research Laboratory, Coonoor, and the scholarship thus rendered vacant was not reawarded. There were 11 scholars under training in the Institute during the year as shown below:—

Electrical Technology	...	...	...	...	4
General Chemistry	...	...	...	...	1
Organic Chemistry	...	...	...	...	2
Bio-Chemistry	...	...	...	...	3
Sugar Technology	...	...	...	...	1
Total	...	...	...	...	11

Of the three scholars who satisfactorily completed their training during the year, one has secured employment in the Electricity Department, and another as a technologist in a sugar factory in the Presidency.

123. *Scholarships tenable at the Indian School of Mines, Dhanbad*.—Since 1928-29, four scholars from the Presidency have been deputed for a four-year course of training in mining

engineering and geology in this institution and all of them have satisfactorily completed their training. It is understood that one of the scholars, who left India last year for further studies abroad, is now undergoing training at the Colorado School of Mines United States of America.

124. Industrial scholarships.—Under the provisions of Chapter IX of the Code of Regulations for Industrial Schools, sixty new scholarships tenable in each case for a period not exceeding five years and ranging in value from Rs. 1-8-0 to Rs. 7-8-0 per mensem, were, as usual, awarded during the year to pupils learning trades in various industrial schools recognized by the department. A bonus equivalent to two months' average scholarship was also granted to such of the pupils as satisfactorily completed the prescribed courses of study during the year. These scholarships are found to be of considerable assistance in enabling needy students to remain long enough under training to acquire something more than the rudiments of their trade.

125. Government School of Technology, Madras.—M.R.Ry. N. M. Adyanthaya Avargal continued as Principal of the School until the 1st June 1935 when he took over the duties of Inspector of Industrial Schools. M.R.Ry. M. V. Jagannatham Ayyangar acted as Principal during the remainder of the year. M.R.Ry. Jagannatham Ayyangar also held additional charge of the post of Senior Lecturer up to 15th November 1935 when he was relieved by M.R.Ry. N. S. Rajan who had been appointed to the post. The School of Technology affords instruction in mechanical engineering (five years), electrical engineering (four years), printing (five years), plumbing (two years), electrical wiring (two years), as well as a machine drawing course for woodworkers, metal workers, brick-layers, masons, and plumbers, each of two years' duration. There different printing courses have also been organized, one for compositors and proof-readers, one for machine-minders, and the third a diploma course.

Admissions.—Admission to the school is restricted to bona fide apprentices and workmen who are actually engaged in the trade which they wish to study. The number of new admissions during the year was 325 as against 381 in the previous year, of which 128 were admitted to the electrical engineering course, 55 to the mechanical engineering, and 43 to the printing course, the remainder being distributed among the other courses, such as wiring, plumbing, and vernacular drawing classes. The strength of the school on the 31st March 1936, was 1,001 as against 964 in the previous year—sufficient evidence of its growing popularity—and the average number of classes held during a week was 89.

Examinations.—The final examinations in the various subjects were, as usual, conducted by outside examiners. The L.M.E. and L.E.E. diploma examinations were conducted by Messrs. W. F. Thrupp of the Madras Electric Supply Corporation, Limited, and W. J. Miller of the Crompton Engineering

Company, Limited, respectively. Eighteen candidates qualified themselves for the L.E.E., and 13 for the L.M.E. diploma. The electric wiring competency examination was conducted jointly by Messrs. P. V. Chari, Electrical Engineer to Government, and C. V. Krishnaswami Chetti, Electrical Engineer, Corporation of Madras. Seventy-two candidates, including 46 private candidates, appeared for the examination and 40 were awarded competency certificates. Mr. A. Lepper, Superintendent, Government Press, conducted the final examinations in printing and in composing and proof-reading. Of the 36 students who appeared for these examinations, 25 were awarded certificates. The practical examination in plumbing was conducted by Mr. I. Kuriyan, Engineer, Corporation of Madras, while the examinations in vernacular drawing were conducted by Mr. B. R. Cooper, Chief Draftsman, Madras and Southern Mahratta Railway Company, Limited. Thirty-four candidates appeared for these examinations and 31 qualified themselves for certificates. Government sanctioned during the year, the holding of a supplementary examination for the award of L.M.E. and L.E.E. diplomas in September or October each year, provided no extra expenditure is incurred on this account. The first supplementary examination was held in November, the outside examiners being Messrs. W. F. Thrupp of the Madras Electric Supply Corporation, Limited, and D. G. Ansell of the Crompton Engineering Company, Limited. Of the 17 candidates who appeared for the examination in electrical engineering, eight were awarded the L.E.E. diploma. The school continued to be the centre for the Presidency for the City and Guilds of London Institute Examinations, for which 210 candidates from all over the Presidency appeared for the various technological subjects, and 98 came out successful.

Scholarships.—In addition to the twelve Government scholarships tenable at the school for a period not exceeding five years, the Commissioner of Labour awarded 10 scholarships to students belonging to the depressed classes, and the Trustees of the Sri Venkateswara Hostel awarded a similar number of scholarships during the year. The District Boards of Guntur and West Godavari each awarded one scholarship to a candidate nominated by them. One Victoria Jubilee Scholarship was awarded to a student of the school, whilst another was awarded by the Trust Board of the Victoria Technical Institute, Madras. A few charitable institutions such as the Muhammadan Educational Association of South India and the Kanyaka Parameswari Charities continued their grant of monthly stipends to several students.

Equipment.—The newly constructed fitter's shop was taken over during the year and the carpentry and fitting sections were transferred to the new premises. The equipment in the workshop and laboratory was strengthened by the addition of an oil testing set, a slotting machine, and a tensometer. With a view to providing efficient practice for the students, a definite scheme of work for the laboratory and workshop was introduced during the year.

Career of ex-students.—Of the 39 students who were awarded the L.M.E. or L.E.E. diploma, 25 are reported to have secured suitable posts. In order to assist the past students of the school in finding employment, the Principal is maintaining an Employment Bureau.

126. *Preparatory section.*—The number of new admissions to this section was 65, of which 20 were Madras and Southern Mahratta Railway stipendiary students. The strength of the school at the end of the year was 113 against 104 in the previous year. Twelve students satisfactorily completed their courses of study during the year and were awarded certificates.

127. *Perambur branch school.*—This school, which is attached to the Madras and Southern Mahratta Railway Workshops at Perambur, continued to function satisfactorily though there was a fall in the strength due to the non-recruitment by the railway of fresh apprentices during the year. The number of students receiving instruction at the school at the end of the year was 91 as against 119 in the previous year. The final qualifying examinations were, as usual, conducted by the railway officials, and 22 students, who came out successful, were awarded certificates. Government sanctioned, during the year, the continuance, for a further period of five years from 1st April 1936, of the existing arrangement under which a sum of Rs. 875 per month is recovered from the railway in respect of the tuition and supervision charges of this school.

128. *Apprentices in the Buckingham and Carnatic Mills.*—The arrangement entered into with the Buckingham and Carnatic Mills under which they accept, on the recommendation of this department, a small number of youths every year for apprenticeships in the mills, was referred to in last year's report. Such of the apprentices as are students in the Government School of Technology are granted the necessary facilities to attend the school for theoretical training. Consequent on the re-organization of the Engineering section of the Buckingham and Carnatic mills, the Managing Agents were unable to accept any fresh apprentices during the year for training in that department, and only three apprentices were entertained by them for training in the Textile department of the mills.

129. *Government Industrial School, Madura.*—M.R.Ry. V. Raghava Ayyar continued as Superintendent of the school throughout the year except for a period of one month, when he was on leave, and M.R.Ry. K. Vaidyanatha Ayyar, Lecturer, held additional charge of the post of Superintendent. The Madura Industrial School, which provides instruction in engineering and wood-working trades extending over a period of five years, caters for the needs of the southern districts of the Presidency. Proposals were submitted for the opening of a class in electric wiring, and the orders of Government sanctioning them were received shortly after the close of the year.

Admissions and withdrawals.—During the year, 37 candidates sought admission to the school, but only 30 actually joined. There were seven withdrawals, one left the school owing to illness, and the rest for want of means to continue their training. The strength of the school at the close of the year was 73, the same as in the previous year.

Examinations.—The annual and final examinations were conducted by the Board of Examiners, consisting of the Superintendent of the School, and Mr. J. H. Lawson, Manager of the Pasumalai Trade School. Of the 63 students who presented themselves for the examinations, all except one were declared to have passed. Fourteen final year students who satisfactorily completed their training in metal-work and wood-work were awarded certificates.

