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Revenue (1898) Department.

PRESS SERIES.

G.O., Nos 22-22 A

Dated 11th January

[Despatch Abstract.]

Department of Land Records and Agriculture.

Reviewing the report on the administration of the — for 1896-97.

PRIOR PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.
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REVENUE DEPARTMENT.

1897.

Board of Revenue

(Revenue Settlement, Land Records and Agriculture),

MADRAS.

Current No. 9536

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Proceedings, No. 657, 11th October 1897.

OCTOBER.

Submitting to Government the annual report on the operations of the Department of Land Records and Agriculture during the year 1896-97.

PROCEEDINGS OF THE BOARD OF REVENUE

(REVENUE SETTLEMENT, LAND RECORDS AND AGRICULTURE).

RESOLUTION—No. 657, dated 11th October 1897.

The Board begs to submit, for the information of Government, its report on the operations of the Department of Land Records and Agriculture during the year 1896–97.

2. The permanent Director Mr. H. M. Winterbotham proceeded to England on a year's furlough in May 1896, and was succeeded by Mr. W. J. H. LeFanu, who remained in charge of the Department till the close of the year.

3. The Deputy Director, Mr. Benson, continued to be in charge of both the Land Records and Agricultural branches till the 12th March 1897, when he proceeded on a year's furlough on medical certificate. Both Departments were in charge of the Secretary, Settlement Department, from 12th to 26th March, when the ordinary duties of the Deputy Director, Land Records and Agriculture, were transferred to the Temporary Famine Secretary to the Board of Revenue. During April, May and a portion of June and September 1896, the Deputy Director was engaged at head-quarters in formulating proposals for the revision of the village manual, and in doing other miscellaneous work. From the latter month to November, he was on tour in Gódávari, South Arcot and Tanjore, in connection with the inspection of the village and taluk accounts. From November up to the date of his proceeding on leave, he was engaged at head-quarters in famine work. During the period of his stay at head-quarters, he discharged, as usual, a certain amount of Secretariat work under the Board in addition to his other duties.

(True Extract.)

Famine Secretary.

To the Secretary to Government, Revenue Department.

Fxd. P. Scotharam.

REPORT ON THE OPERATIONS OF THE DEPARTMENT OF LAND RECORDS AND AGRICULTURE FOR THE YEAR 1896-97.

Introductory.—The opening paragraph of the report on the operations of the Department of Land Records and Agriculture for 1895–96 set forth the recommendations of the two committees appointed to discuss the proposals of the Simla Conference of 1893 with regard to Agricultural Education and the utilization of Land Records, and Dr. Voelcker's report for the construction of a practical scheme of district analysis. The orders of Government on these recommendations are noted below.

2. The recommendations of the committee which sat to discuss the question of Agricultural Education were —

(1) That Agriculture should not appear as a separate subject in the curriculum of rural Primary schools, but that the effort should be to impart an elementary knowledge of it through group "Object Lessons and Elementary Science," which group should be made a compulsory subject;

(2) that Agriculture should be recognized as a separate optional subject for boys after they have passed the Fourth Standard, and that, until properly qualified teachers become available, the study of a Text-book on Agriculture in Lower Secondary schools will be better than nothing;

(3) that the first necessary step is to provide for the training of the teachers of Lowe Secondary and Primary rural schools, and that to this end every training institution, where such teachers are trained, should —

(*a*) have on its staff a master qualified to teach agriculture, and
(*b*) have attached to it a school-garden;

(4) that to secure an adequate supply of trained teachers for the rural Primary and Lower Secondary schools, an Agricultural class should be developed in selected educational institutions where the general education will be carried on up to the Upper Secondary Examination, and special education in Agriculture up to the Intermediate Standard. Such classes will need a small demonstrational farm for teaching purposes, and a portion of a Government Experimental farm may be utilized for the purpose, if there be one in the vicinity;

(5) that it is not otherwise expedient to combine a Farm-school for the above purpose, with an Experimental farm, as proposed in the scheme of the Madras Government;

(6) that the early establishment of Experimental farms, as separate organizations and designed for carrying on agricultural investigation, is advisable.

The first two recommendations were accepted by Government, but while approving of the principle of the third and fourth recommendations, Government expressed the opinion that the object in view is practically unattainable. The fifth recommendation as to the inexpediency of combining a Farm-school with an Experimental farm for teaching purposes has also been accepted, except in so far as it may be found possible to utilize a portion of such farm for the demonstration of agricultural methods and practices required for the practical instruction of such agricultural classes, as may ultimately be started in connection with normal schools. The sixth recommendation did not commend itself to Government, unless the experience gained by the management of a single Experimental farm should prove the probability of the successful establishment of additional institutions of a like nature.

3. The recommendations of the committee appointed to discuss the methods of utilizing Land Records and Dr. Voelcker's report for the purpose of constructing a practical scheme of district analysis were —

(1) That in Madras adequate provision has been made for the timely reporting of sudden calamities;

(2) that as regards any serious gradual deterioration, or decline, in a village or tract, the annual ryotwari settlement ensures its being brought to the notice of the jamabandi officer.

(3) that a vigilant and intelligent scrutiny of the village registers by the jamabandi officer, with a view to discovering the cause of any remarkable fluctuations, should continue to be insisted on;

(4) that to provide an account whereby the decline, or progress, of a village can be seen at a glance, it is desirable to compress into one page the more important of the voluminous statistics now embodied in the Revenue Inspector's firka book; and that if this is done the firka book, in its present shape, may be dispensed with;

(5) that it answers no useful purpose to require of Collectors an annual report on the economic condition of their districts as disclosed by a scrutiny of the Land Records, and that in the absence of extraordinary change, such a report cannot be usefully submitted oftener than once in ten years;

(6) that the statistical atlas, now in course of publication, will exhibit a sufficient analysis of each district, in respect of the great agricultural defect, "deficiency of rainfall and absence of irrigation;"

(7) that defects in irrigation, and in the supply of wood and fuel are being adequately investigated by the Revenue, Public Works and Forest Departments;

(8) that a list of the other principal agricultural defects should be drawn up, and that these should be gradually investigated in the order of their importance;

(9) that Experimental farms are necessary for the ascertainment by agricultural experts of how far defects in agricultural practice are remediable; and that, in Madras, action in this direction is more pressing than in the direction of improving Land Records;

(10) that in view of the extreme importance of securing continuity of expert supervision, in the event of Experimental farms being started, immediate steps should be taken to secure the services of a second agricultural expert to provide for the contingency of Mr. Benson taking furlough, or retiring;

(11) that if, and when, Mr. Benson leaves the service, the original plan of appointing a Civilian Deputy Director of Land Records may be revived;

(12) that, meanwhile, as Mr. Benson has now devoted a year to the study of village and taluk accounts, it is best to leave him in charge of the office of Deputy Director of Land Records without prejudice to his supervising any agricultural work which may be undertaken;

(13) that with reference to the scheme laid before the Government of India for a permanent staff for the maintenance of Survey Records, and training of karnams (*vide* G.O., No. 635, Revenue, dated 17th September 1895), it should be considered whether the strength of the establishment may not be gradually increased, as vacancies occur in the posts allotted to eight European officers, by replacing them, at the same cost, by twelve native Deputy Collectors.

One superior officer would then be available for every two districts and with this increase in numbers it would be possible for them to assist in the supervision of the taluk and village accounts;

(14) that, meanwhile, the Board's proposal for the appointment of three officers of the grade of Deputy Collector to assist in inspecting taluk and village accounts (*vide* B.P., No. 348, R.S., L.R. and Agri., dated 1st November 1895) may be approved;

(15) that after the Deputy Director, or one of the proposed Assistant Directors, has inspected the Land Records of a district, he should submit his report, not to the Board as hitherto, but to the Collector of the district, the Board to be referred to only when a specific general ruling is called for;

(16) that the Collector should devote a paragraph in his jamabandi report to stating the results of the inspection, and the action taken by him thereupon.

The first eight recommendations were accepted by Government. The ninth recommendation was accepted, subject to the limitation that only one Experimental farm should be established until the success of the experiment is assured. With regard to the tenth, eleventh and twelfth recommendations Government considered that it was unnecessary to entertain a second agricultural expert for the purpose specified, that the retention of a Deputy Director of Land Records was a matter of doubtful expediency, but one which would be considered with the proposals for the re-organization

of the Survey Department and the Board of Revenue, and that, as the experiment of establishing a Government farm or Government farms would fully occupy the time of the present agricultural expert it would be impossible for him to remain in charge of the office of the Deputy Director of Land Records. The thirteenth and fourteenth proposals were negatived, while the fifteenth and sixteenth were approved, conditionally upon the retention of the office of the Deputy Director of Land Records.

4. The form of report herein adopted follows the model of previous years. With reference to paragraph 14 (iii) of G.O., Mis. No. 487, Rev. dated 24th September 1896, the Director hopes to submit his proposals for amending the form of the report at an early date.

The instructions on the subject which Sir E. Buck led the Board to expect have not been received.

I.—ORGANIZATION AND MAINTENANCE OF VILLAGE RECORDS.

5. *Land Records.*—Proposals were submitted by the Deputy Director to the Board in the Land Revenue Department for the improvement of taluk manual accounts Nos. 4 to 7 and regarding the distribution of collections between land revenue and cesses. During the latter part of June and the whole of July the taluk accounts of three taluks in Gódávari district, as well as the village accounts of a few selected villages in each taluk, were inspected and reported on. In August, two taluks of South Arcot district were visited and similar inspections were made and reported on. Early in September the Deputy Director was at head-quarters and was chiefly engaged on miscellaneous duties not belonging to the Land Records branch, and also in preparing the report on the inspected taluks. During October, two taluks in Tanjore district were visited and the taluk accounts, including the village accounts of a few villages, were inspected and reported on. In November, the Deputy Director returned to head-quarters and was thereafter engaged chiefly in famine work, until his departure to England on furlough under medical certificate in March 1897.

6. *Training of Karnams.*—In accordance with the scheme of holding annual survey schools, introduced in the preceding year, such schools were held during 1896–97 in 127 out of 156 taluks in the Presidency. The number of men instructed at these schools was 12,913, of whom 6,688 or about 52 per cent. were found, on examination, to possess good or fair knowledge. The taluks in which no schools were held are noted in the margin. No schools were held in the first-mentioned eighteen taluks owing to the unfavourable season which rendered it necessary to keep karnams in their villages at the time when the schools should have been held. In Trichinopoly, the karnams in all taluks were engaged during a portion of the year in the measurement of sub-divisions of survey fields and in the preparation of field measurement books. It was therefore considered inexpedient to hold survey schools for their instruction. In four out of the five taluks in Salem, karnams were employed on re-survey work and no schools were therefore held. In the remaining taluk—Dharmapuri—a school was opened on the 23rd October but had to be closed after a few days owing to the prevalence of cholera.

Districts.	Taluks.
Ganjám	1. Berhampur. 2. Gumsur.
Anantapur	3. Anantapur. 4. Hindúpur. 5. Dharmavaram. 6. Penukonda.
Bellary	7. Rayadrug. 8. Bellary. 9. Adóni.
Kurnool	10. Pattikonda.
Cuddapah	11. Proddatur. 12. Pulivendla. 13. Badvel.
North Arcot	14. Wallajapet.
Nellore	15. Nellore. 16. Kanigiri.
Chingleput	17. Chingleput. 18. Tiruvallúr.
Salem	19. Atur. 20. Námakkal. 21. Tiruchengódu. 22. Salem. 23. Uttangarai. 24. Dharmapuri.
Trichinopoly	All taluks (5).

7. *Training of Revenue Inspectors.*—The total number of Revenue Inspectors in the Presidency during the year was 633. Of these 601 appointments were held by men who had undergone training in survey. Two had been exempted from passing the test, and two more continued to draw the old scale of pay. The remaining appointments were held by acting men untrained in survey. Details are given below:—

Districts.	Number sanctioned.	Number		Remarks.
		Trained in survey.	Not trained.	
Ganjám ..	12	12	..	
Vizagapatam ..	9	9	..	
Gódávari ..	48	47	1	Vacant.
Kistna ..	48	47	1	
Nellore ..	32	32	..	
Bellary ..	28	26	2	Draw pay at the old rate.
Kurnool ..	30	27	3	
Anantapur ..	24	22	2	
Cuddapah ..	41	41	..	
Chingleput ..	22	22	..	
Madras ..	8	3	..	
North Arcot ..	38	38	..	
South Arcot ..	41	41	..	
Tanjore ..	37	33	4	
Trichinopoly ..	24	23	1	
Madura ..	30	28	2	
Tinnevelly ..	36	32	4	
Salem ..	35	32	*3	
Coimbatore ..	38	38	..	
Nilgiris ..	6	4	2	
Malabar ..	34	31	3	
South Canara ..	17	13	4	
Total ..	633	601	32	

*Two old school men.

8. *Re-surveys.*—Re-survey was commenced during the year in the taluks of Guntúr and Nandigáma in the Kistna district and in Ramallakot and Nandikotkur in the Kurnool district. The area re-surveyed amounted to 780 square miles in the former district and 294 square miles in the latter. The work in the latter district was delayed by the prevalence of famine which rendered it impossible to spare karnams for the work, except in a few villages.

II.—ANALYSIS OF DISTRICTS.

9. *Statistical Registers.*—So far as information is available, the village statistical registers and the firka books have been written up and checked in Ganjám, Vizagapatam, Gódávari, Bellary, Anantapur, Cuddapah, Coimbatore, Trichinopoly, Tanjore and Nilgiris up to fasli 1304. In South Arcot and Madura, the work is in arrears as regards 19 and 194 villages respectively, while Tinnevelly has almost completed the work, there remaining only 5 villages for which village registers and firka books are to be prepared and 13 villages for which they are to be checked. As regards the work done in this direction during fasli 1305 (1895–96) it would appear that the posting and checking have been completed in the Gódávari, Bellary, Anantapur, Salem and Tanjore districts, and nearly so in Ganjám, Vizagapatam, Kistna, Nellore and Coimbatore. Particulars of progress are shown in the table given below :—

Districts.	Number of Villages (Government and Inam).				
	In the district.	For which village registers have been		For which firka books have been	
		Prepared.	Checked.	Prepared.	Checked.
Ganjám ..	1,631	1,631	1,195	1,531	1,527
Vizagapatam ..	294	270	270	293	293
Gódávari ..	1,449	Complete.		Complete.	
Kistna ..	1,368	1,356	1,354	1,354	1,352
Kurnool ..	789	766	668	703	578
Bellary ..	962	Complete.		Complete.	
Anantapur ..	1,002				
Cuddapah ..	1,354	1,293	1,293	1,255	1,187
Nellore ..	931	907	907	Complete.	
Chingleput ..	1,782	1,739	1,465	1,695	1,695
South Arcot ..	2,699	2,671	2,652	2,448	2,066
North Arcot ..	1,767	1,767	1,583	1,767	1,583
Salem ..	3,081	Complete.		Complete.	
Coimbatore ..	1,508	1,481	1,481	1,483	1,483
Trichinopoly ..	730	719	719	717	717
Tanjore ..	2,541	Complete.		Complete.	
Madura ..	937	690	597	632	459
Tinnevelly ..	1,099	1,052	1,010	766	724
Nilgiris ..	48	36	17	48	29

10. A report on the economic condition of the district as disclosed by the examination of village registers and firka books for fasli 1303 was received during the year from Salem, the only district from which no similar report had been previously submitted. It was reviewed and submitted to Government in due course. The Government agreeing with the views of the local conference of December 1895 has ordered that the reports on the economic condition of districts be decennial instead of annual as hitherto, and instructions have accordingly been issued to all Collectors requiring them to make such arrangements as will ensure the submission of the report to the Board before the close of the next census year (1901) embodying in the same all the information necessary for the revision, up to the close of the preceding fasli year, of the district memoirs published in the statistical atlas of the Presidency. Revised sheets of firka books were issued during the year agreeably to the proposals of the conference, which were approved by Government. Collectors have been requested to have the entries in them posted from fasli 1301 and to submit progress reports once in six months until all arrears have been cleared up.

