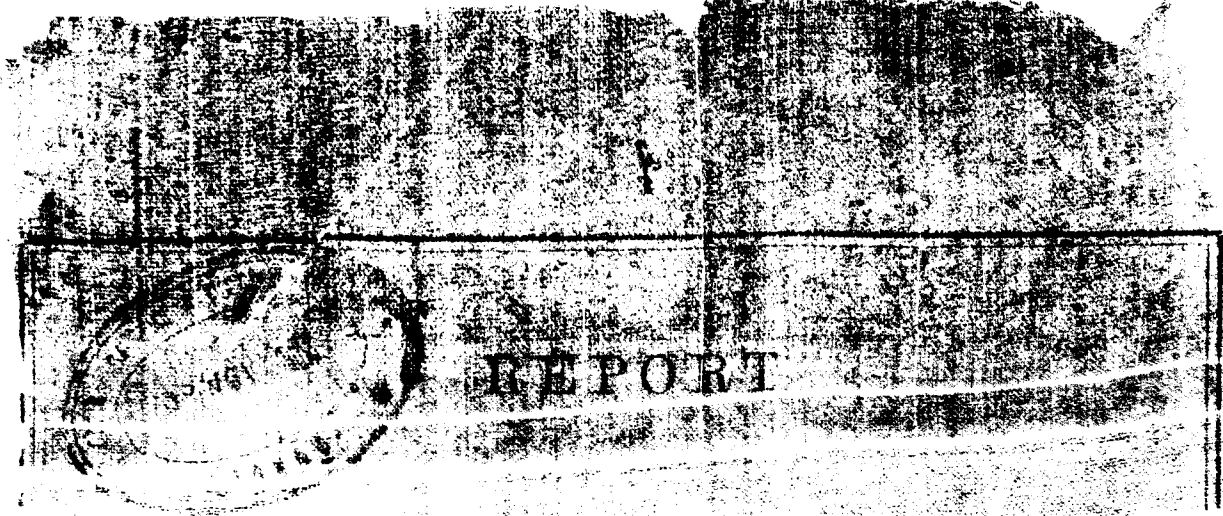


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REPORT
OF THE
OPERATIONS OF THE DEPARTMENT
OF AGRICULTURE
MADRAS PRESIDENCY
FOR THE OFFICIAL YEAR
1917-18





REPORT

ON THE

OPERATIONS OF THE DEPARTMENT OF AGRICULTURE.

MADRAS PRESIDENCY

FOR THE OFFICIAL YEAR

1917-18.

MADRAS
PRINTED BY THE SUPERINTENDENT, GOVERNMENT PRESS.

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OFFICE OF THE
DIRECTOR OF AGRICULTURE, MADRAS,
Dated 30th July 1918.

R.O.C. No. 70 Pdl.

ENCLOSURES—printed spare copies.

From G. A. D. STUART, ESQ., B.A., I.C.S.,
DIRECTOR OF AGRICULTURE,
Madras,

To THE SECRETARY TO GOVERNMENT,
REVENUE DEPARTMENT,
Madras.

SIR,
I have the honour to submit the annual report on the Agriculture Department for the year 1917-18.

I.—ADMINISTRATION.

A.—STAFF.

2. I continued to be in charge of the Department throughout the year under report, and was confirmed as Director of Agriculture with effect from 8th October 1917, the date on which Mr. D. T. Chadwick took over charge as Indian Trade Commissioner in London. I was on tour for 207 days in all and visited all the farms except Manganallur. Owing to steadily increasing office work I found it difficult to arrange for as much touring in the districts, as distinct from visits to farms, as I would have wished. I was able however to see something of the Ganjam, Godavari, Guntur, Nellore, North Arcot and Coimbatore districts, and to attend the Ongole and Tiruppur cattle shows.

I attended the annual meeting of the United Planters' Association of Southern India at Bangalore, a meeting of the Chamber of Commerce at Tuticorin, in connexion with the campaign against Pulichai cotton; a special conference on the fodder supply at Simla in October; and the Board of Agriculture meeting at Poona in December in company with the Deputy Directors, Messrs. Sampson, Hilson, Anstead and Carruth, the Government Sugarcane Expert, Dr. Barber, C.I.E., and the Government Economic Botanist, Mr. F. R. Parnell. I also toured with the members of the Indian Cotton Committee in the Guntur, Kistna, Madura, Tinnevely and Coimbatore districts. The Government Economic Botanist Mr. Parnell was permitted to visit Burma to study the work on rice improvement which is being carried out there by Messrs. McKerral and Thompstone. The Deputy Director of Agriculture, Live Stock, was given permission to visit Calcutta and Pusa to study cattle breeding problems but was not able to find time for this tour during the year under report. The Government Mycologist attended the annual meeting of the United Planters' Association of Southern India at Bangalore. The Government Sugarcane Expert