Board of visitors.—The Board consists of officials and non-officials with the Director of Industries as Chairman, and the Inspector of Industrial Schools as Secretary. Its tenure having expired by the end of the year, it was reconstituted for a further period of three years from 1st April 1936.

Hostel.—The hostel attached to the school functioned satisfactorily during the year. The present strength of the hostel is 32, consisting of 15 in the vegetarian mess and 17 in the non-vegetarian mess. The mess charge does not exceed Rs. 9 per head per month.

Financial position.—The receipts and expenditure of the school for the year were Rs. 18,769 and Rs. 32,071, respectively. The net cost to Government of running the institution was thus Rs. 13,302 as compared with Rs. 12,792 in the previous year, and the amount of Rs. 17,500 which was recommended as reasonable by the Retrenchment Committee in 1932 and accepted by Government.

130. *New Government schools.*—The Government Industrial Schools at Bellary and Calicut, and the Government Trade School at Mangalore, which were started in 1929 continued on a temporary basis, their retention having been sanctioned up to the end of March 1938. These schools provide instruction in the engineering and woodworking trades, the duration of each course being limited to five years, and turn out skilled artisans of a type for which there is likely to be an increasing demand. No tuition fee is levied, but with a view to helping deserving poor pupils, scholarships are awarded by Government to one-third of the number of pupils admitted every year in each industrial school. In addition to this, some local bodies have also instituted a few scholarships. The strength of these schools at the close of the year, was 65 in Bellary, 48 in Calicut, and 45 in Mangalore. The annual and final examinations in the schools were conducted by the boards of examiners appointed by Government, consisting

of the superintendent of each school and one professional gentleman. In the Calicut school, nine students completed satisfactorily the courses of study, eight in Bellary, and seven in Mangalore, and all these were awarded certificates. The boards of visitors and selection committees, which were reconstituted during the year, continued to function satisfactorily. The Calicut and Mangalore schools participated in the local swadeshi industrial exhibitions held in December 1935, and each was awarded a gold medal for the high class furniture manufactured by them. The receipts and expenditure of these schools for the year were :—

	Receipts.	Expenditure.	Net cost.
	RS.	RS.	RS.
Calicut	11,908	17,282	5,374
Bellary	8,310	16,250	7,940
Mangalore	2,493	10,157	7,664
	<u>22,711</u>	<u>43,689</u>	<u>20,978</u>

The net cost to Government of running these institutions during the year was thus Rs. 20,978, as against Rs. 28,504 in the previous year and Rs. 32,728 in the year 1933-34. It may be mentioned that the amount recommended by the Retrenchment Committee and accepted by Government as reasonable was Rs. 45,000.

131. *Aided Industrial schools.*—The Inspector of Industrial Schools continued to supervise the non-textile schools, and the Assistant Director of Industries (Textiles) the textile schools. Two new schools, which are managed by the District Boards of Ramnad and West Tanjore, were recognized by the department during the year, namely; the Board Industrial School at Tanjore, which provides instruction in engineering and woodworking trades, and the Board Industrial School at Muthanandal, Ramnad district, which provides instruction in agriculture and cottage industries. At the close of the year, there were 74 recognized schools, excluding those managed by Government direct. On the 31st March 1936, there were 7,558 pupils receiving instruction in these schools, as against 5,938 in the previous year. Of these, 2,678 were Indian Christians, 2,211 Non-Brahmans (Hindus), 1,044 Depressed Classes, 666 Brahmans, 435 Muhammadans, 160 Europeans and Anglo-Indians, 99 criminal tribes, and 265 others. A sum of Rs. 91,775 was distributed in the form of maintenance grant (including Rs. 3,048 capitation grant), representing an average of Rs. 12-2-0 per pupil per annum as against Rs. 15-1-0 per pupil per annum in the previous year. A further sum of Rs. 14,482 was distributed as equipment grant, and Rs. 17,994 as building grant to certain schools. The teachers' training sections attached to the St. Joseph's Industrial School, Tindivanam, in cabinet-making, the C.S.M. Girls' Industrial School, Madras, in embroidery, and the American Mission Industrial School for Women at Palmaner in needlework and dress-making, continued to function satisfactorily.

LEATHER TRADES INSTITUTE, MADRAS.

132. *Staff.*—M.R.Ry. P. K. Rajamanikkam Nayudu, the Superintendent of the Institute, died at Madras on the 16th of June 1935, from which date Mr. K. Seshachallam Choudary, Leather Research Chemist, carried on the duties of Superintendent in addition to his own. In G.O. Ms. No. 138, Development, dated 31st January 1936, Government ordered that the senior officer in the Institute should be placed in charge of the Institute as its Superintendent.

133. *Advice and assistance to tanners.*—The Superintendent visited several of the tanneries in and around Vellore, Kathivadi, Arcot and Ranipet, in order to advise the tanners in regard to difficulties which they had experienced in the elangaram process and also to give advice in regard to bleaching. The Superintendent had several discussions during the year with local tanners in regard to the question of the substitution of wattle extract for wattle bark. The use of wattle extract has commenced in the Presidency only recently but it seems likely to increase, as from the tanners' point of view, the extract is cheaper than the bark, and, by its use, the cost of tanning is reduced to a limited degree. The Superintendent inspected an abandoned tannery in Vellore with a view to advising a firm in regard to its purchase and re-opening, and he advised in regard to the starting of chrome tanning in a tannery at Kisgi in Bellary district. The Superintendent also visited the Vellore Jail in connexion with an indent on the Director-General of Stores for boot machinery, whilst samples of heavy and light bark soles and russets received from the Superintendent of this jail for test were reported upon.

134. *Experiments and investigations.*—Experiments were conducted during the year with a view to ascertaining whether *Anogaissus latifolia* could not be used in conjunction with avaram for the tanning of second and third quality skins, and these are still in progress. Experiments on the tanning of skins with mixtures of sandal bark and avaram, konnam, and other barks, and synthetic tans, were carried out. It was found that the tan liquor was deeply coloured, and that the use of sandal bark for tanning purposes is uneconomic as compared with avaram. As, moreover, sandal bark is not available in large quantities, it is not proposed to continue the investigation. Experiments were also conducted in the tannery of the Institute in regard to the tanning of hides with a combination of divi divi and wattle, avaram, and konnam barks, with a view to ascertaining whether divi divi pods could be substituted, to some extent, for these better known tanning materials.

135. *Leather chemistry.*—The Leather Research Chemist carried out a number of analyses in connexion with the leather industry, and of the 73 samples analysed in the laboratory during the year, 39 were of tanning materials, extracts, and syntans, 21

of waters used in tanneries, 10 of leathers and 3 of lime and sodium sulphide. Owing to the extension of the residential area of the town of Ellore, several of the old established tanneries, which were formerly outside the town, have become a nuisance to the occupiers of houses and there has been a persistent agitation for their removal. As an alternative to removing the tanneries to another area, where they might not be able to secure such suitable water and so be unable to maintain the standard of their leather, the question of evolving a method of purifying the effluent from these tanneries, has, at the instance of the Commissioner of the Municipality, been taken up by the Leather, Research Chemist who visited Ellore, and on his return initiated experiments with a view to rendering the effluent clear and odourless. This experimental work was still in progress at the end of the year. As mentioned in last year's report, samples of avaram bark from plantations, raised by the Forest department in Anantapur, Nellore and Vizagapatam divisions, have been sent periodically to the Leather Research Chemist for analyses. The analysing of these barks was continued during the period under review and is expected to be completed by the middle of 1936, when a consolidated report on the work done will be drawn up. Mr. Seshachallam was permitted to patent the process he had evolved for the preparation of activated charcoal from spent tanning materials, and some of this activated charcoal was used for decolorizing purposes in the preparation of white sugar from palm juice by the open-pan system at Rettakulam in the Tinnevely district, and was found to be quite satisfactory. The objects underlying the experimental manufacture of activated charcoal were to (i) utilize the spent tanning materials that accumulate in large quantities in tanneries, and (ii) make available for sugar manufacture, oil refining, water treating and similar operations, a cheap and efficient charcoal for decolorizing, deodorizing and general purification. The method employed consists of impregnating the spent tanning material with alkalies, such as, lime, sodium hydroxide and sodium carbonate or with chemical re-agents which undergo acid hydrolysis in the presence of water, then carbonizing in the absence of air, cooling, and thoroughly washing to remove the mineral constituents. A process of manufacturing activated charcoal by this method has been evolved on a laboratory scale, but the process requires to be tried out on a semi-commercial scale before anything definite can be said in regard to the cost at which such activated charcoal can be supplied.