III.—COLLECTION OF REVENUE IN PRECARIOUS TRACTS.

11. Owing to serious failure of rains, parts of the Deccan districts—Kurnool, Cuddapah, Anantapur and Bellary—and of Ganjám and Vizagapatam in the north suffered extensive loss of crop. Besides the remissions granted under the usual rules on *wet* lands, the assessment on *dry* lands was remitted to a large extent in the distressed portions of the Deccan districts; and the collection of the remaining demand was also postponed. In Ganjám, remission on "dry" lands was granted only in respect of certain areas cultivated with rain-fed paddy, the crop on which was lost. In Vizagapatam no remission of dry assessment was deemed necessary.

In Anantapur, which is one of the districts most liable to famine, the kistbandi, or scheme of instalments for paying Government revenue, was altered during the year, the first instalment being postponed from December to February.

IV.—MEASURES OF PROTECTION AND RELIEF.

12. *Season and Rainfall.*—The season was generally favourable for agricultural operations, except in the Deccan districts and in parts of Ganjám, Vizagapatam, North Arcot and Salem. In the Nilgiris, the season was unfavourable to coffee, tea and ordinary native crops.

The average rainfall for the Presidency was 47·54 inches against 49·62 inches registered in 1895–96 and 44·80 inches, the average of 25 years ending with 1894–95.

The average rainfall from April to September (south-west monsoon) amounted to 29·37 inches against 32·77 inches in the previous year, and was about an inch more than the normal. The falls were, however, very unevenly distributed. In the West Coast districts and on the Nilgiris the rainfall was from 20 to 25 inches in excess of the average, while in most of the other districts there was considerable deficiency. The monsoon set in fairly well, and, from June to August, the rains were, on the whole, nearly up to the average, except in the Carnatic districts (excluding Nellore) and North Arcot, Salem and Trichinopoly. The fall in September proved scanty in the Circars and in the Deccan districts and was light in the Carnatic, while in the remaining districts it was good and was followed by copious rain in October. At the close of the south-west monsoon period, the state of the season gave cause for anxiety in respect of the Deccan districts, parts of the Circars, the Carnatic and the Central districts and parts of North Arcot. The north-east monsoon commenced late, but the rainfall was copious over the whole of the southern half of the Presidency. The average for the Presidency from October to March was 18·17 inches or 1·32 inches more than in the previous year and 1·75 inches more than the normal fall. All anxiety was then removed as regards the Carnatic and the Central districts, the Kistna and the greater portion of the Gódávari district. The tracts which continued to give anxiety at the close of the north-east monsoon were Ganjám and parts of the Vizagapatam littoral, some of the upland portions of Gódávari, especially the Agency tracts, that portion of the Deccan districts which lies to the west of the Eastern Ghauts and a small portion of North Arcot.

The prices of food-grains, which have been steadily falling since the famine of 1891–92, rose very considerably during the year under report. The rise was due

partly to the season having proved unfavourable in Ganjám, Vizagapatam and the Deccan districts and partly to the large exports of grain northwards to Bombay and Central Provinces as well as to Ceylon. Until June, the prices were normal; a slight rise was perceptible in July, August and September but nowhere was the rise serious. During the latter half of September, however, the upward tendency of prices became more pronounced, and in October and November the rise became rapid almost throughout the Presidency. The showers of November and December and the harvests that followed brought down the prices for a time, but towards the close of the year the upward tendency had again begun to manifest itself. At the end of March, the prices of staple food-grains were higher than the "scarcity" rates in the Deccan districts and higher than the "warning" rates in all other districts except South Arcot, Trichinopoly, Tanjore, Madura, Tinnevelly, South Canara and the Nilgiris.

The deficient rainfall and consequent extensive local failure of crop, coupled with the excessive rise in prices, stimulated by the existence of scarcity in other parts of India, gave rise to great distress among the labouring classes, and State relief had to be provided for them. Test works opened in the Deccan districts in November having attracted large numbers, ordinary relief works were started from time to time as the area of distress extended. The affected tracts which, at the end of November, covered an area of 8,495 square miles with a population of 1,206,000, comprised, at the end of the official year, an area of 15,988 square miles with a population of 3,271,000, and embraced roughly speaking, the taluks occupying the north-western part of Cuddapah, and the northern half of Anantapur, the taluks of Kurnool immediately adjoining the above, the eastern and northern taluks of Bellary and portions of Ganjám and Vizagapatam littoral. Relief works were started in Ganjám in February and in Vizagapatam about the middle of March.

The measures of relief which were in operation at the close of the year were—

(1) relief on works;

(2) gratuitous relief by the distribution of cooked food in kitchens, and by the grant of money doles (in Ganjám only);

(3) relief of weavers at their own trade;

(4) grant of advances under the Land Improvement and the Agriculturists' Loans Acts; and

(5) suspension of land revenue.

The numbers relieved at the end of the year were—

(*a*) On works, 86,385.

(*b*) Gratuitously, 5,858.

(*c*) Weavers, 8,806.

13. *Extension of Communications.*—The East Coast Railway has been opened for public traffic from Bezwada to Cuttack road, a length of 498·94 miles, with a branch line from Kurda road to Puri (25·34 miles), thus making a total length of 524·28 miles. Work on the Nilgiri Railway (16·81 miles) was resumed in April 1896 and good progress was made during the year. The Ennur-Bezwada section of the Bezwada-Madras Railway (254½ miles) is in good progress, and a portion from Bezwada to Bápatla (40 miles) is almost finished, and ready for opening. The Peralam-Karikal Railway (14·45 miles) is under construction by the South Indian Railway on behalf of the French Government. The Arsikere-Mangalore Railway Survey has been completed and the plans and estimates have been forwarded to the Government of India.

14. *Irrigation.*—An expenditure of Rs. 2·04 lakhs was incurred during the year on the Rushikulya project in the Ganjám district. The Suradá reservoir nearly approached completion, while its head sluice and channel therefrom to the Johoro river, as well as several distributaries, were fully completed. The total outlay on the project up to the end of the year was Rs. 41·11 lakhs. The outlay on improvements to the Kistna delta system during the year was Rs. 5·84 lakhs, and to the end of the year Rs. 119·61 lakhs. The new head sluice at Sítanagaram, which was commenced in the preceding year to replace the existing head sluice, was brought up to platform level during the year. Investigations for the proper distribution of flood water and of water for irrigation in the Cauvery delta system were prosecuted during the year, and estimates, aggregating Rs. 7·86 lakhs, for improvements to the Upper Coleroon

anikat, and for fitting lift shutters to the grand anikat, were prepared. Rs. 0·42 lakhs were expended on works connected with the improvements to the system. The net outlay on the Periyár project in the Madura district during the year was Rs. 0·44 lakhs, after deducting a recovery of expenditure on tools and plant of Rs. 0·86 lakhs. Up to the end of the year, 36 miles of main canals and 50 miles of branch channels were completed, and a considerable number of distributaries were completed or in progress.

The minor irrigation works under the charge of the Revenue department number over 30,000, having an irrigable area of about 1½ million acres. The amount sanctioned for their repairs during the year was Rs. 4·74 lakhs, out of which 4·29 lakhs were actually expended.

15. *Advances to Agriculturists.*—The loans granted during the year under report under the Land Improvement and Agriculturists' Loans Acts, amounted to Rupees 5,52,607 against Rs. 2,03,472 advanced in the previous year. The large increase, as compared with the preceding three years, was due to the unfavourable character of the season during the latter part of the year in Ganjám, Vizagapatam, Cuddapah, Kurnool, Bellary and Anantapur. Out of the 7½ lakhs of rupees sanctioned for the year, 5 lakhs were specially allotted for the Madura district in view to afford facilities for the reclamation of waste lands commanded by the Periyár project; but the amount actually advanced on this account was only Rs. 45,361. More than 48 per cent. of the total amount was advanced in the Deccan districts and 18 per cent. in the North Arcot and South Arcot districts, as shown in the margin.

Deccan Districts.	RS.	A.	P.
Kurnool	31,807	8	0
Bellary	1,10,738	5	10
Anantapur	1,17,535	0	0
Cuddapah	5,376	9	2
Total ...	2,65,457	7	0
North Arcot	78,336	1	6
South Arcot	21,784	0	0
Total ...	1,00,120	1	6

The following statement shows the amounts advanced under the Land Improvement and Agriculturists' Loans Acts during the past five years:—

Years.	Budget allotment under both Acts.	Advances made under		Total advances.
		The Land Improvement Loans Act.	The Agriculturists' Loans Act.	
	RS.	RS.	RS.	RS.
1892-93	23,00,000	20,41,809	2,33,350	22,75,159
1893-94	10,00,000	4,40,312	10,609	4,50,921
1894-95	7,00,000	2,63,709	15,882	2,79,591
1895-96	3,00,000	1,91,521	11,951	2,03,472
1896-97	7,50,000	5,04,454	48,153	5,52,607

V.—AGRICULTURAL EDUCATION AND EXPERIMENTS.

16. *Agricultural Education.*—The work of the College of Agriculture at Saidapet has been separately reviewed, and, with the exception of certain crop and dairy experiments of general interest, calls for no further notice in this report. With a view to popularize the institution, Government has again urged all Collectors to do their best to provide employment for passed students of the College. The Principal of the College has reported that the result of his circulation among the Collectors and District officers of a statement showing the names of passed students seeking employment was satisfactory.

17. The College farm continued during the year under report to be worked chiefly for the edification of the students. The Principal gives the following interesting account of the results of the year's cultivation, and of the yield of milk given by the farm cows:—

(1) "The paddy is divided into seven classes according to method of cultivation and to the fact whether it was damaged or not by flood. It will be observed that the students must have seen paddy cultivated in a variety of ways. The paddy which

was drilled and which escaped damage by flood yielded 3,712 lb. per acre of grain and 3,360 lb. of straw. The yield of grain must be considered *excellent*. The land on which this crop was grown may be said to be the best soil on the farm, but it is far inferior to soils in the Tanjore district from which a yield of 3,000 lb. would be considered very good. The paddy which was transplanted and which also escaped damage by flood may also be said to have yielded excellently (2,203 lb. per acre) when the nature of the soil is considered. The paddy which was transplanted but which was damaged by flood had its yield of grain decreased by about 300 lb. and its yield of straw increased by about 600 lb. The paddy sown broadcast dry on very poor soil yielded well (1,141 lb. per acre). Great damage was done by flood to the paddy growing on 8 acres of land, the crop having been submerged for days under running water. Of course, the yield was very considerably decreased.

(2) "The ragi transplanted and grown under irrigation yielded very well—grain per acre 960 lb.; straw per acre 4,633 lb. That drilled and grown as a dry crop was very much damaged by heavy rain and yielded badly in consequence. The varagu (sown with dholl) did fairly well.

(3) "The pulse crops were seriously damaged by the heavy rains of November and December—the green-gram was practically destroyed.

(4) "Among the industrial crops, Sea Island cotton deserves to be specially mentioned. The yield per acre was 1,200 lb. of cotton in seed (360 lb. lint and 840 lb. seed). The average yield in this Presidency on the so-called black cotton soil is 50 lb. to 70 lb. lint and 150 lb. to 200 lb. seed. The Sea Island cotton as a good staple and the lint is easily separated from the seed. There appears to be no difficulty about its cultivation. The only disadvantage it possesses is the height of the plant which necessitates a crooked stick being used in gathering the higher bolls. The farm on sandy soil obtained a yield about six times as large as that raised on black cotton soil. It would be interesting if really efficient experiments were to be conducted with the farm seed in the districts where black cotton soil is found. The sugarcane was submerged for some days and very much damaged in consequence. The ground-nut shown as harvested in this report was put down in August 1895. One-third of the crop was given for harvesting and 640 lb. per acre represents therefore two-thirds of the total produce. The yield must be considered poor.

(5) "Among sundry crops, plantains did fairly well in spite of an unfavourable season. The fruit and leaves from half an acre fetched over Rs. 30. The vegetables were much damaged by heavy rain and in some cases completely destroyed. In an ordinary season the cultivation of vegetables is very profitable and were the farm worked for profit it would be desirable to largely increase the area under vegetables. They respond well to careful cultivation and there is no difficulty about their disposal.

Crops.	Area sown.	Outturn. Grain or seed. Amount.	Grain or seed. Per acre.	Straw or fodder. Amount.	Straw or fodder. Per acre.	Remark.
Cereals.	ACS.	LB.	LB.	LB.	LB.	
Paddy transplanted (not damaged by flood).	3·50	7·710·5	2,203	8,800	2,514	
Paddy transplanted (damaged by flood).	1·60	3,026	1,891	5,040	3,150	
Paddy sown broadcast, wet system (damaged by heavy rain).	1·00	1,031	1,031	2,400	2,400	Inferior variety sown, so slightly saltish.
Paddy drilled (not damaged by flood).	3·00	11,136	3,712	10,080	3,360	
Paddy drilled (damaged by flood) ..	5·25	6,233	1,188	15,680	2,987	
Paddy drilled, inferior variety in sandy soil.	3·00	1,513	504	5,040	1,680	
Paddy broadcast, dry, sandy soil ..	3·30	3,766	1,141	7,840	2,376	
Ragi drilled, dry crop	2·50	598	239	3,360	1,344	Crop while young suffered severely from excessive rain.
Ragi transplanted and under irrigation.	4·77	4,580	960	22,101	4,633	
Varagu (sown with dholl)	3 50	2,170	620	5,888	1,682	Dholl standing.

Crops.	Area sown.	Outturn. Grain or seed. Amount.	Grain or seed. Per acre.	Straw or fodder. Amount.	Straw or fodder. Per acre.	Remarks.
Pulses.	ACS.	LB.	LB.	LB.	LB.	
Black gram	2·75	1,190	433	..	..	Crop suffered while in flower owing to continuous heavy rain.
Green gram	1·90	140	74	..	..	Do. do.
Dholl (sown with varagu).	6·20	1,170	189	..	..	Varagu harvested last year and shown in last year's report.
Industrial.						
Sugarcane	1·00	Sold by auction for Rs. 152-8-0.				Crop submerged during the heavy rains of November and December, and much damaged. Over quarter of an acre reserved for seed and still standing.
Ground-nut (not yet harvested).	3·30	..	..	5,376 (haulms).	1,629 (haulms).	....
Ground-nut (harvested).	1·00	640	640	..	..	Haulms shown in last year's report.
Sea Island cotton ..	·10	120 lb. cotton in seed.	1,200 lb. cotton in seed.	..	..	....
Sundries.						
Plantains	·50	1,500 (fruit).	3,000 (fruit).	Leaves worth Rs. 8.	Leaves worth Rs. 16.	Crop still standing, green plantain sold at 3 pies a pound.
Chillies	·15	Dry chillies worth Rupees 10.	Dry chillies worth Rupees 66-10-8.	..	..	....
Do.	·25	..	..	..	..	Crop standing.
English and Indian vegetables.	2·00	Vegetables worth Rupees 83-6-0.	Vegetables worth Rupees 41-11-0.	..	..	Vegetables very much damaged by heavy and incessant rain.
Green fodder.						
Cholam	23·45	..	..	1,17,855	5,026	One cutting only, damaged by heavy rain.
Horse gram	11·55	..	..	21,212	1,836·5	Sown late owing to heavy rain, crop standing in ·75 acre.
Guinea grass	2·00	..	..	7,411	3,705·5	....
Lucerne	·10	..	..	275	2,750	From one cutting only crop still standing.
Green manure.						
Sunn hemp	1·60	..	..	..	..	Ploughed in.
Horse gram						
Indigo						
Dholl	1·90	..	..	..	..	Ploughed in.