officers took short leave for periods of about a month or less, their assistants being in charge. Mr. E. Ballard, the Government Entomologist, remained on military duty throughout the year. Mr. R. Thomas, Deputy Director of Agriculture, VI Circle, was deputed as Cotton Expert under the Political Resident, Mesopotamia, from October 1917. This made it necessary for Mr. H. C. Sampson to take charge of the general supervision of the VI Circle in addition to the V and VII. This arrangement was a retrogression to the time when those three circles constituted the Southern Division, and as work has greatly increased since then Mr. Sampson's charge is now really too large for one officer. It has however been possible to carry on by providing him with Assistant Directors for each circle. M.R.Ry. K. Govinda Kidavu had already been appointed as Assistant Director of Agriculture, VII Circle, in June 1917 and on the deputation of Mr. Thomas two senior Farm Managers were placed in charge of the district work on cotton in the VI Circle, and the district work in the V Circle respectively. These two officers M.R.Ry. N. S. Kolaswami Pillai Avargal and M.R.Ry. A. V. Tirumuranatham Pillai Avargal were subsequently appointed Assistant Directors of Agriculture shortly after the close of the year under report. At the same time M.R.Ry. D. Balakrishnamurti Garu, the Assistant Director of Agriculture, I Circle, was promoted to Acting Deputy Director of Agriculture, and given independent charge of his circle. The present arrangement of the available gazetted staff is therefore as follows:—

Circle.	Deputy Directors.	Assistant Directors.	Districts comprised.
I	M.R.Ry. D. Balakrishnamurti Garu (Assistant Director acting as Deputy Director).	Nil.	Ganjam, Vizagapatam and Godavari.
II	Mr. G. B. Hilson	M.R.Ry. K. Ramaswami Nayudu Garu.	Kistna, Guntur and Nellore.
III	Mr. Chelvaranga Raju Garu (Assistant Director and acting Deputy Director).	Nil.	Kurnool, Cuddapah, Bellary and Anantapur.
IV			Chingleput, Chittoor, North Arcot and South Arcot.
V		M.R.Ry. A. V. Tirumuranatham Pillai Avargal.	Tanjore, Trichinopoly, Salem and Madras so far as green-manure introduction work is concerned.
VI	Mr. H. C. Sampson	M.R.Ry. N. S. Kolaswami Pillai Avargal.	Madras so far as cotton improvement work is concerned, Ramanad and Tinnevely.
VII		M. Govinda Kidavu Avargal.	Coimbatore, Nilgiris, Malabar and South Kanara.

Mr. F. T. T. Newland, the Government Agricultural Engineer, was compelled to take three months' leave from January owing to a severe attack of malaria consequent on a tour in the Javadi hills where we are boring for the Forest Department. M.R.Ry. J. Narayanamurti Pantulu Garu from the Department of Industries acted for him.

4. Dr. F. Marsden, the Dyeing Expert, was deputed to investigate the condition of Madras indigo manufacture during the year under report. His work is dealt with in paragraph 47 below. The Government Entomologist and his establishment which were originally sanctioned only for five years, were placed on a permanent footing from 24th April 1917. The carrying on of the sugarcane station for another five years from October 1917 was also sanctioned and the subordinate staff were made permanent, increased in number and their pay brought into line with that of the permanent members of the scientific staff of which they now form a part. For the reasons adumbrated in paragraph 59 of last year's report the post of the Special Loan Tahsildar was abolished from 1st August 1917. The strength of the scientific section was increased during the year by the appointment of a third Assistant to the Government Economic Botanist and a fourth sub-assistant to the Government Entomologist. The temporary posts of Herbarium assistant and Plant collector, and silk sub-assistant were made permanent. The Deputy Director of Agriculture, Live Stock, was given a permanent clerical staff

and the clerical staffs of the Deputy Director of Agriculture, IV Circle, and the Deputy Director of Agriculture, V and VII Circles, were increased.