136. *General chemical work.*—The Leather Research Chemist, who acted also for the greater part of the year as Superintendent, continued to function as the departmental industrial chemist in addition to his duties in the Leather Trades Institute. A number of analyses in the sphere of industrial chemistry were carried out by him during the year including waters for various industrial purposes, limestones for sugar factories, and cutch for the Director of Fisheries. The experimental demonstration of the preparation

of white sugar from palm juice by the open-pan system, which was conducted by the Leather Research Chemist at Rettakulam, Tinnevely district, from the 8th to the 27th of June 1935, is referred to elsewhere in this report.

137. *Future of the Leather Trades Institute.*—The question of the future of the Institute had been held in abeyance pending the decision of the University of Madras as to whether they proposed to develop their technological activities, and to institute a course of training, and carry out research, in the sphere of leather technology. The decision of the University of Madras not to proceed with the proposal, and the death of the late Superintendent—Mr. Rajamanikkam Nayudu—rendered necessary a review of the whole position. In a report which I submitted to Government during the year, I indicated the lines of work which could suitably be carried on at the institute and expressed the view that a tanning institute of this kind which would serve as a centre for advice, research, and practical guidance to tanners, and for the conduct of analyses of bark, water, effluent, tan liquor, etc., is very necessary in this Presidency, though, if the department is to be of real assistance to the tanning industry, it must establish much closer contact with the tanning centres in the mufassal, and with the village tanning industry than it has in the past. The village tanners are largely uninfluenced by modern practice, and there is great scope for improvement in the methods adopted in the country tanneries throughout the Presidency. It is also very desirable that steps should be taken to improve the preparation and supply of hides and skins by introducing improved methods of flaying, and of preserving the raw hides and skins. Instead of spending time and money on eradicating certain kinds of stains and other defects on hides and skins, which result from the unsatisfactory methods of curing and preserving, which are practised in the villages, efforts should, I consider, be made to remove or neutralize, as far as possible, the actual causes of the stains. If any widespread improvement could be effected in this respect, the benefit to the economy of the Province in the shape of higher export values for hides and skins would be considerable. The distribution of tanneries in relation to the supply of raw materials and availability of suitable water also requires study. In G.O. Ms. No. 138, Development, dated the 31st January 1936, Government issued orders to the effect that while alive to the necessity for carrying out the recommendations of the Retrenchment Committee, they were unable to dissociate themselves entirely from one of the most important industries of this Presidency, and had accordingly decided that the Institute should be continued. They sanctioned the appointment of a Tanning Expert temporarily for a period of three years, and when this officer is appointed and gets to work, it is hoped that it will be possible to render the tanning industry a greater measure of assistance than has been possible in the recent past.

SCHOOL OF ARTS AND CRAFTS, MADRAS.

138. *Staff.*—M.R.Ry. D. P. Roy Chowdhury was in charge of the school throughout the year.

139. *Strength and attendance.*—The number of students on the rolls on the 31st March 1936 was 248 as against 269 in the previous year. The average attendance was 197, and the percentage of attendance during the year was 79, the same as in the previous year. The reason for the fall in attendance is reported by the Principal to be due to the fact that several of the depressed class students from the mufassal, who were under training in the Metalwork and Goldsmith departments, left the school when their scholarships were discontinued by the Labour Commissioner.

140. *General.*—Good progress was made with the experiments on cotton painting and printing and lacquer work. Owing to the success of the experiments on enamelling on gold, silver and copper, Government, as mentioned in the report of the previous year, sanctioned the formation of a separate section for enamelling in the school, and this was started in July. An electric lathe with a small motor was installed during the year to enable lacquer turning with opaque colours to be carried out. Steady progress was made in the craft of painting on leather, and the making of artistic leather money-purses, bags, writing-pads, etc. Arrangements were made during the year for selected articles manufactured at the school to be displayed for sale at the Victoria Technical Institute, the latter being paid a commission of 5 per cent on consignment account for their sale. This arrangement should prove mutually advantageous, since the visitors to the Victoria Technical Institute are much more numerous than those who visit the School of Arts and Crafts.

141. *Fine Arts section.*—The standard of the Fine Arts section was well maintained during the year, the students again producing some excellent specimens of work in painting and sculpture, many of which were exhibited, as usual, at the annual School Exhibition and the Madras Fine Arts Society's Exhibition. In view of the growing popularity of this section and of the fact that training in Fine Arts is not available elsewhere in recognized institutions in this Presidency, Government sanctioned during the year an increase in the strength of the Advanced Drawing class and the Painting class of the school from 16 to 20, and from 10 to 20 each year respectively.

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

Year.		Number appeared.	Number passed.	Per cent.
1933-34		18	12	67.00
1934-35		16	11	68.75
1935-36		26	18	69.00

The annual school examinations were conducted in April and the students of the arts and crafts sections, who had completed their training and passed the examinations, were awarded diplomas. The Cotton Memorial Prize—a gold medal—was awarded to A. Balakrishnan, a student of the painting class, whilst the Rao Bahadur N. R. Balakrishna Mudaliyar gold medals were awarded to A. Balakrishnan and Venkataratnam of the painting class.

143. *Stipends and scholarships.*—The number of scholarships and stipends awarded to students in the school from various sources was 66 as shown below :—

(i) Adi-Dravida stipends	...	...	...	36
(ii) School stipends	...	...	...	15
(iii) Victoria Technical Institute scholarships	...	...	...	8
(iv) Nepal scholarships	...	...	...	3
(v) Sri Venkateswara scholarships	...	...	...	2
(vi) Hyderabad State scholarship	...	...	...	1
(vii) Mayurbanj State scholarship	..	...	...	1
Total	..	..	..	66

144. *Financial statement.*—The expenditure for the year amounted to Rs. 45,155-11-9 against Rs. 43,993-0-10 in the previous year. The net cost of the school was Rs. 39,966-7-9. Up to the present, no fees have been charged for the students undergoing training in the various trades taught in the school, although a monthly fee of Rs. 3 each is payable by students admitted into the Fine Arts classes from outside the Madras Presidency. In order to bring about some reduction in the net cost of the school, this fee might I think be raised to, at least Rs. 5 a month, and a fee of Rs. 2 or Rs. 3 each a month charged in the case of students coming from the Madras Presidency. I would not, however, suggest the levy of any fee in the case of the craft section, as the majority of the students under training in this section of the school come from very poor families, and if fees were levied they might find it difficult to enter upon, or to continue their studies.

145. *School exhibition.*—The annual exhibition of the various specimens of arts and crafts prepared by the students and teachers of the school was held in January 1936 and was attended, as in the previous year, by many distinguished visitors, including His Excellency the Governor of Madras and Lady Marjorie Erskine. The number of exhibits, which was larger than on previous occasions, occupied practically the whole of the two large halls in the school. The furniture, enamelling, cotton and leather painting, metal work, and jewellery attracted considerable attention. The value of the articles sold amounted to Rs. 2,228, of which paintings of the students accounted for Rs. 1,514. The exhibition generally was again favourably commented upon in the local newspapers.

146. PROGRAMME OF WORK FOR 1936-37.

I. General.

(a) Continuance of efforts to establish industries of basic importance in the areas served by the hydro-electric projects.

(b) Conduct of further enquiries in regard to the possibility of developing the Salem iron ores.

(c) Examination of the practicability of instituting an index number of wholesale prices at Madras.

(d) Framing of proposals for the conduct of a survey of the production, marketing, and consumption of cotton handloom products.

II. Engineering.

(a) Study of the possibility of introducing, for the departmental boring work, a lighter and more mobile (and possibly self-propelled) power drill driven by an oil engine instead of by a steam engine, as in the case of the existing drills.

(b) Putting down of a considerable number of borings for providing drinking water supplies for villages, if the proposals submitted to Government for the utilization of a part of the Rural Development grant for the purpose are approved.

III. Industrial education.

(a) Framing of proposals for providing intensive courses in small scale industries, e.g., leather goods manufacture, casting and simple metal work, pottery and coir working.

(b) Formulation of proposals for reorganizing the present system of apprenticeship training, and the setting up of a Technological Diploma Examination Board.

(c) Review of the departmental scholarship schemes.