(6) "Eleven cows yielded milk during the year against twelve during the previous year. Meenachi I (16 years old) was sold on account of age. The yield of milk increased by 1,929 lb. (517 Madras measures). Tara (No. 2), the second best milker on the farm, slipped her calf, and milked without a calf at foot for 346 days. Her yield in consequence was much reduced.

(7) "Although the number of cows was decreased by one and the yield of milk was increased by 1,929 lb., the average yield, as worked out in previous report, decreased to 8·15 lb. This furnishes another proof of the inutility of the averages arrived at by the method adopted above, in disapproval of which I have several times expressed myself. The 'average for the herd' is best obtained, I think, by dividing the total yield by 11 (the number of cows) × 365. By this process the average works out as 5·97 lb. I do not think it practicable to give effect to the suggestion made in paragraph 2 of B.P., No. 6035, dated 27th November 1896. In any case, I consider too much has been made of the 'average yield.' In practice, a herd would be judged on various grounds and the 'average yield' during any given year would not be reckoned of much, if any, consequence.

(8) "The income from the sale of milk, butter, &c., decreased by Rs. 120 The explanation of this is as follows:—1st, during the year under report the farm did not maintain any buffaloes. Two buffaloes were kept during the previous year. They

yielded 465 measures of milk, which realized Rs. 87. These animals were most troublesome and it was not worth while to employ a separate man to look after them. I consequently decided not to keep any buffaloes during 1896–97. 2nd, in May 1895, the prices of milk, butter and curd were kept at the following rates:—As. 3–6 per measure, As. 12 per pound, As. 1–6 per measure, respectively. In May 1896, it was not practicable to maintain these rates and they were consequently reduced to As. 2–8 per measure of milk, As. 8 per pound of butter and Anna 1 per measure of curd. 3rd, in 1895–96, all sums due for milk, butter, &c., were recovered during the year, but in 1896–97 Rs. 92–2–10 stood over as balance. I may add that the whole of this sum will be recovered before 1st July next, except Rs. 8–11–10, about which, I fear, there will have to be legal proceedings.

(9) "The following statement gives the yield of milk. All the cows are pure-bred Nellores, with the exception of Kali II, which is a cross between Nellore and Mysore:—

STATEMENT showing the yield of milk in the College Farm herd during 1896–97.

No.	Name of cow.	Age of cow.	Yield in 1896–97.		Number of days cow yielded.	Average per day in	
			Madras measures of 100 cubic inches.	Pounds.		Madras measures.	Pounds.
1	Kalyani I *	YEARS.					
2	Tára *	13	1,086·125	4,051·246	326	3·332	12·428
3	Kalyani III *	8	526 375	1,963·379	346	1·521	5·673
4	Parvati *	7	464·125	1,731·186	224	2·072	7·729
5	Alamelu *	6	400·625	1,494·331	220	1·821	6·792
6	Narayani *	6	556 250	2,074·813	344	1·617	6·031
7	Seetha *	9	880·375	3,283·799	363	2·425	9·045
8	Meenachi II *	7	284·500	1,061·185	144	1·975	7·367
9	Do. I *	8	562·125	2,096·726	238	2 362	8·810
10	Sahib's cow *	16		Sold.			
11	Kali II †	13	838·625	3,128·071	364	2·304	8·594
12	Govindu *	12	722·125	2,693·526	304	2·375	8·859
		9	102 375	381·859	66	1· 55	5·785
	Total ..		6,423·625	23,960·121	2,939	..	..

* Nellore. † Cross bred, Nellore and Mysore.

(10) "In paragraph 8 of your Proceedings, No. 10116, of 14th September 1896, you desired certain calculations to be made, so that 'the public may form some idea as to the amount of net income that can be derived from a well-nourished cow of good breed.' With this object in view I shall work out the actual expenses of, and the actual income from, the best milker on the farm and also from one of the medium milkers for last financial year. In both cases, the whole milking period fell within the financial year.

(11) "*Kalyani I.*—This animal milked for 326 days and yielded 1,086 Madras measures. While milking her daily feed was as follows:—4 lb. cake, 4 lb. dholl husk, 2 lb. wheat bran, 2 oz salt, 20 lb. paddy-straw (or its equivalent). During her milking period of 326 days, she therefore consumed 1,304 lb. cake, 1,304 lb. dholl husk, 652 lb. wheat bran, 40¾ lb. salt, 6,520 lb. straw. When dry she got only 15 lb. straw and in 39 days consumed 585 lb.

"Her total cost of feeding was, therefore,—

	Rs.	A.	P.
1,304 lb. cake, at Rs. 12–12–0 per 500 lb.	33	4	0
1,304 lb. dholl husk, at 40 lb. per rupee	32	9	7
652 lb. of wheat bran, at 30 lb. per rupee	21	11	9
40¾ lb. salt = 13 1/12 measures, at As. 2 per measure	1	11	2
6,520 lb. straw, at Rs. 10–8–0 a ton	30	9	0
585 lb. straw, at Rs. 10–8–0 a ton	2	11	11
Total ...	122	9	5

"Attendance may be estimated at Re. 1 a month, that is, Rs. 12 a year. Roughly speaking, the cost of maintaining such a cow may be put down as Rs. 135. Her produce for the year was as follows:—

	Rs.	A.	P.
1,086 measures of milk, at As. 3–6 a measure	237	9	0
Value of 4 tons of manure	12	0	0
Value of calf	15	0	0
Total ...	264	9	0

The profit, excluding depreciation, is, therefore, about Rs. 130.

(12) "*Kali II.*—This animal gave 722 measures of milk in 304 days. During this period she received a daily ration of 3 lb. cake, 3 lb. dholl husk, 2 lb. wheat bran, 2 oz. salt and 20 lb. paddy straw, or its equivalent. During the 61 days she was dry she received 15 lb. straw a day. A similar calculation as that made for Kalyani I gives the total cost of maintaining Kali II as follows:—

	Rs.	A.	P.
912 lb. cake (3 × 304), at Rs. 12–12–0 per 500 lb.	23	4	1
912 lb. dholl husk (3 × 304), at 40 lb. per rupee	22	12	10
608 lb. wheat bran (2 × 304), at 30 lb. per rupee	20	4	3
38 lb. salt = 12⅔ measures, at As. 2 a measure	1	9	4
6,080 lb. straw (20 × 304), at Rs. 10–8–0 a ton	28	8	0
915 lb. straw (15 × 61), at Rs. 10–8–0 a ton	4	4	8
Total ...	100	11	2
Add attendance ...	12	0	0
Grand Total ...	112	11	2

"Her *produce* was as follows:—

	Rs.	A.	P.
722 measures of milk, at As. 3–6 per measure	157	15	0
Value of 4 tons manure	12	0	0
Value of calf	12	0	0
Total ...	181	15	0

The profit, excluding depreciation, is therefore, about Rs. 69.

(13) "I have assumed that all the milk was sold for As. 3–6 a measure. No doubt were the farm a private venture and were therefore able to take certain steps to dispose of its produce, *all* the milk could be sold at the price mentioned. The farm durng all months of the year, except May and June, sells its milk at As. 3–6 a measure to customers, who are not students of the College, and at As. 3 a measure to students of the College; during May and June the price is usually As. 2–8 a measure. As regards butter, the price varies on the farm from As. 8 to Rs. 1–8–0 a pound.

(14) "No doubt a private firm, producing a fairly large quantity of good butter, could obtain Re. 1 or As. 14 for a pound all the year through. It requires from five to six measures of farm milk to make a pound of butter."

18. As noted in the opening paragraphs, Government has determined that only one Experimental farm should be started at first deferring any extension of the scheme till the success of the preliminary venture is assured. Owing to famine work, and the departure on furlough of its only agricultural expert, the Board is obliged to allow the opening of the farm to stand over for the present.

19. *New Crops.*—No further experiments were made with Cape oats and barley, the climate of Ootacamund having shown itself unsuitable for both the crops. The Collectors of the Nilgiris and Madura were supplied with Seoni pissi and wheat in October last, but no reports of the results of the cultivation of the seeds have been received from them.

Fresh supplies of Sida seeds were forwarded to the Principal of the Agricultural College towards the close of the year with a request that he would make further experiments. No report on the subject was received within the year.

20. *Bulletins.*—The following bulletins were issued during the year:—

No. 33.—On the use of iron ploughs in the Ceded districts.

No. 34.—Tamil sayings and proverbs on agriculture.

21. *Outturn Experiments by Revenue officers.*—The results of the experiments conducted during the year by the Divisional officers and Tahsildars are as far as ever from furnishing any trustworthy data from which an average yield per acre can be calculated, or the correctness of the settlement estimates of outturn can be gauged. The Board has recently submitted its quinquennial report on these experiments, with its views thereon—*vide* B.P., No. 633, dated 23rd September 1897.

22. *Agricultural Implements and Machines.*—No demonstrations of any kind were conducted during the year as the Agricultural Inspectors and the Sub-Assistant Director were engaged in investigating the different varieties of cholam, cotton and indigo grown in Coimbatore, Madura, Trichinopoly and the Ceded districts and the various methods of cultivation. The Inspectors were not, however, able to complete the enquiry as they were called away for famine duty in the Deccan districts.

23. *Water-lifts.*—Further experiments were sanctioned, but were not carried out owing to the Deputy Director being employed on famine duty. Some useful experiments were conducted by Mr. Chatterton, Professor in the College of Engineering, and, after the close of the year, his conclusions were issued in the form of a bulletin with a brief preface by Mr. Benson.

24. *The Madras Agri-Horticultural Society.*—The total income of the Society amounted to Rs. 10,637, of which Rs. 4,000 was contributed by Government and Rs. 1,842 by subscriptions. The sale of seeds and plants also contributed to a certain extent to the income. During the year the number of members rose from 78 to 79. The annual show of flowers, fruit and vegetables was held on the 29th February 1896 and was, as usual, a great success. The library of the Society was strengthened by gifts and purchase, and many new plants were added to the gardens. The usual system of exchanging seeds and plants was continued.

25. *Collections for the Imperial Institute.*—The requisitions of the Reporter on Economic Products for a variety of specimens of plants, seeds, oils, fibres, &c., were complied with to the best of the Board's ability.

VI.—CATTLE-BREEDING AND THE CIVIL VETERINARY DEPARTMENT.

26. *The Civil Veterinary Department.*—During the year under review, Veterinary-Lieutenant A. E. Clarke continued to be Superintendent of the Civil Veterinary Department till the 22nd April 1897, when he reverted to military service, and was succeeded by Veterinary-Lieutenant Edwards. Mr. Clarke spent 135 days on tour and 179 at head-quarters. Out of the latter period, he devoted 41 days to a course of 32 lectures and 9 classes at the College of Agriculture, Saidapet.

27. A description of the breeds of cattle in the five districts selected for Bacteriological Survey has still to be prepared. The Superintendent's attention has been drawn to the matter.

28. Of the thirteen Stock Inspectors in service at the beginning of the year, six were dispensed with in accordance with the directions contained in G.O., No. 3891, dated 29th September 1896, communicated to the Superintendent, Civil Veterinary Department, in B. P., No. 273, dated 14th October 1896, while a clerk on Rs. 20 was added to the Superintendent's office establishment.

29. *Pony-breeding.*—Of the fourteen stallions that were at work at the commencement of the year, one died and another was sold. Three new stallions were purchased by the Inspector-General, Civil Veterinary Department, and added to the stock. Thus, at the close of the year, there were fifteen stallions, of which eight were stationed in Coimbatore, six in Salem, and 1 in Madura. The past year shows the greatest number of coverings (470) made in the last five years. But the average number per stallion, working throughout the year, excluding the stallions which worked during part of the year only, is only 36·8 against 39·5 of the previous year. The short work is generally attributed, in Coimbatore, (1) to the disinclination of the people to send their mares to the stallions in June and July, the mares being in poor condition at that season, and there being a difficulty in procuring fodder where the journey to the covering station is a long one, (2) to the illness of two stallions, Rajah and Max; in Salem, to the competition of the donkey-stallions provided for mule-breeding; and

in Madura, to the majority of mares being undersized and therefore unsuitable to the stallion Selim, which has since been transferred to the Coimbatore district. None of the three new stallions, which arrived in Salem on the 17th December 1896, worked during the year. The results of the coverings in 1895–96 compare unfavourably with those of the preceding year. Out of 398 mares covered, the results of 292 reported by the Revenue officers, and confirmed by the inspections of the Deputy Superintendent, Civil Veterinary Department, show 54 foalings (18 per cent.), 32 abortions (12 per cent.) and 206 unsuccessful cases (71 per cent.). The percentage of success in the previous year was 26. This poor result is ascribed, as usual, to the bad condition of the mares, owing to neglect and ill-treatment by their owners.

Two pony shows were held during the year—one in May 1896 at Tiruppur in the Coimbatore district and the other in December 1896 at Berikai in the Salem district. The reports of the shows show that the progeny of the Government stallions were generally of good quality in Coimbatore, but poor in Salem. At Hosúr, 171 ponies were castrated during the year, as against 134 during the previous year; in Coimbatore only 17 ponies were castrated as against 98 during the previous year. The short work in the latter district was ascribed chiefly to the small number of pony entires in the areas in which operations were undertaken.

30. *Mule-breeding.*—Of the four donkey-stallions, two Persian and two Punjabi, which were purchased in 1895–96, one Persian and one Punjabi were kept at Hosúr in the Salem district and the other two were stationed at Kollegal in the north of the Coimbatore district. Work was not begun till the end of the hot weather, after which, 36 coverings were effected in Coimbatore and 28 in Salem. Of the 36 mares covered in the former district, 10 belonged to Mr. Holmes, a coffee planter, at whose instance the experiment was undertaken. The small extent to which the donkey-stallions have as yet been used is attributed to the deep-rooted popular prejudice against these animals as unclean, and also to the illness of one of the stallions. Time and the handsome rewards which are offered for the exhibition of mule foals will, it may be hoped, gradually overcome this prejudice; and, meanwhile, the beginning made is far from discouraging.

31. *Cattle Fairs.*—The provisions of the Cattle Disease Prevention Act (Act II of 1866) were enforced at certain cattle fairs in South Canara, Salem, North Arcot, South Arcot, Tanjore, Madura and Tinnevelly at the request of the Collectors of these districts.