The question of the exact sphere of influence of the Agricultural Engineering section of the department and the Department of Industries, so far as rural industries were concerned, was settled during the year—vide G.O. No. 1275, Revenue, dated 3rd May 1917, and a redistribution of the subordinate staff effected. The pay and grading of this staff was subsequently reorganized in order to bring them into the cadre of the Agricultural Department, most of the supervisors having been previously borne on the cadre of the Public Works Department. At the end of the year the upper subordinate staff consisted of twelve supervisors, two of whom were on special works (sugarcane crushing and power drilling), one in charge of the workshops, and one of the drawing office, and the remainder each in charge of one of the VII Circles given above except that the IV Circle has been divided into two supervisors' charges IV-A and IV-B with headquarters at Vellore and Madras, respectively. The lower subordinate staff consists of twenty-two mechanics, distributed at the rate of two to each circle, and the rest being employed at the workshops, the Agricultural College, or on special works.

The Inspector of Agricultural offices audited the accounts of some fourteen offices, besides seed depots. His reports were of great value in keeping me in touch with the condition of subordinate offices which are now very numerous. The Inspector of Agricultural offices is taking up the matter of the preparation of a departmental code in which all standing orders and instructions can be embodied.

5. The Director of Statistics, Mr. Findlay Shirras, visited the Presidency in November 1917 and discussed with me the possibility of improving the published forecasts and statistics of crop production, with special reference to cotton. The Indian Cotton Committee toured through all the important cotton tracts of the Presidency in February and March 1918 and visited our agricultural stations at Hagari, Nandyal, Koilpatti and Coimbatore. At Coimbatore, the President of the Committee, Mr. J. MacKenna, C.I.E., inspected the sugarcane station and the general work of the central farm in his capacity as Agricultural Adviser to the Government of India.

B.—BUILDINGS AND LAYING OUT OF FARMS.

6. The laying out of the four coconut stations on the West Coast was completed during the year,—paths and roads have been laid out and all necessary farm buildings completed. An additional area of 0.75 acres was leased at No. IV Station at Kasaragod in order to round off the boundary and to provide a site for an inspection bungalow, which was in progress of building at the close of the year. Regular observations of the yield of the standing coconut trees and their behaviour under various conditions were carried out at the station. Seedlings were raised in No. III station for planting

The Deputy Director of Agriculture, Live Stock, subsequently inspected a large number of possible sites and finally selected one in Chintaladevi village, Kāvali taluk, Nellore district. This site was inspected in September 1917 by a committee consisting of Messrs. Sampson, Hilson, Carruth and myself and was found to be suitable. Sanction for the opening of a cattle farm at this site was given in G.O. No. 1856-F/17-1, Revenue, dated 1st November 1917. Much of the land comprised in the site was waste and the remainder which was private property has since been acquired at a total cost of Rs. 13,785-0-0. The site consists of some 835 acres of which about 300 acres can be irrigated from the main channel of the new Mopad irrigation project, which channel forms the northern boundary of the farm. This project is expected to be in working order this cold weather. There is also a good subsoil water-supply. The site contains both black and red soils, and is well drained. Its only disadvantage is its comparative inaccessibility, —it lies 36 miles from Kāvali Railway Station, over a very poor road. The coming of the Mopad irrigation project must however result in this country being opened up and it is hoped that better road communication will be supplied in course of time. A road is already projected which would shorten the distance by 10 miles. The general development of the farm was put in hand and progress made with fencing and the erection of temporary buildings. Sanction has since been received from Government for the construction of 4 miles of approach road, but orders have not yet been received on the plans and estimates for the permanent buildings which are to be erected by the Public Works Department.

A site for the Potato Seed Farm in the Nilgiri, measuring 83.79 acres, was acquired at Nanjanād in October 1917, vide G.O. No. P. 3056, Revenue, dated 28th September 1917, and was partially cleared, walled and fenced. Some 13 acres were proposed for planting potatoes this year, and some progress was made with the temporary buildings—vide Appendix XI the report of the Curator of Government Parks and Gardens, who is in independent charge of this farm.

No progress was made with the planting stations for tea, coffee and rubber, pending receipt of sanction from the Secretary of State.

An area of 6.04 acres adjoining the Paddy Breeding Station at Coimbatore was acquired for use by the Government Sugarcane Expert for testing canes under wet land conditions on a larger scale than was possible in the Sugarcane Station—vide G.O. Mis. No. 3876, Revenue, dated 3rd December 1917.

In G.O. No. 597, Revenue, dated 12th February 1918, sanction was obtained for leasing 17.74 acres of land near Gudiyāttam in North Arcot district for five years for use as a demonstration farm. The land was taken over from April 1918.