IV. Textiles.

(a) Conduct of experiments in regard to the manufacture of gold-thread.

(b) Introduction of a device for attaching to cottage pitlooms in order to provide for quicker shedding for the insertion of kora grass.

(c) Evolution of a pedal operated loom with a view to reducing the effort required to operate a loom and to enable a more uniform cloth to be produced.

(d) Construction of a swivel cottage loom for weaving cotton cot tapes.

V. Sericulture.

(a) Opening of an aided grainage and an aided farm.

(b) Conduct of research on the diseases of silk worms.

(c) Organizing the supply of 46 lakhs of disease-free layings.

(d) Increasing the supply of cross-breed layings.

VI. Kerala Soap Institute, Calicut.

(a) Preparation on a laboratory scale of toilet creams, brillian-tines, and dentifrices.

(b) Experimental manufacture of insecticides, fungicides and sprayers.

(c) Distillation of essential oils.

(Provided these schemes are sanctioned by Government in time to permit of a start being made during the year.)

VII. Leather Trades Institute, Madras.

When the Tanning Expert is appointed, investigations will be made in regard to—

(a) The possibility of introducing improved methods of flaying, and of the curing and preserving of raw hides and skins.

(b) The scope which exists for improvement in the methods adopted in the country tanneries throughout the Presidency.

(c) The distribution of tanneries in relation to the supply of raw materials.

(d) The possibility of constituting peripatetic tanning parties.

VIII. Miscellaneous experiments.

(a) Conduct of a demonstration of the manufacture of white sugar and improved jaggery from palmyra juice at Bhimavaram in the West Godavari district.

(b) Staging of a demonstration of improved methods of coir retting and coir production at Baruva in the Ganjam district.

IX. School of Arts and Crafts.

Continuance, and further development of the work on enamelling on gold, silver, and other metals, and of painting on leather, and the making of leather money purses, bags, writing pads, etc.

RECEIPTS AND EXPENDITURE.

147. The following statement compares the receipts and expenditure of the department during the years 1934-35 and 1935-36. Details are exhibited in Appendix I:—

Item.	1934-35.	1935-36.	Decrease — or Increase +.
	RS.	RS.	RS.
Expenditure ..	10,96,493	11,54,581	+ 58,088
Receipts ..	3,94,520	4,16,992	+ 22,472
Net cost ..	7,01,973	7,37,589	+ 35,616

It will be observed that there has been an increase, both under expenditure and receipts, during the year under review as compared with the previous year.

Expenditure.—There has been a decrease in the expenditure under the heads, Direction, District Engineering, Industrial Schools, Leather Trades Institute, Textile Institute, and Experiments on oils and fats at the Kerala Soap Institute, to the extent of about Rs. 29,400 as compared with that of the previous year. On the other hand, there has been an increase in expenditure under grants in aid to Industrial Schools, Industrial scholarships, School of Technology, School of Arts and Crafts, Sericulture, Kerala Soap Institute, Calicut, and Industrial Engineering Workshop, Madras, to the extent of Rs. 27,800. An expenditure of Rs. 31,700 was incurred under the heads "Grants for the handloom and sericultural industries", but this was set off by a similar amount under receipts. The fall in expenditure was due mainly to the appointments of a non-I.C.S. officer as Director, and of a lower paid officer as Inspector of Industrial Schools under Direction, to a saving under District Engineering, to a reduction in the number of wage-earning apprentices, and a falling off in the orders received for execution by Industrial Schools, to the death of the Superintendent and a consequent curtailment of activities under the Leather Trades Institute, to the abolition of posts and the withholding of scholarships under Textile Institute, and to a saving under Experiments on oils and fats at the Kerala Soap Institute owing to delay in purchasing and fitting up the deep well pump. The increase in expenditure was due to larger grants under buildings and maintenance under the head "Grants in aid to Industrial Schools," to the larger amount spent under "Industrial Scholarships" on scholarships tenable at the Indian Institute of Science, Bangalore, to the purchase of machinery under the School of Technology, to the increments earned by the Principal and staff under the School of Arts and Crafts, to a slight increase under other charges under the head "Sericulture," and to increased expenditure on tools and appliances under Kerala Soap Institute, Calicut and Industrial Engineering Workshop, Madras.

Receipts.—There was an increase under receipts from the Industrial Schools and the Kerala Soap Institute, Calicut, as compared with the previous year.

Net cost of the department.—The net cost of the department increased by Rs. 35,600.

APPENDIX I.

Statement showing the Receipts and Charges of the Department of Industries for the year 1935-36.

Receipts.			Expenditure.		
RS.	A.	P.	RS.	A.	P.
Pumping and boring	65,910	6 5	A. Direction	1,11,796	9 1
Industrial installations	3,561	4 0	B. District Engineering	3,15,991	9 0
Industrial schools	68,494	8 10	C. Grants in aid to Industrial Schools	1,34,448	14 0
School of Arts and Crafts	5,189	4 0	D. Industrial Scholarships	23,041	7 0
Textile Institute	240	2 11	E. Industrial Schools	75,876	11 4
Sericulture	1,552	2 5	F. School of Technology	88,275	14 3
Sugarcane mills	2,246	0 0	G. Leather Trades Institute	15,278	9 1
Rent	58	0 0	H. School of Arts and Crafts	45,155	11 9
Kerala Soap Institute	1,71,216	8 7	J. Textile Institute	39,978	13 1
Industrial Engineering Workshop	69,540	4 6	K. Sericulture	28,648	14 0
Other receipts	5,021	12 0	L. Kerala Soap Institute, Calicut	1,55,954	3 7
Grant for Handloom industry	21,831	10 0	Experiments on oils and fats at the Kerala Soap Institute, Calicut, etc.	5,329	15 1
Grant for Sericulture industry	9,906	3 2	M. Industrial Engineering Workshops	59,325	15 10
Total	4,24,768	2 10	Grant for Sericultural industry	9,906	3 2
Recoveries for overpayments	210	5 6	" Handloom industry	21,831	10 0
Collection of payments for services rendered	36	0 0	Total	11,29,936	0 3
Total	4,25,014	8 4	Expenditure in England—Stores	6,160	0 0
Deduct Refunds.	8,022	13 9	Expenditure other than stores	18,454	0 0
Net Receipts	4,16,991	10 7	Loss by exchange	31	0 0
Net cost of the department	7,37,589	5 8	Total	11,54,581	0 3
Total	11,54,581	0 3			

N.B.—The figures are provisional as they are subject to modifications in the March final and supplemental accounts.

APPENDIX II.

Statistics relating to Government and recognized Industrial Schools for 1935-36.