32. *Mortality among Live-stock from Diseases, and Attacks of Snakes and Wild Beasts.*—The mortality among cattle from diseases and attacks of snakes and wild beasts during 1896–97, as compared with that in the previous year, and with the average of the five years ending 1895–96 is given in the subjoined table:—

Causes of death.	Number amongst cattle.			Number amongst horses and ponies.		
	Average for five years ending 1895–96.	In 1895–96.	In 1896–97.	Average for five years ending 1895–96.	In 1895–96.	In 1896–97.
1	2	3	4	5	6	7
Diseases—						
Rinderpest	14,424	21,475	43,959	..	..	..
Diarrhœa and dysentery	18,072	11,089	17,433	19	44	21
Total	32,496	32,564	61,392	19	44	21
Anthrax	17,812	17,746	21,898	17	5	10
Epizootic aphtha	6,444	3,477	2,706	..	..	..
Variola *	2,072	2,063	3,987	..	..	..
Others	33,009	36,439	35,197	146	163	132
Total deaths from diseases	91,833	92,289	125,180	182	212	163
Killed by snakes and wild beasts—						
Snakes	2,249	2,656	2,024	8	8	4
Wild beasts	10,433	10,566	9,501	167	119	114
Poisoning criminal	23	21	19	..	..	..
Total	12,705	13,243	11,544	175	127	118
Grand Total	104,538	105,532	136,724	357	339	281

* Deaths shown against this race are, in most cases, suspected to be due to rinderpest.

33. *Cattle Diseases.*—The number of deaths among cattle from diseases was 35·6 per cent. higher than in the previous year, and 36·3 higher than the average of the five years ending 1895–96. Nearly half of the number of deaths from diseases was contributed by rinderpest and diarrhœa and dysentery, which showed a large increase of 88·5 per cent. over the corresponding figures of the previous year. Deaths from anthrax, the next most fatal disease, accounted for 17·5 per cent. of the total, and showed an increase of 23·4 per cent. over the figures of the previous year. The number of deaths from unspecified diseases exhibited a slight decrease during the year under report, this item accounting for about 28·1 per cent. of the total mortality from disease. The only other head under which a decrease is to be observed is "Epizootic aphtha."

Rinderpest was especially rife in Gódávari, Kurnool, Bellary, Anantapur, Cuddapah, Nellore and Chingleput, these districts contributing 88 per cent. of the total number of deaths from this cause. More than one-third of the deaths from diarrhœa and dysentery were reported from Chingleput, while Kistna and Gódávari contributed largely to the total. Anthrax was especially prevalent in Gódávari and Chingleput, these two districts contributing nearly half the total; Kistna, Nellore, North Arcot and Tanjore also suffered severely from this disease. Epizootic aphtha was distributed throughout the Presidency, but Ganjám was exceptional in its losses from variola, so far as the mortality returns go, but the deaths were probably really due to rinderpest. Numerous deaths from unspecified diseases were reported from Gódávari, Kistna, Kurnool, Bellary, Anantapur, Cuddapah, Nellore, Chingleput and Coimbatore, which contributed together 85·3 per cent. of the total deaths from such causes.

34. Taking the losses from all diseases together, the death-rate was highest in Chingleput, being 31·2 per mille of the total stock; Kurnool and Bellary coming next with a death-rate of 22·1 per mille.

The subjoined statement compares the total number of deaths from diseases amongst cattle and horses during the year under review with the numbers returned in the previous year and with the average of the five years ending 1895–96, so far as Government villages are concerned:—

Year.	Horned cattle.			Horses and ponies.		
	Number of		Rate per mille.	Number of		Rate per mille.
	Stock.	Deaths from diseases.		Stock.	Deaths from diseases.	
1891-92	14,849,000	87,349	5·9	42,000	155	3·7
1892-93	14,342,000	101,990	7·1	40,000	142	3·5
1893-94	16,192,000	86,554	5·3	41,000	226	5·5
1894-95	16,112,000	82,217	5·1	37,000	171	4·6
1895-96	16,327,000	90,102	5·5	41,000	208	5·1
Average ..	15,564,000	89,642	5·7	40,000	180	4·5
1896-97	15,582,000	122,726	7·9	40,000	162	4·0

The death-rate among cattle was far above the average, while among horses and ponies it was slightly below it.

35. *Deaths caused by Snakes and Wild Beasts.*—There was a noticeable decrease in the number of cattle killed by snakes and wild beasts. The subjoined statement shows the action taken in the cases of criminal poisoning that occurred during the year under report:—

District.	Month.	Number of cattle poisoned.	Action taken.
1	2	3	4
Gódávari	April 1896	2	No criminal action was taken either of these cases, as the owners of the cattle merely suspected that death might have resulted from the effects of poison, and could not produce witnesses to prove their suspicion.
Kistna	June 1896	2	In one case three persons were convicted and sentenced to imprisonment, and in the other the accused was discharged for want of proof.
	January 1897	2	.....
Kurnool	January 1897	1	Two persons were convicted, and sentenced to rigorous imprisonment and fine.
Cuddapah ..	December 1896	3	Not reported.
Nellore	September 1896	1	The culprit was sentenced to two months' rigorous imprisonment.
Coimbatore ..	April 1896	1	The accused were discharged for want of evidence.
	July 1896	1	Do. do. do.
	December 1896	2	The matter was dropped as the owner of the cattle did not take any steps to detect the real culprits.
	January 1897	2	The accused were all discharged.
Tanjore	September 1896	1	The accused were discharged for want of evidence.
	January 1897	1	The case was dismissed for want of evidence.
	Total ..	19	

VII.—MISCELLANEOUS.

36. *Crop Forecast.*—During the year, ground-nut and sugarcane were added to the list of crops, for which forecasts are to be prepared. The forecasts of the listed crops were issued on the dates noted in the subjoined table:—

Crops.	Reports.		
	Sowings.	Forecast (first).	Forecast (second).
Paddy	15th October	16th December ..	18th February.
Indigo	16th September ..	15th ,, ..	....
Gingelly (early)	16th August	2nd November ..	....
Do. (late)	2nd Jaunary	15th April	....
Cotton (first)	15th August	10th December. ..	13th February.
Do. (second)	10th October	19th February	....
Ground-nut	....	19th ,, ...	....
Sugarcane	....		

37. *Exploration for Minerals.*—The Geological Survey of the Salem and Coimbatore districts was continued by Mr. Middlemiss and is expected to be completed during 1897. An examination was made of some gold-bearing reefs near Kollegal. The special investigation of the corundum-bearing rock has resulted in the discovery not only of many new fields, but also of the fact that the corundum occurs in definite bands of rock which can be followed with almost the same certainty as a seam of coal. The preliminary survey being sufficiently advanced to render the commencement of exploratory workings desirable with a view to testing the extent and richness of the corundum-bearing rock, arrangements were made by the Survey Department with the Government for carrying out this work, and a series of excavations is now being made by the Public Works Department at places pointed out by Mr. Middlemiss.

Several new discoveries of iron ores were made, and old fields were visited. A specialist, however, gave reasons for believing that the manufactured charcoal iron of this Presidency cannot compete with the imported product, but his figures and reasons are not considered decisive. Enquiries are being made, by the Forest Department as to the supply of charcoal which can be annually relied on, and the price at which it can be laid down and the Government of Madras has recommended that 300 tons of Korijamalai iron ore and 600 tons of Bengal coal may be sent to England in view to experiments being made on a large scale as to the best method of working up the ore with the fuel obtainable in India.

In accordance with the instructions of Government a consignment of steatite was collected for shipment to England.

38. *Rail-borne trade of the Presidency.*—In September 1896, the registration of rail-borne trade statistics, which had been previously carried on under the supervision of the Examiner of Guaranteed Railway Accounts, Bombay, was undertaken by the various Railway companies, the cost of the establishment necessary for the work being met by Government. The compilation of the quarterly returns was, as usual, carried out in the office of the Examiner of Guaranteed Railway Accounts, Bombay, and the annual returns, which are compiled from the quarterly returns, will be issued shortly with a separate review. They show that the total amounts of the rail-borne trade of this Presidency during 1896–97 was the largest recorded since registration was first undertaken. The increase was chiefly due to the extension of the East Coast lines and to the large export of food-grains to other provinces, where dearth prevailed. The subjoined statement summarises the figures for the last six years :—

Years.	Imports.		Exports.		Integral.		Total.	
	Amount.*	Value.†	Amount.*	Value.†	Amount.*	Value.†	Amount.*	Value.†
	MDS.	RS.	MDS.	RS.	MDS.	RS.	MDS.	RS.
1891–92	7,027	5,25	4,717	3,61	27,305	19,79	39,049	28,65
1892–93	7,257	5,53	5,399	4,16	24,110	20,44	36,766	30,13
1893–94	7,661	5,64	6,125	4,46	25,021	21,45	38,807	31,55
1894–95	8,645	6,66	6,571	4,65	30,802	27,85	46,018	39,16
1895–96	8,943	6,69	7,330	4,82	32,521	30,27	48,794	41,78
1896–97	7,180	6,64	9,118	5,37	33,074	33,47	49,372	45,48

* Thousands of maunds. † Lakhs of rupees.

The increase, as compared with the figures of the previous five years, occurred chiefly under the head of exports. The small increase in the internal trade was more than counterbalanced by the decrease in the imports from other provinces, the imports in the year under report being smaller than in any one of the previous five years except 1891–92. Imports from other provinces consisted mainly of coal and coke from Hyderabad and grain and pulse from Mysore. Compared with the previous year, there was a decrease of nearly 20 per cent. in the volume and 0·7 per cent. in the value of this trade. The decrease in the volume of imports is to be attributed to a considerable extent to the falling off in the import of grain and pulse. The cause of this was the large demand in distressed areas outside the Presidency, and the consequent rise in prices furnishes also to a certain extent the explanation of the disproportionate decrease in the value, as compared with the volume of the trade.

As compared with the average of the previous five years, exports to other provinces showed an increase of 51 per cent. in volume and 50 per cent. in value. As compared with the preceding year, exports increased by nearly 25 per cent. in volume and by nearly 11 per cent. in value. The increase is to be attributed to large consignments of coal and coke to the Mysore Province, for the Kolar gold fields, and of grain and pulse to Bombay, Bengal, Hyderabad and Mysore.

The internal trade of the Presidency increased by nearly 2 per cent. in volume, and by about 10 per cent. in value, the increase occurring chiefly under the heads of grain and pulse, metals, cotton (raw), and spices.

The distribution of the total trade of the Presidency among the different blocks into which it is divided for purposes of registration is shown below :—

Internal blocks of the Presidency.	Imports.								
	1895–96.				1896–97.				Percentage of increase or decrease.
	Foreign.	Internal.	Total.		Foreign.	Internal.	Total.		
			Quantity.	Percentage.			Quantity.	Percentage.	
1	2	3	4	5	6	7	8	9	10
Sea-ports.	MDS.	MDS.	MDS.		MDS.	MDS.	MDS.		
Vizagapatam	6,711	1,453,006	1,459,717	3·5	80,695	2,099,591	2,180,286	5·4	+ 49·3
Cocanada	744,974	1,077,919	1,822,893	4·4	559,235	2,003,525	2,562,760	6·4	+ 40·6
Madras	1,434,904	6,633,269	8,068,173	19·5	1,320,794	6,061,523	7,382,317	18·3	— 8·5
Pondicherry	6,620	717,240	723,860	1·7	3,698	502,170	505,868	1·3	— 30·1
Cuddalore	2,562	656,312	658,874	1·6	549	716,409	716,958	1·8	+ 8·8
Negapatam	16,208	1,173,585	1,189,793	2·9	9,098	1,762,969	1,772,067	4·4	+ 49·0
Tuticorin	31,803	1,222,890	1,254,693	3·0	27,272	1,699,487	1,726,759	4·3	+ 37·6
Calicut	53,078	554,228	607,306	1·5	46,560	885,449	932,009	2·3	+ 53·5
Internal blocks.									
Northern Circars ..	420,663	1,239,661	1,660,324	4·0	524,903	432,612	957,515	2·4	— 42·3
Kistna and Godávari ..	3,417,895	313,533	3,731,428	9·0	2,161,960	634,039	2,795,999	6·9	— 25·1
Deccan districts ..	1,133,599	1,466,323	2,599,922	6·3	1,016,736	1,808,800	2,825,536	7·0	+ 8·6
Chingleput and North Arcot	464,096	2,295,462	2,759,558	6·7	431,702	2,837,129	3,268,831	8·1	+ 18·5
South Arcot and Tanjore	107,349	3,731,313	3,838,662	9·3	56,403	4,050,741	4,107,144	10·2	+ 7·0
Salem, Coimbatore and Trichinopoly ..	888,519	4,531,424	5,419,943	13·0	773,128	3,737,123	4,510,251	11·2	— 16·8
Madura and Tinnevelly.	89,793	4,647,586	4,737,379	11·4	74,932	3,141,983	3,216,915	8·0	— 32·1
Malabar	123,993	807,372	931,365	2·2	92,171	701,048	793,219	2·0	— 14·8
(Block not known) ..	..	..	..	..	..	..	..	..	..
Total ..	8,942,767	32,521,123	41,463,890	100·0	7,179,836	33,074,598	40,254,434	100·0	— 2·9

Internal blocks of the Presidency.	Exports.								
	1895–96.				1896–97.				Percentage of increase or decrease.
	Foreign.	Internal.	Total.		Foreign.	Internal.	Total.		
			Quantity.	Percentage.			Quantity.	Percentage.	
	11	12	13	14	15	16	17	18	19
Sea-ports.	MDS.	MDS.	MDS.		MDS.	MDS.	MDS.		
Vizagapatam	953	897,485	898,438	2·3	157,336	124,191	281,527	0·7	— 68·7
Cocanada	185,771	317,789	503,560	1·3	317,576	649,289	966,865	2·3	+ 92·0
Madras	3,589,863	4,231,019	7,820,882	19·6	3,706,981	3,868,060	7,575,041	18·0	— 3·1
Pondicherry	1,936	44,897	46,833	0·1	1,965	48,548	50,513	0·1	+ 8·5
Cuddalore	1,643	854,586	856,229	2·1	1,718	1,223,421	1,225,139	2·9	+ 43·1
Negapatam	1,815	932,514	934,329	2·3	2,484	1,173,348	1,175,832	2·8	+ 25·8
Tuticorin	461	2,278,179	2,278,640	5·7	420	1,525,067	1,526,487	3·6	— 33·0
Calicut	60,031	717,707	777,738	1·9	26,141	624,593	650,734	1·5	— 16·3
Internal blocks.									
Northern Circars ..	40,513	2,309,406	2,349,919	5·9	728,052	3,961,666	4,689,718	11·1	+ 99·6
Kistna and Godávari ..	888,193	1,188,944	2,077,137	5·2	824,454	1,040,468	1,864,922	4·4	— 10·2
Deccan districts ..	892,786	2,804,820	3,697,606	9·3	1,265,992	1,920,010	3,206,002	7·6	— 13·3
Chingleput and North Arcot	400,023	5,318,443	5,718,466	14·3	467,095	4,848,032	5,315,127	12·6	— 7·0
South Arcot and Tanjore	169,073	4,46,1874	4,630,947	11·6	243,681	5,003,737	5,247,418	12·5	+ 13·3
Salem, Coimbatore and Trichinopoly ..	763,491	3,048,014	3,811,505	9·7	940,315	3,534,963	4,475,278	10·6	+ 17·4
Madura and Tinnevelly.	4,707	1,757,739	1,762,446	4·4	12,252	2,005,426	2,017,678	4·8	+ 14·5
Malabar	328,327	1,357,707	1,686,034	4·3	401,610	1,522,779	1,924,389	4·5	+ 14·1
(Block not known) ..	..	..	..	..	1	..	1	..	..
Total ..	7,329,586	32,521,123	39,850,709	100·0	9,118,073	33,074,598	42,192,671	100·0	+ 5·9

39. *Road-traffic.*—Traffic was registered at 26 stations during 1895-96. The prescribed period of registration having been completed at the close of that year at nine of these stations, operations were discontinued at them, and nine new stations were opened during the year under report. Complete statistics are now available for 28 stations. Under the orders of Government, an additional station was opened at the Half-way House between Coonoor and Ootacamund on 7th February 1897. The following table shows the different stations at which registration was being conducted at the close of the year:—