Sanction was obtained in G.O. Mis. No. 4047, Revenue, dated 14th December 1917, for the leasing of 13.70 acres of dry land some three miles from Palur Agricultural Station for testing groundnut varieties, and the land has since been taken over. It has been found that the Palur Agricultural Station is not a suitable site for testing groundnuts as the soils are not typical and are uneven. The new site will be run as a substation from Palur and devoted entirely to testing groundnut varieties.

A site for an Agricultural Station for Cambodia cotton was selected, near Pollachi in the Coimbatore district, in March last and its acquisition has since been sanctioned by Government in G.O. No. 1971, Revenue, dated 18th May 1918.

7. At Coimbatore some progress was made with the quarters for the Assistant Principal, but the work was held up at the end of the year owing to the difficulty of the obtaining timber. Work has since recommenced. A somewhat alarming crack has developed in the quarters of the Entomologist at present used by the Assistant Principal. This is receiving attention from the Executive Engineer. The Indian rest-house and the dispensary and Hospital Assistant's quarters, which are intended to serve both the Agricultural and Forest Colleges, were completed during the year. A cattle isolation shed and a fumigatorium were put up, and attention was paid to the water-supply in consultation with the Government Agricultural Engineer. The existing wells have been cleared out in turn, bored where necessary, and their capacity tested, with a view to forming a

comprehensive scheme to meet the requirements of the estate which are ever increasing.

Besides the buildings on the new Agricultural Stations mentioned in the preceding paragraphs quarters for an Assistant Farm Manager were built at Koilpatti and a number of smaller works carried out at various stations. The seed store which was constructed at Nandyal by the Public Works Department so recently as 1914 at a cost of Rs. 6,800 has cracked so badly that large repairs are necessary and an estimate for Rs. 1,830 for this has been sanctioned in G.O. Mis. No. 769, Revenue, dated 22nd February 1918.

II.—AGRICULTURAL EDUCATION.

8. For the first time this year an additional centre for the preliminary examination was opened at Bellary for the convenience of candidates from the Deccan or Ceded Districts. Altogether 205 applications were registered and the number of candidates selected for examination at the three centres, viz., Bellary, Anakāpalle and Coimbatore, was six, twenty-eight and seventy-one, respectively. Of these forty-two were selected for admission into the Agricultural College, eighteen being from Telugu districts. Nine resigned subsequently so that the number that remain at the end of the year is only thirty-three and these are not a very promising lot. Both in number of applications and in quality this year marks a distinct falling back. The only reason that can be assigned for this is the fact that it coincided with the change in the regulations by which candidates may now take the Intermediate Examination of the University of Madras piecemeal. This points to the fact that youths who think that they have any chance of passing the Intermediate and so eventually qualifying as B.A.'s do not usually come to the Agricultural College,—which, I am afraid, is true. There is very little demand as yet for agricultural education for its own sake, and the Agricultural College is looked on as a cheap way into the Government service if the main way through the University fails. The year opened with a total strength of ninety-nine for four classes and closed with eighty for three classes, still in residence, the fourth class of eight having closed in December when the first batch of men taking the new four-year course completed their course. The seventh College Day and Conference was held in July with the Hon'ble Sir A. G. Cardew, K.C.S.I., in the chair. A number of interesting papers were read.

The hostel continued to work satisfactorily under the management of M.R.Ry. C. Narayana Ayyar as warden. Owing to the continued rise in the price of food stuffs it was again found necessary to raise the rates of the mess. There were two vegetarian messes, general and Telugu, and one non-vegetarian. This division into sections did not conduce to economy and in November the management of the whole mess was handed over to the students themselves on the condition that the expenses should not exceed Rs. 14 per mensem.

crushed and 175 tons of jaggery obtained. The percentage of juice obtained was 65 per cent while the ratio of jaggery to cane works out at 12.2 per cent. The contractor charged ryots Rs. 3 per pothia of 250 lb. of jaggery produced. This is equivalent to nearly Rs. 27 per ton, whereas the actual cost of running the plant,—fuel, labour and contingencies,—worked out at Rs. 15-2-2 per ton. This leaves a little less than Rs. 12 per ton to pay for supervision, depreciation and interest on capital. From further experience I am not quite so confident as I felt last year that these small installations are really an economic success. Similar plants in Mysore have rarely paid. The whole matter is receiving attention from the Government Agricultural Engineer from whom a special report is due. The second installation near Hospet in Bellary district failed to do any work during the year, mainly because repairs were not completed in time for the crushing season and the energies of the staff were diverted to the Madras Exhibition. I have taken steps to carry out a thorough trial of this plant in the present year.