Serial number, name and place of institution.	Number on rolls on 31st March.		Metal Working or Engineering trades.		Engine tending.		Wood working trades.		Rattan work.		Textiles, cotton.		Textiles, wool.		Other textile trades.		Lace embroidery and needle work.		Other subjects (specified in remarks column).		Remarks.	
	1935.	1936.	Number on rolls.	Number passed out.	Number on rolls.	Number passed out.	Number on rolls.	Number passed out.	Number on rolls.	Number passed out.	Number on rolls.	Number passed out.	Number on rolls.	Number passed out.	Number on rolls.	Number passed out.	Number on rolls.	Number passed out.	Particulars as to after career of students passed out in the last two years.			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
GOVERNMENT INSTITUTIONS.																						
1 Government Textile Institute, Madras.	73	69	..	..	..	..	..	..	..	..	..	..	..	..	69	40	..	..	..	..	..	
2 School of Arts and Crafts, Madras.	263	248	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
3 Government School of Technology, Madras.	1,200	1,205	742	31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	(a)463	96	..	(a) Printing .. 88
4 Government Industrial School, Madurai.	73	73	40	8	..	..	33	6	..	..	..	..	..	..	..	..	..	..	..	..	..	Electrical Wiring .. 101
5 Government Industrial School, Bellary.	56	65	36	5	..	..	29	3	..	..	..	..	..	..	..	..	..	..	..	..	..	Plumbing .. 41
6 Government Industrial School, Calicut.	51	48	30	6	..	..	18	3	..	..	..	..	..	..	..	..	..	..	..	..	..	Vernacular Drawing .. 29
7 Government Trade School, Mangalore.	52	45	39	4	..	..	6	3	..	..	..	..	..	..	..	..	..	..	..	..	..	Preparatory classes .. 113
AIDED SCHOOLS (BOYS).																						
8 A.A.M. Industrial School, Katpadi.	100	112	..	..	..	..	98	..	..	..	..	..	..	..	..	..	..	..	*14	..	..	* Motor driving.
9 Anjuman Industrial School, Vellore.	88	90	..	..	..	..	90	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..
10 Anjuman Industrial School, Melvisharam.	56	51	..	..	..	..	51	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..
11 Anjuman Industrial School, Tirupattur.	31	41	..	..	..	..	41	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
12 Don Bosco Industrial School, Vellore.	25	27	..	..	..	..	27	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
13 St. Joseph's Industrial School, Tindivanam.	80	76	11	..	..	..	65	11	..	..	..	..	..	..	..	..	..	..	..	..	..	..
14 Danish Mission Industrial School, Panruti.	101	95	..	..	..	..	50	..	..	..	24	..	..	..	21	..	..	..	..	..	..	..
15 C.S.M. Agricultural School, Chingleput.	57	69	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	* 69	66	..	* Agriculture and Cottage Industries.
16 A.A.M. Industrial School, Velacheri, St. Thomas' Mount.	24	24	..	..	..	..	24	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
17 Kodambakkam Welfare Centre Industrial School, Kodambakkam.	..	25	10	..	..	..	15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
18 Victory Memorial Blind School, Poona-mallee.	..	19	..	..	..	..	7	..	12	..	..	..	..	..	..	..	..	..	..	..	..	..
19 St. Joseph's Industrial School, Coimbatore.	211	203	43	8	14	..	136	18	..	..	10	..	..	..	..	..	..	..	..	..	..	..
20 P.S.G. & Sons Charity Industrial Institute, Peelamedu, Coimbatore.	106	122	56 (a) 34	6	..	..	23	..	..	..	..	..	..	..	..	..	..	..	(b) 9	..	..	(a) Electric wiring. (b) Printing.
21 London Mission Boys' Weaving School, Erode.	51	48	..	..	..	..	..	..	..	..	48	..	..	..	..	..	..	..	..	..	..	..
22 C.B.M. Industrial School, Samalkot.	39	36	..	..	..	..	36	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..
23 U.L.C.M. Reconstruction School, Guntur.	20	23	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	† 23	..	..	† Agriculture, Poultry, Bee-keeping, Sericulture, etc.
24 American Mission Cabinet making School, Guntur.	43	40	40	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
25 Commonwealth Trust Engineering Classes, Mangalore.	13	15	12	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	† 3	..	..	† Foundry.
26 Sri Krishna Parisar-malayam Industrial School, Kavutaram.	25	26	..	..	..	..	20	2	6	..	..	..	..	..	..	..	..	..	..	..	..	..
27 C.M.S. Industrial School, Vidyanagar.	39	25	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	§ 25	..	..	§ Leather works.
28 St. Joseph's Industrial School, Gunadala.	77	75	5	4	..	..	70	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..
29 Municipal Technical Institute, Masulipatnam.	107	123	123	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
30 C.N.T. Institute, Vepery, Madras.	463	474	187	78	7	..	53	1	..	..	12	..	..	..	..	..	..	..	215	35	..	Drawing, Moulding, Fitting and Workshops mechanics.

APPENDIX II—cont.

Statistics relating to Government and recognized Industrial Schools for 1935-36—cont.

Statistics relating to Government and Recognized Industrial Schools for Boys																						
Serial number, name and place of institution.	Number on rolls on 31st March.		Metal working or Engineering trades.		Engine tending.		Wood working trades.		Rattan work.		Textiles, cotton.		Textiles, wool.		Other textile trades.		Lace embroidery and needle work.		Other subjects (specified in remarks column.)		Remarks.	
	1935.	1936.	Number on rolls.	Number passed out.	Number on rolls.	Number passed out.	Number on rolls.	Number passed out.	Number on rolls.	Number passed out.	Number on rolls.	Number passed out.	Number on rolls.	Number passed out.	Number on rolls.	Number passed out.	Number on rolls.	Number passed out.	Number on rolls.	Number passed out.		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
AIDED SCHOOLS (BOYS)—cont.																						
31 Anjuman Industrial School, Madras.	90	92	..	..	..	..	51	11	..	..	..	..	..	..	..	..	..	..	(a) 41	4	..	(a) Tailoring.
32 Orr's Assisted Industrial School, Madras.	49	44	44	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
33 Ramakrishna Mission Industrial School, Myslapore.	28	38	38	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
34 Sri Ram Motor School, Madras.	25	31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	31	..	..	Motor mechanics.
35 The Penitentiary, Madras.	..	54	..	..	..	..	54	..	..	..	..	..	..	..	..	..	..	..	* 45	11	..	* Bee-keeping and silk spinning.
36 Gokulam Cottage Industries School, Royapetta.	32	45	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	† 11	..	..	† Printing.
37 Pasumalai Trade School, Pasumalai, Madras.	56	49	13	..	..	..	25	7	..	..	..	..	..	..	..	..	..	..	† 11	..	..	† Tailoring.
38 C.S.M. Industrial School, Dindigul.	45	50	10	..	..	..	29	..	..	..	..	..	..	..	..	..	..	..	† 11	..	..	
39 St. Joseph's Industrial School, Ootacamund.	50	54	..	..	..	..	54	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
40 District Board Industrial School, Muthanendal, Ramnad.	..	27	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	§ 27	..	..	§ Agriculture and subsidiary industries.
41 St. Theresa's Industrial School, Salem.	27	38	3	..	..	..	28	..	..	..	..	..	..	..	..	..	..	..	7	..	..	Brick-laying.
42 St. Francis Xavier's Industrial School, Tanjore.	33	103	..	..	..	..	54	4	..	..	49	2	..	..	..	..	..	..	..	..	..	
43 St. Mary's Industrial School, Kumbakonam.	76	69	11	..	..	..	58	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
44 Municipal Industrial School, Kumbakonam.	31	22	..	..	..	..	10	5	..	..	12	..	..	..	..	..	..	..	..	..	..	
45 Borstal School, Tanjore.	120	123	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
46 S.P.G. Art Industrial School, Nazareth.	144	140	24	2	..	..	101	15	..	..	..	..	..	..	..	..	..	..	¶ 15	3	..	¶ Tailoring.
47 St. Joseph's Industrial School, Adaikalapuram.	113	86	..	..	..	..	49	..	..	..	(a) 27 } 10 }	..	..	..	..	..	..	..	..	..	..	(a) Girls.
48 C.M.S. Industrial School for the Blind, Palamcottah.	66	70	..	..	..	..	..	..	11	..	(b) 31 } 28 }	..	..	..	..	..	..	..	..	..	..	(b) Girls.
49 District Board Industrial School, Tanjore.	..	24	12	..	..	..	12	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
50 St. Ignatius Industrial School, Tuticorin.	26	29	..	..	..	..	23	6	6	1	..	..	..	..	..	..	..	..	..	..	..	
51 Anblan's Industrial School, Arumuganeri.	126	121	..	..	..	..	67	..	..	..	..	..	..	..	..	..	..	..	(c) 54	..	..	(c) Tailoring and sewing.
52 St. Joseph's Industrial School, Trichinopoly.	101	120	36	1	..	..	78	6	..	..	..	..	..	..	..	..	..	..	(d) 6	..	..	(d) Foundry.
53 Methodist Mission Industrial School, Karur.	90	100	5	..	..	..	60	10	1	26	2	..	..	..	..	..	..	..	..	..	..	
54 All Saint's Industrial School, Puthur.	31	32	..	..	..	..	32	3	..	..	..	..	..	..	..	..	..	..	..	..	..	
55 Servindia Agricultural and Industrial School, Mayanur.	25	23	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	(e) 23	..	..	(e) Agriculture and allied subjects.
56 St. Aloysius Industrial School, Vizagapatam.	..	27	27	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
57 Lady Willingdon Leper Settlement, Chingleput.	..	17	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	17	..	..
AIDED SCHOOLS (GIRLS).																						
58 Danish Mission Industrial School, Keelur, Tirukkoyilur.	33	37	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	37	4	..	..	
59 St. Joseph's Convent Industrial School, Bellary.	67	71	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	71	4	..	..	
60 C.S.M. Lace School, Chingleput.	56	67	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	67	46	..	..	

APPENDIX II—cont.

Statistics relating to Government and recognized Industrial Schools for 1935-36—cont.