Districts.	Registering stations.	Description of the road.	Routes for which traffic was registered.	Years in which previously taken up.	
1	2	3	4	5	
Ganjám	1. Russellkonda	Aska roads	1. Russellkonda to Baliabadra	1890-91 ..	1895-96
	2. Purushottapur	....	2. Aska to Kalingiah	Do. ..	Do.
			3. Aska to Purushottapur	Do. ..	Do.
	3. Ivenjalli	....	4. Aska to Humma	Do. ..	Do.
	4. Varanasi (Baléru)	Between Battili, Parlákimedi and Calingapatam.	5. Aska to Berhampur	Do. ..	..
			6. Battili to Parlákimedi	Do. ..	..
Vizagapatam	5. Korapatti	Road to Jeypur	7. Do. to Hiramadalam	1891-92 ..	..
			8. Salur to Jeypur	Do. ..	..
Kistna	6. Pidugurala	Hyderabad to Guntúr	9. Do. to Nowrangpur	1890-91 ..	1895-96
			10. Guntúr to Hyderabad	Do. ..	Do.
Nellore	7. Lingamgunta	Cumbum to Ongole	11. Ongole to do.	1891-92 ..	Do.
			12. Do. to Cumbum	Do. ..	Do.
	8. Chinnarikatta	....	13. Kanigiri to Cumbum	Do. ..	Do.
			14. Ongole to Cumbum	Do. ..	Do.
	9. Sangam	Nellore to Badvel	15. Do. to Kanigiri	Do. ..	Do.
			16. Nellore to Kaligiri	1888-89 ..	Do.
Cuddapah	10. Badvel	Cuddapah to Cumbum	17. Do. to Badvel	Do. ..	Do.
			18. Badvel to Cumbum	Do. ..	Do.
			19. Do. to Puttur	Do. ..	Do.
			20. Do. to Sidhout	.. ..	..
Kurnool	11. 31st mile, Kurnool-Gooty road ..	Gooty to Kurnool	21. Do. to Nellore	1891-92 ..	..
South Arcot	12. Sattyatope	Panruti to Kumbakónam	22. Dhone to Kurnool	Do. ..	..
			23. Salem to Porto Novo	1890-91 ..	..
	13. Rayappanur	Cuddalore to Salem	24. Kumbakónam to Panruti	Do. ..	..
			25. Salem to Cuddalore	Do. ..	..
		....	26. Do. to Porto Novo	Do. ..	..
	14. Vriddhachalam	Villupuram to Trichinopoly	27. Do. to Cuddalore	Do. ..	..
	15. Veppur		28. Do. to do.	Do. ..	1895-96
			29. Villupuram to Trichinopoly	Do. ..	Do.
Madura	16. Tirumangalam	Madura to Tinnevelly *via* Srívilliputtúr ..	30. Tinnevelly to Periyakulam	Do. ..	Do.
			31. Do. to Solavandan	Do. ..	Do.
			32. Do. to Madura	Do. ..	Do.
			33. Madura to Periyakulam	1888-89 ..	..
			34. Mélúr to Sivaganga	Do. ..	..
	17. Sivaganga	Madura to Tondi	35. Sivaganga to Ramnad	Do. ..	..
	18. Ramnad (Mulakottalam)	Madura to Ramnad	36. Ramnad to Pámban	1896-91 ..	1895-96
	Do. (Kanikarai centre) ..	....	37. Madura to Tinnevelly	Do. ..	Do.
Tinnevelly	19. Sankaranayinárkóyil	Madura to Tinnevelly *vid* Srívilliputtúr ..	38. Kalugumalai to Sankaranayinárkóyil	Do. ..	Do.
			39. Madura to Sankaranayinárkóyil	Do. ..	Do.
		....	40. Do. to Tenkási	1892-93 ..	Do.
	20. Rajapalayam		41. Malabar to Tiruppur	Do. ..	Do.
			42. Do. to Madura	Do. ..	Do.
Coimbatore	21. Palladam	Trichinopoly to Palghat *vid* Karur Kangayam, Pollavaram and Coimbatore.	43. Do. to Trichinopoly	Do. ..	Do
			44. Karúr to Coimbatore	Do. ..	Do.
		....	45. Do. to Tiruppur	Do. ..	Do.
	22. Kangayam		46. Dhárápuram to Perundurai	Do. ..	Do.
			47. Do. to Uttukuli	Do. ..	Do.
			48. Do. to Kodimudi	Do. ..	Do.
			49. Kodimudi to Uttukuli	Do. ..	Do.
			50. Do. to Coimbatore	Do. ..	Do.
			51. Karúr to Kangayam	Do. ..	Do.
	23. Karúr	Karúr to Pollachi *vid* Dhárápuram and Udamalpet.	52. Do. to Dhárápuram	Do. ..	Do.
	24. Coimbatore	Trichinopoly to Palghat *vid* Karur, Kangayam, &c.	53. Coimbatore to Pollachi	Do. ..	Do.
			54. Do. to Palghat	Do. ..	Do.
		Canal from South Canara to Cannanore ..	55. Balayapatam to Kavai	.. ..	..
Malabar	25. Sultan Tod	Road from Periya Ghát to the coast ..	56. Periya to Tellicherry		
	26. Kuthaparamba		57. Coonoor to Ootacamund		
The Nilgiris	27. Half-way House *	Coonoor to Ootacamund			

* NOTE.—Registration commenced on 7th February 1897.

APPENDIX I.

Statistics of mortality from diseases, criminal poisoning and attacks of snakes and wild beasts reported among cattle in the Madras Presidency during the year 1896–97.

Districts.	Total stock.	Deaths due to diseases.							Deaths due to			Total deaths from the causes named.	
		Rinderpest.	Diarrhœa and dysentery.	Anthrax.	Epizootic aphtha.	• Variola.	Other diseases.	Total. Number.	Total. Rate per mille.	Snake-bite.	Attacks of wild animals.	Criminal poisoning.	Number.	Rate per mille.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ganjám	364,781	887	741	405	222	2,192	752	5,199	14·2	63	178	..	6,440	14·9
Vizagapatam	159,670	234	194	405	198	33	501	1,565	9·8	65	69	..	1,689	10·6
Gódávari	888,018	3,830	1,254	5,768	489	531	2,341	14,213	16·1	193	348	2	14,756	16·6
Kistna	1,208,198	254	2,286	1,376	76	458	4,796	9,246	7·6	107	136	4	9,493	7·8
Kurnool	647,164	7,808	818	647	114	..	4,898	14,285	22·1	66	321	1	14,672	22·7
Bellary	604,522	8,587	993	836	171	20	2,751	13,358	22 1	21	109	..	13,488	22·3
Anantapur	643,719	7,162	746	303	73	181	3,887	12,352	19·2	7	187	..	12,546	19·5
Cuddapah	1,054,399	3,734	491	734	79	109	2,395	6,842	6·5	67	620	3	7,522	7·1
Nellore	722,870	3,149	610	1,029	231	169	2,832	7,812	10 8	37	37	1	7,887	10·9
Chingleput	608,709	4,192	6,366	4,436	65	94	3,682	19,001	31·2	453	25	..	19,479	32·0
South Arcot	1,189,172	386	716	960	92	2	623	2,752	2·3	153	489	..	3,026	2·6
North Arcot	918,806	1,917	473	1,623	24	..	42	4,052	4·4	166	159	..	4,707	5·1
Salem	1,051,975	15	60	62	24	2	281	444	0·4	18	922	6	621	0·6
Coimbatore	1,158,002	60	110	308	65	33	2,065	2,631	2·3	52	79	..	3,611	3·1
Trichinopoly	602,468	80	86	261	21	1	466	865	1·4	29	..	..	973	1·6
Tanjore	561,577	337	330	1,351	172	16	797	3,003	3·1	111	8	2	3,124	3·3
Madura	623,911	100	255	613	157	107	942	2,179	3·5	109	249	..	2,537	4·1
Tinnevelly	474,036	117	113	272	20	1	214	737	1·6	87	32	..	856	1·8
Nilgiris	67,273	2	21	..	42	..	30	95	1·4	7	360	..	462	6·9
Malabar	956,986	93	466	61	108	..	167	885	0·9	141	2,072	..	3,098	3·2
South Canara	636,119	565	112	79	154	14	286	1,210	1·8	12	2,716	..	3,938	5·7
Total ..	15,582,376	42,749	17,241	21,429	2,596	3,963	34,748	122,726	7·9	1,911	9,269	19	133,925	8 6
In Zemindaris.														
Vizagapatam	Not available.	149	154	268	55	24	324	974	..	40	38	..	1,052	..
Kistna		277	..	..	..	..	..	369	..	2	..	..	2	..
Bellary		37	4	4	..	..	81	60	..	1	68	..	433	..
Nellore		747	1	6	..	..	16	1,051	..	69	..	..	61	..
North Arcot			33	191	52	..	28				136	..	1,246	..
Total ..	....	1,210	192	469	110	24	449	2,454	..	113	232	..	2,799	..
Grand Total ..	....	43,959	17,433	21,898	2,706	3,987	35,197	125,180	..	2,024	9,501	19	136,724	..

• Deaths noted under this head are, in most cases, suspected to be due to rinderpest.

APPENDIX II.

Monthly statistics of mortality among cattle in the Madras Presidency during the year 1896–97.

Months.	Deaths due to diseases. Rinderpest.	Diarrhœa and dysentery.	Anthrax.	Epizootic aphtha.	Variola. •	Other diseases.	Total.	Deaths due to Snake-bite.	Attacks of wild animals	Criminal poisoning.	Total deaths from the causes named.
1	2	3	4	5	6	7	8	9	10	11	12
April 1896 ..	3,309	1,021	797	276	100	1,985	7,488	111	556	3	8,158
May „ ..	3,592	693	1,291	215	44	2,535	8,370	127	620	..	9,117
June „ ..	3,710	944	1,866	176	107	2,841	9,644	121	666	2	10,433
July „ ..	2,795	932	1,868	201	166	3,965	9,927	182	893	1	11,003
August „ ..	3,787	1,180	2 264	115	218	3,565	11,129	177	857	..	12,163
September „ ..	2,939	1,548	2,004	126	183	2,352	9,152	211	887	2	10,252
October „ ..	3,628	1,544	2,304	150	408	3,304	11,338	194	963	..	12,495
November „ ..	3,675	1,500	2,165	283	937	3,744	12,304	229	1,017	..	13,550
December „ ..	4,103	2,270	2,677	174	798	2,896	12,918	213	890	5	14,026
January 1897 ..	4,883	2,384	1,979	340	549	2,859	12,994	170	823	6	12,993
February „ ..	3,786	1,924	1,454	253	180	2,704	10,301	142	638	..	11,081
March „ ..	3,752	1,493	1,229	397	297	2,447	9,615	147	691	..	10,453
Total ..	43,959	17,433	21,898	2,706	3,987	35,197	125,180	2,024	9,501	19	136,724

• Deaths noted under this head are, in most cases, suspected to be due to rinderpest.

APPENDIX III.

Statistics of mortality from diseases criminal poisoning and attacks of snakes and wild beasts reported among horses and ponies in the Madras Presidency during the year 1896–97.

Districts.	Total stock.	Deaths due to diseases. Diarrhœa and dysentery.	Anthrax.	Other diseases.	Total. Number.	Total. Rate per mille.	Deaths due to Snake-bite.	Attacks of wild animals.	Criminal poisoning.	Total deaths from the causes named. Total.	Rate per mille.
1	2	3	4	5	6	7	8	9	10	11	12
Ganjám	225	..	..	..	..	..	..	..	..	..	..
Vizagapatam	163	1	..	..	1	6·1	..	..	..	1	6·1
Gódávari	2,825	4	4	13	21	7·4	1	8	..	30	10·6
Kistna	3,921	..	..	23	23	5·9	1	3	..	27	6·9
Kurnool	3,008	..	..	9	9	2·9	..	22	..	31	10 3
Bellary	4,216	11	..	33	44	7·8	..	13	..	46	10·9
Anantapur	3.111	1	2	21	24	7·7	..	11	..	35	11·2
Cuddapah	1,784	1	2	3	6	3·4	..	2	..	8	4·5
Nellore	1,046	..	..	7	7	6·7	1	2	..	10	9·6
Chingleput	1,219	..	..	14	14	11·5	..	..	..	14	11 5
South Arcot	2,418	..	..	..	..	..	..	..	..	..	..
North Arcot	1,956	..	..	..	..	..	..	1	..	1	0·5
Salem	3,442	..	..	..	..	..	..	1	..	1	0·3
Coimbatore	3,460	1	1	4	6	1·7	..	15	..	21	6·1
Trichinopoly	769	..	..	10	10	13·0	..	..	..	10	13·0
Tanjore	1,354	1	..	1	2	1·5	..	..	..	2	1·5
Madura	2,266	..	..	4	4	1·7	1	14	..	19	8·4
Tinnevelly	508	..	..	..	..	..	..	..	..	..	..
The Nilgiris	1,389	..	..	..	..	..	..	18	..	18	13·0
Malabar	939	..	..	(d) 1	1	1·0	..	..	..	1	1 0
South Canara	222	1	..	..	1	4·5	..	..	..	1	4·5
Total ..	40,241	21	9	132	162	4·0	4	110	..	276	6·8
In Zemindaris.											
Vizagapatam	Not available.	..	..	..	..	..	..	..	..	..	..
Kistna		..	..	..	..	..	..	3	..	3	..
Bellary		..	..	..	..	..	..	..	..	..	..
Nellore		..	1	..	1	..	..	1	..	2	..
North Arcot											
Total ..	..	..	1	..	1	..	..	4	..	5	..
Grand Total ..	..	21	10	132	163	..	4	114	..	281	..

(a) A case was wrongly reported by the Collector under epizootic aphtha in May 1896 and two other cases under rinderpest in March 1897.
(b) Two cases were wrongly reported by the Collector under variola—one in July 1896 and another in February 1897.
(c) A case was wrongly reported by the Collector under rinderpest in April 1896.
(d) A case was wrongly reported by the Collector under epizootic aphtha in May 1896.

APPENDIX IV.

MONTHLY statistics of mortality from diseases criminal poisoning and attacks of snakes and wild beasts among horses and ponies in the Madras Presidency during the year ending 1896-97.

Months.	Number of deaths due to diseases.				Number of deaths due to			Total deaths from the causes named.
	Diarrhœa and dysentery.	Anthrax.	Other causes.	Total.	Snake-bite.	Attacks of wild animals.	Criminal poisoning.	
1	2	3	4	5	6	7	8	9
April 1896	2	..	4	6	1	4	..	11
May "	1	1	6	8	..	4	..	13
June "	7	..	17	24	..	10	..	34
July "	1	..	17	18	..	12	..	30
August "	..	4	22	26	..	6	..	32
September "	1	..	8	9	..	7	..	16
October "	1	1	6	8	1	13	..	21
November "	3	3	8	14	..	7	..	22
December "	1	1	3	5	1	12	..	17
January 1897	1	..	9	10	1	12	..	23
February "	..	..	24	24	1	12	..	37
March "	3	..	8	11	..	15	..	26
Total ..	21	10	132	163	4	114	..	281

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18 4,000—19-7-97.

Revenue (189/) Department.

CURRENT No.

From

The Government of India
Rev. & Agrl. Dept.