Motor ploughing.—Of the two motor tractors taken over from the Department of Industries the larger was found to be beyond repairs and has been broken up. The smaller has been rebuilt with a four-cylinder motor engine and will be tried this year. Government have recently sanctioned the purchase of a tractor from America and I am in correspondence with English and Australian firms concerning their particular makes. If a tractor suitable for ploughing heavy cotton soils can be evolved I am certain that there will be a big demand for it. The great problem on these soils is to keep down baridi grass, especially after a series of wet seasons as we have recently experienced. The ryots tackle this now with a heavy iron plough taking 5 to 8 yoke of oxen to drag it, and by hand crow-barring. Mechanical ploughing at a rate not exceeding Rs. 14 or so per acre would be welcomed.

Workshop.—Work to the value of Rs. 19,207 was carried out at the workshops in Madras the greater part of this being in connexion with departmental pumping and boring sets. In addition a power drill was overhauled, the small motor tractor rebuilt, and other plant constructed, including certain tools of the Government Pencil Factory.

Miscellaneous.—The Government Agricultural Engineer designed and constructed a cotton seed grader and a useful portable measuring tank and indicator for testing the discharge of pumps. He was also working at improved iron ploughs and other agricultural implements. A patent picottah submitted by an enthusiast from Vizagapatam was tried and found to be of no practical value.

61. **Loans.**—As explained last year the special loan rules proved unworkable in practice and the appointment of the Special Tahsildar was terminated from 1st August 1917.

Of the four applications pending at the end of last year one was rejected for non-payment of investigation fees and another for Rs. 11,000 was sanctioned by Government, but transferred to the Collector of Trichinopoly for being disbursed under the ordinary rules as it did not fall entirely under the special rules. The remaining two for Rs. 4,300 and Rs. 9,000, respectively, were sanctioned, but the second remains undischarged pending the execution by the party of an agreement with the Department of Public Works regarding the building of a culvert. In the year under report six fresh applications were received, of which one has been sanctioned and Rs. 3,000 disbursed. Of the remainder two were withdrawn by the parties on hearing the high price of the plants required, two were rejected for non-payment of fees and because second-hand plants were required, and one is pending investigation by the Government Agricultural Engineer.

The question of revision of the rules was taken up and after the general principles had been decided revised draft rules were prepared and submitted to Government. These have very recently been sanctioned and published in the gazette. The continued rise in cost of plant and fuel will however prevent ryots from making much use of the facilities offered until the return of more normal conditions.

VI.—PUBLICATION AND SUPPLY OF INFORMATION.

62. The Year Book published in 1917 met with considerable appreciation and a volume for 1918 will shortly be issued. During the year Mr. A. Carruth's Bulletin on the Madras Dairy trade was published, while the work of Mr. F. R. Parnell and of Dr. C. A. Barber formed the subjects of Memoirs of the Imperial Agricultural Department.

The following leaflets have been issued during the year:—

Number.	Subject.	Prepared by	Language.	Number of copies.
VI of 1917 ...	Green-manure crops suitable for the Northern Circars and the Ceded Districts.	G. R. Hilson, Esq.	English ... Telugu ... Uriya ...	5,000 15,000 500
VII of 1917 ...	Green-manure crops suitable for the Tamil districts.	H. C. Sampson, Esq.	English ... Tamil ...	5,000 20,000
VIII of 1917 ...	Sorghum fodder on the black soils of Bellary district.	G. R. Hilson, Esq.	English ... Telugu ...	300 1,000
IX of 1917 ...	The coconut	H. C. Sampson, Esq.	English ... Tamil ... Malayalam ... Telugu ... Kanarese ... Uriya ...	3,000 10,000 2,000 8,000 2,000 200
X of 1917 ...	Songs of improved methods of paddy cultivation.	M.R. By. D. Balakrishna-murti Garu.	Do.	5,000
XI of 1917 ...	Songs on preventive methods to protect mango flowering.	Do.	Do.	5,000
XXI of 1917 ...	Hints to ryots of the Fourth Circle on green manuring.	M.R. By. J. Chelvaranga Raju Garu.	Tamil ...	5,000
I of 1918 ...	Instructions for reporting insect damage and forwarding specimens for examination.	M.R. By. T. V. Ramakrishna Ayyar Avargal.	English ... Tamil ... Telugu ... Malayalam ... Kanarese ... Uriya ...	5,000 10,000 10,000 3,000 3,000 500
II of 1918 ...	The insect pests of tobacco in Southern India.	Do.	English ... Tamil ... Telugu ... Malayalam ... Kanarese ...<	