Serial number, name and place of institution.	Number on rolls on 31st March.	Metal working or engineering trades.	Engine bending.	Wood working trades.	Rattan work.	Textiles cotton.	Textiles wool.	Other textile trades.	Lace embroidery and needle work.	Other subjects (special remarks column).	Remarks.											
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
AIDED SCHOOLS (Girls)—cont.																						
61 Methodist Mission Industrial School, Ikraadu.	66	114	..	..	..	..	..	..	..	..	36	..	..	..	..	..	78	..	..	..	..	..
62 St. Anthony's Industrial School, St. Thomas' Mount, St. Palmarie's Women's Industrial School, Palmarie.	49	80	..	..	..	..	..	..	..	..	..	..	..	..	..	..	80	..	..	..	..	..
63 A.A.M. Women's Industrial School, Brode.	56	04	..	..	..	..	..	..	..	..	..	..	..	..	..	..	64	7	..	..	..	..
64 I.W. Girls' Industrial School, Brode.	51	52	..	..	..	..	..	..	..	..	..	..	..	..	..	..	52	7	..	..	..	..
65 Methodist Mission Industrial School, Dharapuram.	33	37	..	..	..	..	..	..	..	..	..	..	..	..	..	..	57	8	..	..	..	..
66 Immaculate Convent, Ootacamund.	98	26	..	..	..	..	..	..	..	..	..	..	..	..	..	..	26	3	..	..	..	..
67 St. Joseph's Orphanage School, Gunjur.	27	18	..	..	..	..	..	..	..	..	..	..	..	..	..	..	18	4	..	..	..	..
68 C.S.W. Girls' Industrial School, Kil-paak.	59	45	..	..	..	..	..	..	..	..	..	..	..	..	..	..	45	18	..	..	..	..
69 Madras Seva Sadan Industrial School, Chetput.	60	73	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	73	5	..	..	..
70 St. Bridget's Industrial School for Girls, Nuzumbakam.	47	52	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	52	..	..	..	..
71 St. Anne's Industrial School, Rayapuram.	25	26	..	..	..	..	..	..	..	..	26	2	..	..	..	..	..	..	..	..	..	..
72 St. Thomas' Convent Industrial School, Mysore.	29	28	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	28	..	..	..	..
73 St. Joseph's Industrial School, Madurai.	64	65	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	65	20	..	..	..
74 The Commonwealth Embroidery School, Calicut.	36	33	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	33	4	..	..	..
75 St. Vincent Girls' Industrial School, Calicut.	39	39	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	39	..	..	..	..
76 Sacred Heart Convent Industrial School, Anjengo.	41	25	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	25	1	..	..	..
77 O.E.I.W. Girls' Industrial School, Navudupet.	41	38	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	38	4	..	..	..
78 Nazareth Convent Girls' Industrial School, Ootacamund.	27	27	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	27	..	..	..	..
79 Leppiz Mission Women's Industrial School, Mayavaram.	31	31	..	..	..	..	..	..	..	..	22	10	..	..	..	..	..	2	..	* 7	4	..
80 R.C. Lace School, Vadaikulam.	48	46	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	45	9	..	..	..
81 Hindu Girls' School, Kundanulam.	35	25	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	25	19	..	..	..
82 Holy Cross Convent Industrial School, Tuticorin.	94	85	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	85	19	..	..	..
83 Methodist Mission Lace and Embroidery School, Karur.	8	9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	9	..	..	..	..
84 Holy Cross Convent Industrial School, Trichinopoly.	62	53	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	53	4	..	..	..

*Mat-weaving.

Statistics relating to Government and recognized Industrial Schools for the year 1935-36.

9887

Statistics relating to Government and recognized Industrial Schools for the year 1935-36—cont.

Serial number, name and place of institution.	Number on rolls on 31st March 1936.	Total recurring cost (excluding expenditure on new buildings and equipment).	Receipts from		Total, columns (4) and (5).	Net recurring cost, column (3) minus column (6).	Net recurring cost per pupil, column (7) + column (8).	Recurring grants from Department of Industries.					Total recurring grant, add columns (9), (10), (11) and (12).	Balance of recurring cost met by managers' funds, column (7) minus column (13).	Non-recurring.		
			Fees.	Sales.				Maintenance.	Scholarships.	Stipends.	Recurring grants from other departments or public bodies.	Expenditure on new buildings.			Building grant.	Equipment grant.	
ARMED SCHOOLS (BOYS)																	
—cont.																	
34 Sri Ram Motor School, Madras.	31	..	2,750	..	2,750	..	..	..	..	..	..	..	..	..	..	..	..
35 The Pentecostary, Madras.	54	3,359	..	..	..	3,359	62	..	..	..	..	..	..	3,359	..	..	..
36 Gokulam Cottage Industries School, Kovvpetta.	45	3,399	..	27	27	1,372	30	300	..	..	..	300	1,072	..	..	..	48
37 Pannimal Trades School, Pannimal, Madras.	49	44,846	213	25,433	25,646	19,200	392	1,624	224	..	245	2,083	17,107	..	1,000	41	41
38 C.S.M. Industrial School, Dindigul.	50	31,386	..	4,812	4,812	26,574	531	1,270	150	..	150	1,570	25,004	..	..	18	18
39 St. Joseph's Industrial School, Ottacamund.	54	43,972	..	23,942	23,942	20,030	371	1,100	58	..	283	1,441	18,589	..	..	10	10
40 District Board Industrial School, Muthanendal, Ramanad.	27	10,877	..	..	..	10,877	403	750	..	..	..	750	10,127	..	..	55	55
41 St. Theresa's Industrial School, Salem.	38	6,872	..	4,292	4,292	2,580	68	636	69	..	..	705	1,875	..	..	7	7
42 St. Francis, Xavier's Industrial School, Tanjore.	105	27,912	..	11,340	11,340	16,572	161	1,430	260	..	11	1,701	14,871	..	..	9	9
43 St. Mary's Industrial School, Kumbakonam.	69	34,926	..	15,076	15,076	19,850	288	1,840	173	..	..	2,013	17,837	..	..	..	..
44 Municipal Industrial School, Kumbakonam.	22	3,559	..	153	153	3,406	155	946	22	..	..	968	2,438	..	..	..	112
45 Borealis School, Tanjore.	123	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
46 S.P.G. Art Industrial School, Naxareth.	140	26,827	..	10,288	10,288	16,539	118	5,717	210	..	249	4,176	12,363	..	..	200	200
47 St. Joseph's Industrial School, Adakkalapur-puram.	86	6,785	..	3,083	3,083	3,702	43	1,183	..	..	..	1,183	2,519	..	..	..	..
48 C.M.S. Industrial School for the Blind, Palamcottah.	70	12,865	..	4,131	4,131	8,734	125	1,500	240	..	..	1,740	6,994	..	..	58	58
49 District Board Industrial School, Tanjore.	24	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4,000	4,000
50 St. Ignatius Industrial School, Tuticorin.	29	5,629	..	965	965	4,664	161	692	171	..	..	863	3,801	..	..	100	100
51 Arabian's Industrial School, Arumuganeri.	121	7,180	..	144	144	7,036	68	882	..	..	..	882	6,164	..	..	125	125
52 St. Joseph's Industrial School, Tiruchopoly.	120	63,400	..	29,632	29,632	33,763	231	1,967	262	..	453	2,682	31,081	..	..	250	250
53 Methodist Mission Industrial School, Karur.	100	32,395	..	14,336	14,336	18,059	131	2,300 + 864	406	..	..	3,570	14,489	..	..	170	170
54 All Saints' Industrial School, Puthur.	32	9,518	..	3,860	3,860	5,658	177	966	23	..	..	989	4,669	..	..	100	100
55 Servinda Agricultural and Industrial School, Mayanur.	23	2,712	..	470	470	2,242	97	750	..	..	..	750	1,492	..	..	1,150	1,150
56 St. Aloysius Industrial School, Vazhappanam.	27	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
57 Lady Willington Lepet Settlement, Chingleput.	17	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
ARMED SCHOOLS (GIRLS).																	
58 Danish Mission Industrial School, Keelur, Tirukoyilur.	37	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
59 St. Joseph's Convent Industrial School, Bellary.	71	5,099	..	180	180	4,919	69	1,025	..	..	..	1,025	3,894	..	..	..	..
60 C. S. M. Lace School, Chingleput.	67	4,097	..	951	951	3,146	47	600	122	..	..	722	2,424	..	..	..	..
61 Methodist Mission Industrial School, Ikkadu.	114	25,678	..	16,539	16,539	9,139	80	1,500	338	..	..	1,838	7,301	..	..	..	..
62 St. Anthony's Industrial School, St. Thomas Mount.	80	9,480	..	446	446	9,034	113	700	..	..	..	700	8,344	..	..	..	..
63 A.A.M. Women's Industrial School, Palmarpoth.	64	4,660	97	65	162	4,498	70	1,300	54	672	..	2,026	2,472	..	..	..	..
64 L.M. Girls Industrial School, Erode.	52	..	..	..	..	..	..	1,400	..	..	..	1,400	..	..	..	..	..
65 Methodist Mission Industrial School, Dharmapuram.	37	6,212	..	2,992	2,992	3,220	87	150	..	..	..	150	2,070	..	..	..	..
66 Immaculate Conception Convent, Coimbatore.	26	10,416	..	2,379	2,379	8,037	309	950	12	..	..	962	7,075	..	..	..	..
67 St. Joseph's Orphanage Industrial School, Guttur.	18	2,459	28	500	528	1,931	107	500	..	..	..	500	1,431	..	..	..	..