~~*Order*~~

Ludw

No. 1701

Dated 4 Nov.

Received 8 "

Registered 10 "

Enclosures

Spare copies.

BVM
12.XII.97

SUBJECT.

Requesting the favour of an early submission of the Report of the Dept. of Land Records and Agriculture, Madras, for 1896-97.

BACK PAPERS.

G.O.	No.	Department.	Date

FURTHER PAPERS.

G.O.	No.	Department.	Date.

No. 1701 — 1st Reminder.

REVENUE DEPARTMENT.

The Report noted in the margin which was due on the 1st October 1897 not having been received, the undersigned is directed to request the favour of its early submission.

Report on the Dept. of Land Records & Agri. Madras for 1896-97.

GOVT. OF INDIA,
DEPT. OF REV. & AGRI.;
Simla, the 4th November 1897.

F. C. SLY,
Under-Secretary.

R. & A. Regr. No. 11.

RAS GOVERNMENT.

)536 of '97.

Order No: 22 & 11th Jan. 1898.

With its Proceedings read above, the Board of Revenue submits its report on the operations of the Department of Land Records and Agriculture during the year 1896-97. The report which was due in the Government Office on the 1st Sept: was received more than two months late. The delay has probably to be ascribed to the pressure of famine work.

2 In the introductory portion of the report the Board refers to the recommendations of the committees which were appointed to discuss the proposals of the Simla Conference of 1893 with regard to Agricultural Education and the utilisation of Land Records and Dr: Voelcker's Report for the construction of a practical scheme of District Analysis.

The Govt: has received a full expression of the views of the Govt: of India on these subjects and generally upon the measures to be adopted for future agricultural enquiry or improvement. The subject which has been exhaustively reviewed in series of eight resolutions is un-

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for the careful consideration of the Govt: and it is hoped that it may be found possible to communicate them to the Board shortly with the views of the Govt: thereon.

The eighth of the resolutions alluded to above C lays down instructions as to the form in which future annual reports of the Department of Land Records and Agriculture should be prepared. The Govt: of India desires that the various Chapters of such reports should deal with the divisions of the subject indicated in the eight resolutions which are as follows:-

I. Prefatory.

II. Land Records Establishment.

III. Utilisation of Land records.

IV. Scientific and National enquiry under Imperial control.

V. Scientific and local enquiry under provincial direction.

VI. Agricultural Education.

VII. Publication of agricultural information.

VIII. Final.

The Board's present report is drawn up on the model of ~~previous years~~ those hitherto submitted; but in the following remarks ~~below~~ the subject will be viewed under the headings prescribed by Govt: of India.

~~Prefatory.~~ Mr: C.Benson continued to be Deputy Director of both the Agricultural and Land Records Branch of the Department until a few days before the close of the year under review when he proceeded on a year's furlough to England. He was on tour for about three months, inspecting village and taluk accounts. The remaining period was spent by him at head-quarters in formulating proposals for the revision of the village manual or in Secretariat Work in the Board's Office. Since Mr: Benson's departure on leave the latter work has been performed by the Secretary temporarily appointed to the Board of Revenue for famine purposes. The Board's scheme for the re-organization of the Survey Department as a Special Land Records Department referred to in para 3 of the review of the previous year's report is still under the consideration of His Excellency the Governor in Council. ~~during the year under review.~~ The policy of agricultural improvement enunciated by the Govt: of India in the Eight resolutions already referred to has necessited a careful re consideration of the whole subject.

5. II. Land Records Establishments.

Survey schools for the instruction of Karnams in Survey were held in 127 out of 150 taluks of the Presidency and 12,913 Karnams were instructed during the year. ~~As compared with the previous year the~~ a much higher standard of profiency than that acquired hitherto was exacted ~~required~~ at the examinations held at the close of the schools. ~~was raised considerably.~~

~~Considerable progress was also made in training Revenue Inspectors, and~~ It is satisfactory to note that nearly 95 per cent of the Revenue Inspectors, now in the service, are men who have had a regular training in Survey

work.

c. III. Utilisation of Land Records.

The preparation and checking of village registers and Firka books have been pushed on as much as possible. Reports on the Economic condition of all the Districts as disclosed by the Examination of the Village registers and Firka books to the end of Fasli 1303 have been received and reviewed by the Board and submitted for the information of Government.. These reports will in future be submitted decennially as decided by the Government on the recommendation of the local conference held in December 1895 and the Government approves of the Board's instructions that the next set of reports should be submitted before the close of the next census year 1901, and should embody all the information necessary for the revision up to the close of the preceding fasli year of the district memoirs published in the Statistical atlas of the Presidency. It is noted that the Board has issued the necessary instructions for the introduction of the revised forms of Firka books approved of by the Government. In view of the instructions of the forty odd it may be again necessary to revise the form & contents of these books.

7. IV. Scientific and national enquiry under Imperial control. In pursuance of the scheme of practical investigation of the mineral products of the Presidency undertaken by this Government, Messrs: Middlemiss and Holland of the Geological Survey of India were engaged during the year in examining and describing the corundum and certain other less important deposits in the Salem and Coimbatore Districts.

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tricts. Practical experiments in extracting and cleaning corundum were undertaken by Mr: Middlemiss. From Mr: Middlemiss's report on the subject, the results of these experiments appear however discouraging and go to show that the mineral cannot, at the present market price, be extracted at a profit. The question of employing Mr: Middlemiss in other directions is at present under correspondence with the Director of the Geological Survey. A scheme for carrying on bacteriological Survey in this Presidency was drawn up by the Inspector-General of the Civil Veterinary Dept: during the year under review and this was approved by Govt: but owing to the famine, nothing but little effect can yet have been given to the scheme. Now, however, that the Stock Inspectors, most of whom were employed on famine work, have been relieved of that work and allowed to revert to their ordinary duties, the matter should receive attention.

8. V. Scientific and local enquiry under Provincial direction.

Some interesting crop & dairy experiments were carried on in the farm attached to the College of Agriculture at Saidapett and the results obtained are fully set forth in para 17 of the Board's report. The opening of an experimental farm at Bellary or Coimbatore as directed in G.O. No: 490 d/ 24th Feb/96, has had to be postponed owing to Mr: Benson's absence on furlough. The question of what

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what measures should be taken in this direction on the return of that Officer is under the consideration of the Govt: with reference to the views of the Govt: of India on the subject. The minor experiments referred to in the Board's report do not call for any special remarks.

In this Presidency, Pony and Mule breeding operations are carried on under Provincial direction and the results obtained are briefly set forth by the Board in paras 27 & 30 of its present report. The subject has been already fully reviewed by Govt: in G.O. No: 814, dt/ 27 Sept 97 1897.

9. VI. Agricultural Education. The results of imparting higher education in agriculture have also been separately reviewed by Govt: in G.O. 656 Educl dtd Nov 97 on the report on the working of the College of Agriculture. The question of elementary agricultural education was fully discussed at the Local Conference of 1896 and the Govt accepted the following recommendations of that conference viz.,

(1) that agriculture should not appear as a separate subject in the curriculam of rural primary schools but the aim effort should be to impart an elementary knowledge of it in the group "Object - Lessons and Elementary Science", which group should be made a compulsory subject;

(2) that agriculture should be recognized as a separate optional subject for boys after they have passed the Fourth Standard, and that, until properly-qualified teachers become available, the study of a text-book on Agriculture in Lower Secondary schools will be better than nothing.

The subject is however under reconsideration with reference to the views of the Govt of India.

10. Publication of agricultural - information.

Two bulletins were issued during the year under review - one "on the use of the iron ploughs in the Ceded districts" and the other "on Tamil Sayings and Proverbs on Agriculture". A valuable and interesting bulletin embodying the results of experiments with waterlifts made by Mr. Chatterton, Professor of Engineering in the College of Engineering, was also issued after the close of the year.

11. Final.

To carry out the Govt's policy declared in the Govt of India Resolution referred to above, the department as it at present exists in this Presidency, Judl & Accts Dept will need expansion & reorganisation. The subject presents many difficulties of the cost of which are occasioned by the present straitened condition of the finances. The Govt hopes however that it

Res. 14-1.98

To The Educational Dept
" Board of Rev: R84
80/3

Res. 14-1.98

Educl: No 22A.
Copy to the Govt of Rev:
1/V.

with a formed position
to make material progress
~~have~~ towards its solution
by the end of next year.

Mlle
29/12/97

Cm No 9536.

Review of the Report on the
Dept of L.R. & Agriculture for 96-97

The Hon Mr Forbes C.I.E.

Note

A draft review is
submitted to the Hon
Member below.

The Govt report
was received more than
two months later in
November instead
of on 1st September.
Owing to the pressure of
Budget work during the
last fortnight of November
& the 1st fortnight of
December it was, I regret
not found possible
to take up the current
file just before the
Xmas holidays. Mr
Forbes directed me to
submit the review
when ready direct to
the H.M. during the
holidays, as it is
now much overdue
to the Govt of India.

There

Seen
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31/12/97

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G.C. 1st Cl.

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is not much of importance to be said. Nearly all the work of the Dept has been already received in the G.O.s on Survey administration E Report, on the Civil J Vety Dept Report & on the report on the working of the Agricultural Colleges Saidapet. K

The Govt informs me that, last year, it was thought inadvisable to say any thing, in the review of the report for the previous year, about the recommendations of the Agricultural Conferences. The Board in its present report has quoted them in extenso. As however the Govt of India has communicated its views in the 8 Resolutions, there seems to be no harm in letting the matter stand. The Draft Review makes it clear that the whole matter is under consideration.

Approved
25

Government {1898} of Madras.

REVENUE.

Recd.	1898.	*Enclosures*
Regd.		*Spare copies*

G.O., Nos. 22, 22A, 11th January 1898.

JANUARY.

Department of Land Records and Agriculture.

Reviewing the report on the administration of the — for 1896-97.

GOVERNMENT OF MADRAS.

REVENUE DEPARTMENT.

Read—the following Proceedings of the Board of Revenue (Revenue Settlement, Land Records and Agriculture), No. 657, dated 11th October 1897 :—

Resolution—No. 657, dated 11th October 1897.

The Board begs to submit, for the information of Government, its report on the operations of the Department of Land Records and Agriculture during the year 1896-97.

2. The permanent Director Mr. H. M. Winterbotham proceeded to England on a year's furlough in May 1896, and was succeeded by Mr. W. J. H. LeFanu, who remained in charge of the Department till the close of the year.

3. The Deputy Director, Mr. Benson, continued to be in charge of both the Land Records and Agricultural branches till the 12th March 1897, when he proceeded on a year's furlough on medical certificate. Both Departments were in charge of the Secretary, Settlement Department, from 12th to 26th March, when the ordinary duties of the Deputy Director, Land Records and Agriculture, were transferred to the Temporary Famine Secretary to the Board of Revenue. During April, May and a portion of June and September 1896, the Deputy Director was engaged at head-quarters in formulating proposals for the revision of the village manual, and in doing other miscellaneous work. From the latter month to November, he was on tour in Gódávari, South Arcot and Tanjore, in connection with the inspection of the village and taluk accounts. From November up to the date of his proceeding on leave, he was engaged at head-quarters in famine work. During the period of his stay at head-quarters, he discharged, as usual, a certain amount of Secretariat work under the Board in addition to his other duties.

(True Extract.)

(Signed) L. E. BUCKLEY,
Famine Secretary.

To the Secretary to Government, Revenue Department.

Order—No. 22, Revenue, dated 11th January 1898.

Miscellaneous.

With its Proceedings read above, the Board of Revenue submits its report on the operations of the Department of Land Records and Agriculture during the year 1896-97. The report which was due in the Government office on the 1st September was received more than two months late. The delay has probably to be ascribed to the pressure of famine work.

2. In the introductory portion of the report the Board refers to the recommendations of the committees which were appointed to discuss the proposals of the Simla Conference of 1893 with regard to agricultural education and the utilization of Land Records and Dr. Voelcker's report for the construction of a practical scheme of district analysis.

The Government has received a full expression of the views of the Government of India on these subjects and, generally upon the measures to be adopted for future agricultural enquiry and improvement. The subject which has been exhaustively reviewed in a series of eight resolutions is under the careful consideration of the Government, and it is hoped that it may be found possible to communicate them to the Board shortly with the views of the Government thereon.

3. The eighth of the resolutions referred to above lays down instructions as to the form in which for the future the annual reports of the Department of Land Records and Agriculture should be prepared. The Government of India desires that the various chapters of the reports should deal with the divisions of the subject indicated in the eight resolutions which are as follows :—

I. Prefatory.
II. Land Records establishment.
III. Utilization of Land Records.
IV. Scientific and national enquiry under Imperial control.
V. Scientific and local enquiry under provincial direction.
VI. Agricultural education.
VII. Publication of Agricultural information.
VIII. Final.

The Board's present report is drawn up on the model of those hitherto submitted; but in the following remarks the subject will be reviewed under the headings prescribed by the Government of India.

4. *I. Prefatory.*—Mr. C. Benson continued to be Deputy Director of both the Agricultural and Land Records Branch of the Department until a few days before the close of the year under review when he proceeded on a year's furlough to England. He was on tour for about three months, inspecting village and taluk accounts. The remaining period was spent by him at head-quarters in formulating proposals for the revision of the village manual or in Secretariat work in the Board's office. Since Mr. Benson's departure on leave, the latter work has been performed by the Secretary temporarily appointed to the Board of Revenue for famine purposes. The Board's scheme for the re-organization of the Survey department as a Special Land Records department referred to in paragraph 3 of the review of the previous year's report is still under the consideration of His Excellency the Governor in Council. The policy of agricultural improvement enunciated by the Government of India in the eight resolutions already referred to has necessitated a careful reconsideration of the whole subject.

5. *II. Land Records Establishment.*—Survey schools for the instruction of karnams in survey were held in 127 out of 156 taluks of the Presidency and 12,913 karnams were instructed during the year. A much higher standard of proficiency than that required hitherto was exacted at the examinations held at the close of the schools.

It is satisfactory to note that nearly 95 per cent. of the Revenue Inspectors, now in the service, are men who have had a regular training in survey work.

6. *III. Utilization of Land Records.*—The preparation and checking of village registers and firka books have been pushed on as much as possible. Reports on the economic condition of all the districts as disclosed by the examination of the village registers and firka books to the end of fasli 1303 have been received and reviewed by the Board and submitted for the information of Government. These reports will in future be submitted decennially as decided by the Government on the recommendation of the Local Conference held in December 1895, and the Government approves of the Board's instructions that the next set of reports should be submitted before the close of the next census year 1901, and should embody all the information necessary for the revision up to the close of the preceding fasli year of the district memoirs published in the statistical atlas of the Presidency. It is noted that the Board has issued the necessary instructions for the introduction of the revised forms of firka books approved of by the Government. In view of the instructions of the Government of India it may be again necessary to revise the form and contents of these books.

7. *IV. Scientific and national enquiry under Imperial control.*—In pursuance of the scheme of practical investigation of the mineral products of the Presidency undertaken

by this Government, Messrs. Middlemiss and Holland of the Geological Survey of India were engaged during the year in examining and describing the corundum and certain other less important deposits in the Salem and Coimbatore districts. Practical experiments in extracting and cleaning corundum were undertaken by Mr. Middlemiss. From Mr. Middlemiss's report on the subject, the results of these experiments appear to be discouraging and go to show that the mineral cannot, at the present market price, be extracted at a profit. The question of employing Mr. Middlemiss in other directions is at present under correspondence with the Director of the Geological Survey.