cotton. It would seem to be a fairly simple matter to compile and issue a report of this nature, but in practice it is extraordinarily difficult to issue an accurate return. In the first place, many Indian owned presses are extremely casual over sending in returns; secondly, it is difficult to obtain correct information from district officials as to the number of presses working—gins are returned as presses, and new presses entirely ignored although they may have pressed thousands of bales in the season; and thirdly, one's clerical establishment,—having no personal acquaintance with the physical facts underlying the figures they are dealing with—are liable to issue most misleading totals unless carefully supervised. I have been giving considerable personal attention to this return and trust that it is now more accurate than formerly.

VIII.—MISCELLANEOUS.

64. *Special reports, etc.*—A number of special reports and enquiries were made in connexion with the war. I attended a conference at Simla in October regarding the supply of hay. It was decided that this should be taken over by the Forest Department, but I have been keeping in touch with the work and with the Assistant Director of Grass Farms. Some experiments were made as to the possibility of preparing crushed cholam fodder for military use, but these were dropped as supplies of hay, which is more suitable, were found to be plentiful. Other correspondences concerned supplies of rice, the possibility of manufacturing concentrated meat products, the purchase of hemp, the production of medicinal plants, and the feasibility of increasing the area under castor. In connexion with the production of medicinal plants seed of *Chenopodium anthelminticum* was received from America and successfully raised at Coimbatore and Kailpatti.

65. *Personal.*—A case of misappropriation of boring fees occurred in the office of the Supervisor of the VII Circle, the guilty party—the Supervisor's clerk—had absconded before the facts were discovered and the case against him has been handed over to the police. I enquired into the case and exonerated the Supervisors concerned from anything more serious than carelessness. The system of registers, receipts and account-keeping has been amended in the light of this case. The money misappropriated has been refunded by the Supervisor responsible.

I have mentioned in the body of this report the names of a number of officers who deserve special mention for their good work during the year. Research work is being carried on so keenly in all sections that it is invidious to make special mention of particular names. Mr. McRae's work on the diseases of Hevea rubber however deserves particular mention. The excellency of the work of Dr. C. A. Barber has been acknowledged by the bestowal of the honour of C.I.E. since the close of the year under report. It must not be forgotten that the Deputy Directors are also carrying out research work and Mr. H. C. Sampson's interesting researches on the coconut and Mr. G. R. Hilson's success in having evolved the very excellent No. 14 cotton deserve to be mentioned. Among the district officers M.R.Ry. D. Balakrishnamurti Gann and M.R.Ry. M. Govinda Kidavu Avargal continue to do excellent work, while much of the credit of the success with Company Cotton in Tinnevely must be given to M.R.Ry. N. S. Kolandaswami Pillai Avargal. Mr. R. C. Wood continues to manage the Central Farm and the Agricultural College with conspicuous success in spite of ever increasing work.

66. Final accounts for March have not yet been received from the Accountant-General. Subject to any corrections that may be necessary on this account, the expenditure and receipts during 1917-18 are as follows:—

Expenditure	...	...	...	...	...	...	...	...	7,76,336
Receipts	...	...	...	...	...	...	...	...	1,62,683
Net expenditure	...	...	...	...	...	...	...	...	6,13,653

The budget allotment for 1917-18, allowing for reappropriation and resumption by Government, was Rs. 8,99,891. Of this Rs. 54,215 was surrendered in February and Rs. 38,982 lapsed. The failure to spend the full allotment was due partly to the depletion of superior staff, i.e., the absence of Messrs. Ballard and Thomas, and the failure to recruit new Deputy Directors for whom provision had been made; partly to the vagaries of the season which resulted in the yields of cotton and daincha which we were under contract to buy from seed farms being much less than was anticipated—vide paragraph 46 above; and partly to traffic difficulties which prevented us from obtaining some Rs. 10,000 worth of fencing and other materials for the cattle farm which has been expected before the end of the year.

I have the honour to remain,

Sir,

Your most obedient servant,

G. A. D. STUART,

Director of Agriculture.

**AGENTS FOR THE SALE OF MADRAS GOVERNMENT
PUBLICATIONS.**

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 MARTINUS NIEHOFF, The Hague, Holland.