APPENDIX III—cont.

Statistics relating to Government and recognized Industrial Schools for the year 1935-36—cont.

Serial number, name and place of institution.	Receipts and expenditure to the nearest rupee.																	
	Receipts from										Recurring grants from Department of Industries.							Non-recurring.
(1)	(2) Number on rolls on 31st March 1936.	(3) Total recurring cost (excluding expenditure on new buildings and equipment).	(4) Fees.	(5) Sales.	(6) Total, columns (4) and (5).	(7) Net recurring cost, column (3) minus column (6).	(8) Net recurring cost per pupil, column (7) — column (2).	(9) Maintenance.	(10) Scholarships.	(11) Stipends.	(12) Recurring grants from other departments or public bodies.	(13) Total recurring grant, add columns (9), (10), (11) and (12).	(14) Balance of recurring cost met by managers' funds, column (7) minus column (13).	(15) Expenditure on new buildings.	(16) Building grant.	(17) Equipment grant.		
ARMED SCHOOLS (GIRLS)—cont.																		
68 C.S.M. Girls Industrial School, Kilpauk.	45	Rs. 8,190	Rs. 305	Rs. 1,656	Rs. 1,961	Rs. 6,229	Rs. 138 + 180 (Cap.)	Rs. 700	Rs. 92	Rs. 396	Rs. ..	Rs. 1,368	Rs. 4,861	Rs. ..	Rs. ..	Rs. ..		
69 Seva Sadan Industrial School, Cheput, Madras.	73	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
70 St. Bridget's Industrial School for girls, Nungambakam, Madras.	52	8,652	..	468	468	8,214	158	950	..	..	..	950	7,264	..	..	..		
71 St. Anne's Industrial School, Royapuram.	26	4,546	..	62	62	4,484	172	150	18	..	..	168	4,316	..	..	100		
72 St. Thomas Convent Industrial School, Mylapore.	28	9,368	..	2,770	2,770	6,598	239	150	56	..	..	206	6,392	..	..	185		
73 St. Joseph's Industrial School, Madurai.	65	5,920	..	2,013	2,013	3,913	60	500	217	..	..	717	3,196	..	..	..		
74 The Common School, Calicut.	33	3,679	..	1,631	1,631	2,048	62	700	96	..	..	796	1,252	..	..	30		
75 St. Vincent's Girls' Industrial School, Calicut.	39	6,232	..	374	374	5,858	150	150	24	..	..	174	5,684	..	..	75		
76 Sacred Heart Convent Industrial School, Arjengo.	25	1,961	..	10	10	1,951	78	400	166	..	..	566	1,385	..	..	..		
77 O.E.L.M. Girls' Industrial School, Nandupet.	38	5,565	..	1,629	1,629	3,936	104	500	54	..	..	554	3,382	..	..	..		
78 Nazareth Convent Girls' Industrial School, Ootacamund.	27	9,073	..	1,367	1,367	7,706	322	900	384	..	..	1,284	6,422	..	..	..		
79 Lipzig Mission Women's Industrial School, Mayavaram.	31	..	..	..	..	..	..	1,450	..	..	..	1,450	..	..	..	..		
80 R.C. Lace School, Vadaikanallam.	45	2,659	..	221	221	2,438	54	500	..	..	..	500	1,938	..	..	..		
81 Hindu Girls School, Kudankulam.	25	2,146	..	327	327	1,819	73	350	167	..	..	517	1,302	..	..	..		
82 Holy Cross Convent Industrial School, Tuticorin.	85	6,698	..	2,085	2,085	4,613	54	1,000	316	..	..	1316	3,297	..	..	..		
83 Methodist Mission Lace and Embroidery School, Kavaratti.	9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
84 Holy Cross Convent Industrial School, Titchanopoly.	63	5,400	..	926	926	4,474	71	800	236	..	..	1,036	3,338	..	..	..		

APPENDIX IV.

Statistics relating to recognized Industrial Schools for the year 1935-36.