A scheme for carrying on Bacteriological work in this Presidency was drawn up by the Inspector-General of the Civil Veterinary Department during the year under review, and this was approved by Government, but owing to the famine but little effect can yet have been given to the scheme. Now, however, that the Stock Inspectors, most of whom were employed on famine duty, have been relieved of that work and have reverted to their ordinary duties, the matter should receive attention.

8. *V. Scientific and local enquiry under Provincial direction.*—Some interesting crop and dairy experiments were carried on in the farm attached to the College of Agriculture at Saidapet, and the results obtained are fully set forth in paragraph 17 of the Board's report. The opening of an experimental farm at Bellary or Coimbatore as directed in G.O., No. 490, dated 24th September 1896, has been postponed owing to Mr. Benson's absence on furlough. The question of what measures should be taken in this direction on the return of that officer is under the consideration of the Government with reference to the views of the Government of India on the subject. The minor experiments referred to in the Board's report do not call for any special remarks.

Pony and mule breeding operations are carried on under Provincial direction and the results obtained are briefly set forth by the Board in paragraphs 29 and 30 of its present report. The subject has already been fully reviewed by Government in G.O., No. 814, dated 27th September 1897.

9. *VI. Agricultural Education.*—The results of imparting higher education in Agriculture have also been separately reviewed by Government in G.O., No. 636, Educational, dated 12th November 1897, on the report on the working of the College of Agriculture. The question of elementary agricultural education was fully discussed at the Local Conference of 1896 and the Government accepted the following recommendations of that conference, viz.—

(1) that Agriculture should not appear as a separate subject in the curriculum of rural primary schools, but an effort should be made to impart an elementary knowledge of it in the group "Object lessons and elementary science," which group should be made a compulsory subject;

(2) that Agriculture should be recognized as a separate optional subject for boys after they have passed the Fourth standard, and that, until properly-qualified teachers become available, the study of a Text-book on Agriculture in Lower Secondary schools will be better than nothing.

The subject is, however, under reconsideration with reference to the views of the Government of India.

10. *VII. Publication of Agricultural information.*—Two bulletins were issued during the year under review—one "on the use of the iron ploughs in the Ceded districts" and the other "on Tamil Sayings and Proverbs on Agriculture." A valuable and interesting bulletin embodying the results of experiments made with water-lifts by Mr. Chatterton, Professor of Engineering in the College of Engineering, was also issued after the close of the year.

11. *VIII. Final.*—To carry out the objects and policy declared by the Government of India in the eight resolutions referred to above, the department, as it at present exists in this Presidency, will need expansion and re-organization. The subject

presents many difficulties not the least of which are occasioned by the present straitened condition of the finances. The Government hopes, however, that it will be found possible to make material progress towards a satisfactory solution by the end of next year.

(True Extract.)

(Signed) G. S. FORBES,
Ag. Secretary to Government.

To the Educational Department.
„ the Board of Revenue (Revenue Settlement, Land Records and Agriculture).

Endorsement No. 22A.

Copy to the Government of India, Revenue and Agricultural Department.

(Signed) G. S. FORBES,
Ag. Secretary to Government.

Exd. Shaik Karim.

80 Copies.

REPORT ON THE OPERATIONS OF THE DEPARTMENT OF LAND RECORDS AND AGRICULTURE FOR THE YEAR 1896-97.

Introductory.—The opening paragraph of the report on the operations of the Department of Land Records and Agriculture for 1895–96 set forth the recommendations of the two committees appointed to discuss the proposals of the Simla Conference of 1893 with regard to Agricultural Education and the utilization of Land Records, and Dr. Voelcker's report for the construction of a practical scheme of district analysis. The orders of Government on these recommendations are noted below.

2. The recommendations of the committee which sat to discuss the question of Agricultural Education were —

(1) That Agriculture should not appear as a separate subject in the curriculum of rural Primary schools, but that the effort should be to impart an elementary knowledge of it in the group "Object Lessons and Elementary Science," which group should be made a compulsory subject;

(2) that Agriculture should be recognized as a separate optional subject for boys after they have passed the Fourth Standard, and that, until properly qualified teachers become available, the study of a Text-book on Agriculture in Lower Secondary schools will be better than nothing;

(3) that the first necessary step is to provide for the training of the teachers of Lower Secondary and Primary rural schools, and that to this end every training institution, where such teachers are trained, should —

(*a*) have on its staff a master qualified to teach agriculture, and
(*b*) have attached to it a school-garden;

(4) that to secure an adequate supply of trained teachers for the rural Primary and Lower Secondary schools, an Agricultural class should be devoloped in selected educational institutions where the general education will be carried on up to the Upper Secondary Examination, and special education in Agriculture up to the Intermediate Standard. Such classes will need a small demonstrational farm for teaching purposes, and a portion of a Government Experimental farm may be utilized for the purpose, if there be one in the vicinity;

(5) that it is not otherwise expedient to combine a Farm-school for the above purpose, with an Experimental farm, as proposed in the scheme of the Madras Government;

(6) that the early establishment of Experimental farms, as separate organizations and designed for carrying on agricultural investigation, is advisable.

The first two recommendations were accepted by Government, but while approving of the principle of the third and fourth recommendations, Government expressed the opinion that the object in view is practically unattainable. The fifth recommendation as to the inexpediency of combining a Farm-school with an Experimental farm for teaching purposes has also been accepted, except in so far as it may be found possible to utilize a portion of such farm for the demonstration of agricultural methods and practices required for the practical instruction of such agricultural classes, as may ultimately be started in connection with normal schools. The sixth recommendation did not commend itself to Government, unless the experience gained by the management of a single Experimental farm should prove the probability of the successful establishment of additional institutions of a like nature.

3. The recommendations of the committee appointed to discuss the methods of utilizing Land Records and Dr. Voelcker's report for the purpose of constructing a practical scheme of district analysis were —

(1) That in Madras adequate provision has been made for the timely reporting of sudden calamities;

(2) that as regards any serious gradual deterioration, or decline, in a village or tract, the annual ryotwari settlement ensures its being brought to the notice of the jamabandi officer.

(3) that a vigilant and intelligent scrutiny of the village registers by the jamabandi officer, with a view to discovering the cause of any remarkable fluctuations, should continue to be insisted on;

(4) that to provide an account whereby the decline, or progress, of a village can be seen at a glance, it is desirable to compress into one page the more important of the voluminous statistics now embodied in the Revenue Inspector's firka book; and that if this is done the firka book, in its present shape, may be dispensed with;

(5) that it answers no useful purpose to require of Collectors an annual report on the economic condition of their districts as disclosed by a scrutiny of the Land Records, and that in the absence of extraordinary change, such a report cannot be usefully submitted oftener than once in ten years;

(6) that the statistical atlas, now in course of publication, will exhibit a sufficient analysis of each district, in respect of the great agricultural defect, "deficiency of rainfall and absence of irrigation;"

(7) that defects in irrigation, and in the supply of wood and fuel are being adequately investigated by the Revenue, Public Works and Forest Departments;

(8) that a list of the other principal agricultural defects should be drawn up, and that these should be gradually investigated in the order of their importance;

(9) that Experimental farms are necessary for the ascertainment by agriculturel experts of how far defects in agricultural practice are remediable; and that, in Madras, action in this direction is more pressing than in the direction of improving Land Records;

(10) that in view of the extreme importance of securing continuity of expert supervision, in the event of Experimental farms being started, immediate steps should be taken to secure the services of a second agricultural expert to provide for the contingency of Mr. Benson taking furlough, or retiring;

(11) that if, and when, Mr. Benson leaves the service, the original plan of appointing a Civilian Deputy Director of Land Records may be revived;

(12) that, meanwhile, as Mr. Benson has now devoted a year to the study of village and taluk accounts, it is best to leave him in charge of the office of Deputy Director of Land Records without prejudice to his supervising any agricultural work which may be undertaken;

(13) that with reference to the scheme laid before the Government of India for a permanent staff for the maintenance of Survey Records, and training of karnams (*vide* G.O., No. 635, Revenue, dated 17th September 1895), it should be considered whether the strength of the establishment may not be gradually increased, as vacancies occur in the posts allotted to eight European officers, by replacing them, at the same cost, by twelve native Deputy Collectors.

One superior officer would then be available for every two districts and with this increase in numbers it would be possible for them to assist in the supervision of the taluk and village accounts;

(14) that, meanwhile, the Board's proposal for the appointment of three officers of the grade of Deputy Collector to assist in inspecting taluk and village accounts (*vide* B.P., No. 348, R.S., L.R. and Agri., dated 1st November 1895) may be approved;

(15) that after the Deputy Director, or one of the proposed Assistant Directors, has inspected the Land Records of a district, he should submit his report, not to the Board as hitherto, but to the Collector of the district, the Board to be referred to only when a specific general ruling is called for;

(16) that the Collector should devote a paragraph in his jamabandi report to stating the results of the inspection, and the action taken by him thereupon.

The first eight recommendations were accepted by Government. The ninth recommendation was accepted, subject to the limitation that only one Experimental farm should be established until the success of the experiment is assured. With regard to the tenth, eleventh and twelfth recommendations Government considered that it was unnecessary to entertain a second agricultural expert for the purpose specified, that the retention of a Deputy Director of Land Records was a matter of doubtful expediency, but one which would be considered with the proposals for the re-organization

of the Survey Department and the Board of Revenue, and that, as the experiment of establishing a Government farm or Government farms would fully occupy the time of the present agricultural expert it would be impossible for him to remain in charge of the office of the Deputy Director of Land Records. The thirteenth and fourteenth proposals were negatived, while the fifteenth and sixteenth were approved, conditionally upon the retention of the office of the Deputy Director of Land Records.

4. The form of report herein adopted follows the model of previous years. With reference to paragraph 14 (iii) of G.O., Mis. No. 487, Rev. dated 24th September 1896, the Director hopes to submit his proposals for amending the form of the report at an early date.

The instructions on the subject which Sir E. Buck led the Board to expect have not been received.

I.—ORGANIZATION AND MAINTENANCE OF VILLAGE RECORDS.

5. *Land Records.*—Proposals were submitted by the Deputy Director to the Board in the Land Revenue Department for the improvement of taluk manual accounts Nos. 4 to 7 and regarding the distribution of collections between land revenue and cesses. During the latter part of June and the whole of July the taluk accounts of three taluks in Gódávari district, as well as the village accounts of a few selected villages in each taluk, were inspected and reported on. In August, two taluks of South Arcot district were visited and similar inspections were made and reported on. Early in September the Deputy Director was at head-quarters and was chiefly engaged on miscellaneous duties not belonging to the Land Records branch, and also in preparing the report on the inspected taluks. During October, two taluks in Tanjore district were visited and the taluk accounts, including the village accounts of a few villages, were inspected and reported on. In November, the Deputy Director returned to head-quarters and was thereafter engaged chiefly in famine work, until his departure to England on furlough under medical certificate in March 1897.

6. *Training of Karnams.*—In accordance with the scheme of holding annual survey schools, introduced in the preceding year, such schools were held during 1896–97 in 127 out of 156 taluks in the Presidency. The number of men instructed at these schools was 12,913, of whom 6,688 or about 52 per cent. were found, on examination, to possess good or fair knowledge. The taluks in which no schools were held are noted in the margin. No schools were held in the first-mentioned eighteen taluks owing to the unfavourable season which rendered it necessary to keep karnams in their villages at the time when the schools should have been held. In Trichinopoly, the karnams in all taluks were engaged during a portion of the year in the measurement of sub-divisions of survey fields and in the preparation of field measurement books. It was therefore considered inexpedient to hold survey schools for their instruction. In four out of the five taluks in Salem, karnams were employed on re-survey work and no schools were therefore held. In the remaining taluk—Dharmapuri—a school was opened on the 23rd October but had to be closed after a few days owing to the prevalence of cholera.

Districts.	Taluks.
Ganjám	1. Berhampur. 2. Gumsur.
Anantapur	3. Anantapur. 4. Hindúpur. 5. Dharmavaram. 6. Penukonda. 7. Rayadrug.
Bellary	8. Bellary. 9. Adóni. 10. Pattikonda.
Kurnool	11. Proddatur.
Cuddapah	12. Pulivendla. 13. Badvel.
North Arcot	14. Wallajapet.
Nellore	15. Nellore. 16. Kanigiri.
Chingleput	17. Chingleput. 18. Tiruvallúr.
Salem	19. Atur. 20. Námakkal. 21. Tiruchengódu. 22. Salem. 23. Uttangarai. 24. Dharmapuri.
Trichinopoly	All taluks (5).

7. *Training of Revenue Inspectors.*—The total number of Revenue Inspectors in the Presidency during the year was 633. Of these 601 appointments were held by men who had undergone training in survey. Two had been exempted from passing the test, and two more continued to draw the old scale of pay. The remaining appointments were held by acting men untrained in survey. Details are given below:—

Districts.	Number sanctioned.	Number		Remarks.
		Trained in survey.	Not trained.	
Ganjám	12	12	..	
Vizagapatam	9	9	..	
Gódávari	48	47	1	Vacant.
Kistna	48	47	1	
Nellore	32	32	..	
Bellary	28	26	2	Draw pay at the old rate.
Kurnool	30	27	3	
Anantapur	24	22	2	
Cuddapah	41	41	..	
Chingleput	22	22	..	
Madras	3	3	..	
North Arcot	38	38	..	
South Arcot	41	41	..	
Tanjore	37	33	4	
Trichinopoly	24	23	1	
Madura	30	28	2	
Tinnevelly	36	32	4	
Salem	35	32	* 3	
Coimbatore	38	38	..	
Nilgiris	6	4	2	
Malabar	34	31	3	
South Canara	17	13	4	
Total ..	633	601	32	

* Two old school men.

8. *Re-surveys.*—Re-survey was commenced during the year in the taluks of Guntúr and Nandigáma in the Kistna district and in Ramallakot and Nandikotkur in the Kurnool district. The area re-surveyed amounted to 780 square miles in the former district and 294 square miles in the latter. The work in the latter district was delayed by the prevalence of famine which rendered it impossible to spare karnams for the work, except in a few villages.

II.—ANALYSIS OF DISTRICTS.

9. *Statistical Registers.*—So far as information is available, the village statistical registers and the firka books have been written up and checked in Ganjám, Vizagapatam, Gódávari, Bellary, Anantapur, Cuddapah, Coimbatore, Trichinopoly, Tanjore and Nilgiris up to fasli 1304. In South Arcot and Madura, the work is in arrears as regards 19 and 194 villages respectively, while Tinnevelly has almost completed the work, there remaining only 5 villages for which village registers and firka books are to be prepared and 13 villages for which they are to be checked. As regards the work done in this direction during fasli 1305 (1895–96) it would appear that the posting and checking have been completed in the Gódávari, Bellary, Anantapur, Salem and Tanjore districts, and nearly so in Ganjám, Vizagapatam, Kistna, Nellore and Coimbatore. Particulars of progress are shown in the table given below :—

Districts.	Number of Villages (Government and Inam).				
	In the district.	For which village registers have been		For which firka books have been	
		Prepared.	Checked.	Prepared.	Checked.
Ganjám	1,531	1,531	1,195	1,531	1,527
Vizagapatam	294	270	270	293	293
Gódávari	1,449	Complete.		Complete.	
Kistna	1,368	1,356	1,354	1,364	1,352
Kurnool	789	766	668	703	578
Bellary	962	Complete.		Complete.	
Anantapur	1,002	1,293	1,293	1,255	1,187
Cuddapah	1,354	907	907	Complete.	
Nellore	931	1,739	1,465	1,695	1,695
Chingleput	1,782	2,671	2,652	2,448	2,095
South Arcot	2,699	1,767	1,583	1,767	1,583
North Arcot	1,767	Complete.		Complete.	
Salem	3,081	1,481	1,481	1,483	1,483
Coimbatore	1,508	719	719	717	717
Trichinopoly	730	Complete.		Complete.	
Tanjore	2,541	690	597	632	459
Madura	937	1,052	1,010	766	724
Tinnevelly	1,099	36	17	48	29
Nilgiris	48				

10. A report on the economic condition of the district as disclosed by the examination of village registers and firka books for fasli 1303 was received during the year from Salem, the only district from which no similar report had been previously submitted. It was reviewed and submitted to Government in due course. The Government agreeing with the views of the local conference of December 1895 has ordered that the reports on the economic condition of districts be decennial instead of annual as hitherto, and instructions have accordingly been issued to all Collectors requiring them to make such arrangements as will ensure the submission of the report to the Board before the close of the next census year (1901) embodying in the same all the information necessary for the revision, up to the close of the preceding fasli year, of the district memoirs published in the statistical atlas of the Presidency. Revised sheets of firka books were issued during the year agreeably to the proposals of the conference, which were approved by Government. Collectors have been requested to have the entries in them posted from fasli 1301 and to submit progress reports once in six months until all arrears have been cleared up.