Serial number and name of the institution.	Subjects in which instruction is provided.	Number of students who passed out in each subject.	Particulars as to the after-career of passed students.	Approximate total value of work turned out.
(1)	(2)	(3)	(4)	(5)
AIDED SCHOOLS (BOYS).				
1 A.A.M. Industrial School, Katpadi ..	Carpentry and cabinet-making	3 ..	One joined the Military force, one joined the Nizam's workshop, Hyderabad and the other selected for Tindivanam training. One is doing private furniture business and the other is going for teacher's training at Saidapet.	9,632 8 7
2 Anjuman Industrial School, Vellore ..	Cabinet-making	..		3,994 6 1
3 Anjuman Industrial School, Melvisharam.	Cabinet-making	2 ..		
4 Anjuman Industrial School, Tirupattur.	Cabinet-making and drawing	..		189 0 0
5 Don Bosco Industrial School, Vellore ..	Carpentry and cabinet-making	..		2,971 1 6
6 St. Joseph's Industrial School, Tindivanam.	(a) Cabinet-making and carpentry and (b) smithy.	(a) 11 ..	All are employed	13,708 12 0
7 Danish Mission Industrial School, Panruti.	(a) Carpentry and (b) weaving	(a) 1 ..	Employed	7,478 1 10
8 C.S.M. Agricultural School, Chingleput ..	Agriculture and allied trades	66 ..		556 15 8
9 A.A.M. Industrial School, Velacherri, St. Thomas Mount.	Cabinet-making	..		2,691 8 0
10 Kodambakkam Welfare Centre Industrial School, Kodambakkam.	(a) Cabinet-making and (b) smithy	..		..
11 Victory Memorial Blind School, Poona-malle.	Rattan work	..		..
12 St. Joseph's Industrial School, Coimbatore.	(a) Carpentry and (b) fitting	(a) 18, (b) 8 ..	All are employed	62,000 0 0
13 P.S.G. & Sons, Charity Industrial Institute, Peelamedu, Coimbatore.	(a) Mechanical engineering, (b) carpentry, (c) Electrician's course and (d) printing.	(a) 6 ..	One is working in the workshop and the rest are employed in local mills.	2,760 4 9
14 London Mission Boys' Weaving School, Erode.	Weaving and dyeing	..		..
15 C.B.M. Industrial School, Samalkot ..	Carpentry and cabinet-making	2 ..	Both are employed	16,528 3 0
16 U.L.C.M. Reconstruction School, Guntur.	Agriculture and allied trades including weaving.	..		638 0 0
17 American Mission Cabinet-making School, Guntur.	Carpentry and cabinet-making	..		9,146 0 0
18 Commonwealth Trust Engineering Classes, Mangalore.	Mechanical drawing, applied mechanics and workshop mathematics.	32 ..	Working as improvers	..
19 Sri Krishna Parissamalayam Industrial School, Kavutaram.	(a) Carpentry and (b) mechanical drawing ..	(a) 2 ..	One is employed	400 0 0
20 C.M.S. Industrial School, Vidyanagar ..	Leather work	..		2,348 15 0
21 St. Joseph's Industrial School, Gunadala.	(a) Carpentry, and (b) smithy	(a) 6, (b) 4 ..	Seven are employed, two have set up independent work and the other is undergoing training in Tindivanam School.	7,602 14 0
22 Municipal Technical Institute, Masulipatam.	Mechanical engineering, electrical engineering and artizan course.	7 ..	Five are employed	409 8 4
23 C.N.T. Institute, Vepery, Madras ..	(a) Mechanical engineering, (b) minor electrical engineering, (c) electric mechanics class, (d) electric wiring, (e) workshop foreman, (f) carpentry, (g) printing, (h) fitting, and (i) oil engine driving.	a) 19, (b) 25, (c) 34, (d) 12, (e) 8, (f) 1, (g) 2, (h) 1 and (i) 11.	(a) Five are employed and (b) eight are employed.	4,437 0 0
24 Anjuman Industrial School, Madras ..	(a) Carpentry, (b) carpet-weaving and (c) dyeing and tailoring.	(a) 11, (b) 1, (c) 3 ..	All are employed	6,010 15 7
25 Orr's Assisted Industrial School, Madras.	Mechanical engineering, workshop theory and practice and machine drawing.	..		..
26 Ramakrishna Mission Industrial School, Mylapore.	Automobile engineering, applied mechanics, heat engines, workshop mathematics, machine drawing and other allied subjects, smithy, fitting, foundry, machine shop work and motor cars.	4 ..	Three employed and the other is undergoing training in Union Company.	1,360 0 0
27 Sri Ram Motor School, Madras ..	Motor mechanics	..		..
28 The Penitentiary, Madras ..	Cabinet-making	..		..
29 Gokulam Cottage Industrial School, Royapetta.	Bee-keeping and Eric silk spinning and weaving.	11 ..	Nine are in second-year course and one is employed.	127 12 0
30 Pasumalai Trades School, Pasumalai, Madura.	(a) Printing, (b) carpentry and (c) general mechanics.	7 ..	Six are employed	32,230 6 4
31 C.S.M. Industrial School, Dindigul ..	(a) Carpentry and cabinet-making, (b) black-smithy, and (c) tailoring.	(a) 5 ..	Four are employed and the other admitted for training in the Police department.	6,000 0 0
32 St. Joseph's Industrial School, Ootacamund.	Cabinet-making	1 ..	Employed	28,600 0 6
33 District Board Industrial School, Muthanandal, Ramnad.	Agriculture and subsidiary industries and weaving.	..		400 0 0
34 St. Teresa's Industrial School, Salem ..	Carpentry, brick-laying and smithy	..		4,410 9 4
35 St. Francis Xavier's Industrial School, Tanjore.	(a) Cabinet-making and (b) weaving	(a) 4, (b) 2 ..	All are employed	15,500 0 0
36 St. Mary's Industrial School, Kumbakonam.	Cabinet-making and smithy	..		15,915 9 9
37 Municipal Industrial School, Kumbakonam.	(a) Cabinet-making and (b) weaving	(a) 5 ..	All are employed	385 15 3
38 Borstal School, Tanjore ..	Cabinet-making, weaving, tailoring, smithy and book-binding.	..		..
39 S.P.G. Art Industrial School, Nazareth.	(a) Carpentry and cabinet-making, (b) black-smithy and motor and (c) tailoring.	(a) 15, (b) 2, (c) 3 ..	All are employed	10,288 4 3
40 St. Joseph's Industrial School, Adaikalapuram.	Carpentry, smith's work, rattaning, weaving and tailoring.	..		3,471 11 4
41 C.M.S. Industrial School for the Blind, Palamcottah.	Weaving and rattan work	..		4,827 0 6
42 St. Ignatius Industrial School, Tuticorin.	Carpentry and rattan work	7 ..		1,114 9 0
43 Anbian's Industrial School, Arumuganeri.	Carpentry, tailoring and sewing	..		178 2 0
44 St. Joseph's Industrial School, Trichinopoly.	(a) Carpentry and cabinet-making, (b) twig fitting and (c) foundry.	(a) 6, (b) 1 ..		34,507 4 8
45 Methodist Mission Industrial School, Karur.	Carpentry, weaving, rattan work and black-smithy.	13 ..	Three are employed and one has gone for teacher's training.	7,500 1 6

APPENDIX IV—cont.

Statistics relating to recognized Industrial Schools for the year 1935-36—cont.

Serial number and name of institution.	Subject in which instruction is provided.	Number of students who passed out in each subject.	Particulars as to the after-career of passed students.	Approximate total value of work turned out.
(1)	(2)	(3)	(4)	(5)
RS. A. P.				
AIDED SCHOOLS (BOYS)—cont.				
46 All Saint's Industrial School, Puttur ..	Cabinet-making, carpentry and rattan work ..	3	.. All are employed	4,500 0 0
47 Servindia Agricultural and Industrial School, Mayanur.	Agriculture and subsidiary industries ..	..		547 2 9
48 St. Aloysius Industrial School, Vizagapatam.	Mechanical engineering and motor mechanics.	..	..	..
49 Board Industrial School, Tanjore ..	Mechanical engineering and cabinet-making ..	..	..	..
AIDED SCHOOLS (GIRLS).				
50 Danish Mission Industrial School, Keelur, Tirukkoyilur.	(a) Lace making and (b) embroidery. ..	(a) 2, (b) 2	.. One is working in the school ..	6,500 0 0
51 St. Joseph's Convent Industrial School, Bellary.	Lace-making, embroidery and general needle-work.	4		244 10 0
52 C.S.M. Lace School, Chingleput ..	Lace-making	46		1,051 1 2
53 Methodist Mission Industrial School, Ikkadu.	(a) Lace-making, (b) embroidery, (c) weaving, (d) spinning and (e) general needle-work and lacquer work	..	..	14,756 2 0
54 St. Anthony's Industrial School, Thomas Mount.	St. Embroidery, needle work and dress-making ..	..	..	2,274 0 0
55 A.A.M. Women's Industrial School, Palmaner.	Lace-making, embroidery, general-needle crafts and dress-making, child care and home nursing.	7	.. All are employed	3,850 0 0
56 L.M. Girls' Industrial School, Erode ..	Mat-weaving, basket-making and weaving ..	7	.. Two are employed	248 14 9
57 Methodist Mission Industrial School, Dharapuram.	Embroidery and dress-making	8	.. All are working in their homes ..	3,000 0 0
58 Immaculate Conception Convent, Coimbatore.	Dress-making, needle-work and embroidery ..	3	.. All are employed	2,488 3 0
59 St. Joseph's Orphanage Industrial School, Guntur.	Needle-work and dress-making	4	.. Two are employed	633 15 9
60 C.S.M. Girls' Industrial School, Kilpauk ..	Embroidery and dress-making	18	.. Four are employed	1,673 11 9
61 Seva Sadan Industrial School, Chetput, Madras.	Embroidery, needle-work, dress-making, jigna work, cane work, lacquer work and lamp shades.	5	.. Two are employed	663 0 0
62 St. Bridget's Industrial School for Girls, Nungambakkam, Madras.	Dress-making and embroidery	..	..	..
63 St. Anne's Industrial School, Rayapuram.	Cotton-weaving	2	..	93 0 0
64 St. Thomas Convent Industrial School, Mylapore.	Dress-making and embroidery	..	..	3,031 7 0
65 St. Joseph's Industrial School, Madura ..	Needle-work and embroidery	20	..	3,718 1 0
66 The Commonwealth Embroidery School, Calicut.	Embroidery and drawn thread	4	.. All are employed	1,608 0 0
67 St. Vincent's Girls' Industrial School, Calicut.	Dress-making, embroidery and knitting ..	..	..	441 12 6
68 Sacred Heart Convent Industrial School, Anjengo.	Lace-making, embroidery and dress-making ..	1	..	12 14 0
69 O.E.L.M. Girls' Industrial School, Nayadupet.	Lace-making and embroidery	4	.. All are married	1,300 0 0
70 Nazareth Convent Girls' Industrial School, Ootacamund.	Embroidery, needle crafts and dress-making ..	..	..	1,676 4 0
71 Leipzig Mission Women's Industrial School, Mayavaram.	Cloth weaving, mat weaving and needle-work ..	14	.. Seven are employed	2,480 0 0
72 R.C. Lace School, Vadakangulam ..	Lace-making and embroidery	9	..	341 0 0
73 Hindu Girls' School, Kudangulam ..	Lace-making	19	.. All are working in their homes ..	561 8 6
74 Holy Cross Convent Industrial School, Tuticorin.	Lace-making, embroidery and drawn thread ..	19	..	2,085 6 0
75 Methodist Mission Lace and Embroidery School, Karur.	Lace-making and embroidery	..	..	..
76 Holy Cross Convent Industrial School, Trichinopoly.	Embroidery, needle-work and dress-making ..	4	..	1,086 0 0