III.—COLLECTION OF REVENUE IN PRECARIOUS TRACTS.

11. Owing to serious failure of rains, parts of the Deccan districts—Kurnool, Cuddapah, Anantapur and Bellary—and of Ganjám and Vizagapatam in the north suffered extensive loss of crop. Besides the remissions granted under the usual rules on *wet* lands, the assessment on *dry* lands was remitted to a large extent in the distressed portions of the Deccan districts; and the collection of the remaining demand was also postponed. In Ganjám, remission on "dry" lands was granted only in respect of certain areas cultivated with rain-fed paddy, the crop on which was lost. In Vizagapatam no remission of dry assessment was deemed necessary.

In Anantapur, which is one of the districts most liable to famine, the kistbandi, or scheme of instalments for paying Government revenue, was altered during the year, the first instalment being postponed from December to February.

IV.—MEASURES OF PROTECTION AND RELIEF.

12. *Season and Rainfall.*—The season was generally favourable for agricultural operations, except in the Deccan districts and in parts of Ganjám, Vizagapatam, North Arcot and Salem. In the Nilgiris, the season was unfavourable to coffee, tea and ordinary native crops.

The average rainfall for the Presidency was 47·54 inches against 49·62 inches registered in 1895–96 and 44·80 inches, the average of 25 years ending with 1894–95.

The average rainfall from April to September (south-west monsoon) amounted to 29·37 inches against 32·77 inches in the previous year, and was about an inch more than the normal. The falls were, however, very unevenly distributed. In the West Coast districts and on the Nilgiris the rainfall was from 20 to 25 inches in excess of the average, while in most of the other districts there was considerable deficiency. The monsoon set in fairly well, and, from June to August, the rains were, on the whole, nearly up to the average, except in the Carnatic districts (excluding Nellore) and North Arcot, Salem and Trichinopoly. The fall in September proved scanty in the Circars and in the Deccan districts and was light in the Carnatic, while in the remaining districts it was good and was followed by copious rain in October. At the close of the south-west monsoon period, the state of the season gave cause for anxiety in respect of the Deccan districts, parts of the Circars, the Carnatic and the Central districts and parts of North Arcot. The north-east monsoon commenced late, but the rainfall was copious over the whole of the southern half of the Presidency. The average for the Presidency from October to March was 18·17 inches or 1·32 inches more than in the previous year and 1·75 inches more than the normal fall. All anxiety was then removed as regards the Carnatic and the Central districts, the Kistna and the greater portion of the Gódávari district. The tracts which continued to give anxiety at the close of the north-east monsoon were Ganjám and parts of the Vizagapatam littoral, some of the upland portions of Gódávari, especially the Agency tracts, that portion of the Deccan districts which lies to the west of the Eastern Ghauts and a small portion of North Arcot.

The prices of food-grains, which have been steadily falling since the famine of 1891–92, rose very considerably during the year under report. The rise was due

partly to the season having proved unfavourable in Ganjám, Vizagapatam and the Deccan districts and partly to the large exports of grain northwards to Bombay and Central Provinces as well as to Ceylon. Until June, the prices were normal; a slight rise was perceptible in July, August and September but nowhere was the rise serious. During the latter half of September, however, the upward tendency of prices became more pronounced, and in October and November the rise became rapid almost throughout the Presidency. The showers of November and December and the harvests that followed brought down the prices for a time, but towards the close of the year the upward tendency had again begun to manifest itself. At the end of March, the prices of staple food-grains were higher than the "scarcity" rates in the Deccan districts and higher than the "warning" rates in all other districts except South Arcot, Trichinopoly, Tanjore, Madura, Tinnevelly, South Canara and the Nilgiris.

The deficient rainfall and consequent extensive local failure of crop, coupled with the excessive rise in prices, stimulated by the existence of scarcity in other parts of India, gave rise to great distress among the labouring classes, and State relief had to be provided for them. Test works opened in the Deccan districts in November having attracted large numbers, ordinary relief works were started from time to time as the area of distress extended. The affected tracts which, at the end of November, covered an area of 8,495 square miles with a population of 1,206,000, comprised, at the end of the official year, an area of 15,988 square miles with a population of 3,271,000, and embraced roughly speaking, the taluks occupying the north-western part of Cuddapah, and the northern half of Anantapur, the taluks of Kurnool immediately adjoining the above, the eastern and northern taluks of Bellary and portions of Ganjám and Vizagapatam littoral. Relief works were started in Ganjám in February and in Vizagapatam about the middle of March.

The measures of relief which were in operation at the close of the year were—

(1) relief on works;

(2) gratuitous relief by the distribution of cooked food in kitchens, and by the grant of money doles (in Ganjám only);

(3) relief of weavers at their own trade;

(4) grant of advances under the Land Improvement and the Agriculturists' Loans Acts; and

(5) suspension of land revenue.

The numbers relieved at the end of the year were—

(*a*) On works, 86,385.

(*b*) Gratuitously, 5,858.

(*c*) Weavers, 8,806.

13. *Extension of Communications.*—The East Coast Railway has been opened for public traffic from Bezwada to Cuttack road, a length of 498·94 miles, with a branch line from Kurda road to Puri (25·34 miles), thus making a total length of 524·28 miles. Work on the Nilgiri Railway (16·81 miles) was resumed in April 1896 and good progress was made during the year. The Ennur-Bezwada section of the Bezwada-Madras Railway (254½ miles) is in good progress, and a portion from Bezwada to Bápatla (40 miles) is almost finished, and ready for opening. The Peralam-Karikal Railway (14·45 miles) is under construction by the South Indian Railway on behalf of the French Government. The Arsikere-Mangalore Railway Survey has been completed and the plans and estimates have been forwarded to the Government of India.

14. *Irrigation.*—An expenditure of Rs. 2·04 lakhs was incurred during the year on the Rushikulya project in the Ganjám district. The Suradá reservoir nearly approached completion, while its head sluice and channel therefrom to the Johoro river, as well as several distributaries, were fully completed. The total outlay on the project up to the end of the year was Rs. 41·11 lakhs. The outlay on improvements to the Kistna delta system during the year was Rs. 5·84 lakhs, and to the end of the year Rs. 119·61 lakhs. The new head sluice at Sítanagaram, which was commenced in the preceding year to replace the existing head sluice, was brought up to platform level during the year. Investigations for the proper distribution of flood water and of water for irrigation in the Cauvery delta system were prosecuted during the year, and estimates, aggregating Rs. 7·86 lakhs, for improvements to the Upper Coleroon

anikat, and for fitting lift shutters to the grand anikat, were prepared. Rs. 0·42 lakhs were expended on works connected with the improvements to the system. The net outlay on the Periyár project in the Madura district during the year was Rs. 0·44 lakhs, after deducting a recovery of expenditure on tools and plant of Rs. 0·86 lakhs. Up to the end of the year, 36 miles of main canals and 50 miles of branch channels were completed, and a considerable number of distributaries were completed or in progress.

The minor irrigation works under the charge of the Revenue department number over 30,000, having an irrigable area of about 1½ million acres. The amount sanctioned for their repairs during the year was Rs. 4·74 lakhs, out of which 4·29 lakhs were actually expended.

15. *Advances to Agriculturists.*—The loans granted during the year under report under the Land Improvement and Agriculturists' Loans Acts, amounted to Rupees 5,52,607 against Rs. 2,03,472 advanced in the previous year. The large increase, as compared with the preceding three years, was due to the unfavourable character of the season during the latter part of the year in Ganjám, Vizagapatam, Cuddapah, Kurnool, Bellary and Anantapur. Out of the 7½ lakhs of rupees sanctioned for the year, 5 lakhs were specially allotted for the Madura district in view to afford facilities for the reclamation of waste lands commanded by the Periyár project; but the amount actually advanced on this account was only Rs. 45,361. More than 48 per cent. of the total amount was advanced in the Deccan districts and 18 per cent. in the North Arcot and South Arcot districts, as shown in the margin.

Deccan Districts.	Rs.	A.	P.
Kurnool	31,807	8	0
Bellary	1,10,738	5	10
Anantapur	1,17,535	0	0
Cuddapah	5,376	9	2
Total ...	2,65,457	7	0
North Arcot	78,336	1	6
South Arcot	21,784	0	0
Total ...	1,00,120	1	6

The following statement shows the amounts advanced under the Land Improvement and Agriculturists' Loans Acts during the past five years:—

Years.	Budget allotment under both Acts.	Advances made under		Total advances.
		The Land Improvement Loans Act.	The Agriculturists' Loans Act.	
	Rs.	Rs.	Rs.	Rs.
1892-93	23,00,000	20,41,809	2,33,350	22,75,159
1893-94	10,00,000	4,40,312	10,609	4,50,921
1894-95	7,00,000	2,63,709	15,882	2,79,591
1895-96	3,00,000	1,91,521	11,951	2,03,472
1896-97	7,50,000	5,04,454	48,153	5,52,607

V.—AGRICULTURAL EDUCATION AND EXPERIMENTS.

16. *Agricultural Education.*—The work of the College of Agriculture at Saidapet has been separately reviewed, and, with the exception of certain crop and dairy experiments of general interest, calls for no further notice in this report. With a view to popularize the institution, Government has again urged all Collectors to do their best to provide employment for passed students of the College. The Principal of the College has reported that the result of his circulation among the Collectors and District officers of a statement showing the names of passed students seeking employment was satisfactory.

17. The College farm continued during the year under report to be worked chiefly for the edification of the students. The Principal gives the following interesting account of the results of the year's cultivation, and of the yield of milk given by the farm cows:—

(1) "The paddy is divided into seven classes according to method of cultivation and to the fact whether it was damaged or not by flood. It will be observed that the students must have seen paddy cultivated in a variety of ways. The paddy which

was drilled and which escaped damage by flood yielded 3,712 lb. per acre of grain and 3,360 lb. of straw. The yield of grain must be considered *excellent*. The land on which this crop was grown may be said to be the best soil on the farm, but it is far inferior to soils in the Tanjore district from which a yield of 3,000 lb. would be considered very good. The paddy which was transplanted and which also escaped damage by flood may also be said to have yielded excellently (2,203 lb. per acre) when the nature of the soil is considered. The paddy which was transplanted but which was damaged by flood had its yield of grain decreased by about 300 lb. and its yield of straw increased by about 600 lb. The paddy sown broadcast dry on very poor soil yielded well (1,141 lb. per acre). Great damage was done by flood to the paddy growing on 8 acres of land, the crop having been submerged for days under running water. Of course, the yield was very considerably decreased.

(2) "The ragi transplanted and grown under irrigation yielded very well—grain per acre 960 lb.; straw per acre 4,633 lb. That drilled and grown as a dry crop was very much damaged by heavy rain and yielded badly in consequence. The varagu (sown with dholl) did fairly well.

(3) "The pulse crops were seriously damaged by the heavy rains of November and December—the green-gram was practically destroyed.

(4) "Among the industrial crops, Sea Island cotton deserves to be specially mentioned. The yield per acre was 1,200 lb. of cotton in seed (360 lb. lint and 840 lb. seed). The average yield in this Presidency on the so-called black cotton soil is 50 lb. to 70 lb. lint and 150 lb. to 200 lb. seed. The Sea Island cotton as a good staple and the lint is easily separated from the seed. There appears to be no difficulty about its cultivation. The only disadvantage it possesses is the height of the plant which necessitates a crooked stick being used in gathering the higher bolls. The farm on sandy soil obtained a yield about six times as large as that raised on black cotton soil. It would be interesting if really efficient experiments were to be conducted with the farm seed in the districts where black cotton soil is found. The sugarcane was submerged for some days and very much damaged in consequence. The ground-nut shown as harvested in this report was put down in August 1895. One-third of the crop was given for harvesting and 640 lb. per acre represents therefore two-thirds of the total produce. The yield must be considered poor.

(5) "Among sundry crops, plantains did fairly well in spite of an unfavourable season. The fruit and leaves from half an acre fetched over Rs. 30. The vegetables were much damaged by heavy rain and in some cases completely destroyed. In an ordinary season the cultivation of vegetables is very profitable and were the farm worked for profit it would be desirable to largely increase the area under vegetables. They respond well to careful cultivation and there is no difficulty about their disposal.

Crops.	Area sown.	Outturn.				Remark.
		Grain or seed.		Straw or fodder.		
		Amount.	Per acre.	Amount.	Per acre.	
Cereals.	ACS.	LB.	LB.	LB.	LB.	
Paddy transplanted (not damaged by flood).	3·50	7 710 5	2,203	8,800	2,514	
Paddy transplanted (damaged by flood).	1·60	3,026	1,891	5,040	3,150	
Paddy sown broadcast, wet system (damaged by heavy rain).	1·00	1,031	1,031	2,400	2,400	Inferior variety sown, so slightly saltish.
Paddy drilled (not damaged by flood).	3·00	11,136	3,712	10,080	3,360	
Paddy drilled (damaged by flood) ..	5·25	6,233	1,188	15,680	2,987	
Paddy drilled, inferior variety in sandy soil.	3·00	1,513	504	5,040	1,680	
Paddy broadcast, dry, sandy soil ..	3·30	3,766	1,141	7,840	2,376	
Ragi drilled, dry crop	2·50	598	239	3,360	1,344	Crop while young suffered severely from excessive rain.
Ragi transplanted and under irrigation.	4·77	4,580	960	22,101	4,633	
Varagu (sown with dholl)	3·50	2,170	620	5,888	1,682	Dholl standing.

Crops.	Area sown.	Outturn.				Remarks.
		Grain or seed.		Straw or fodder.		
		Amount.	Per acre.	Amount.	Per acre.	
Pulses.	ACS.	LB.	LB.	LB.	LB.	
Black gram	2·75	1,190	433	..	..	Crop suffered while in flower owing to continuous heavy rain.
Green gram	1·90	140	74	..	..	Do. do.
Dholl (sown with varagu).	6·20	1,170	189	..	..	Varagu harvested last year and shown in last year's report.
Industrial.						
Sugarcane	1·00	Sold by auction for Rs. 152-8-0.				Crop submerged during the heavy rains of November and December, and much damaged. Over quarter of an acre reserved for seed and still standing.
						....
Ground-nut (not yet harvested).	3·30	..	..	5,376 (haulms).	1,629 (haulms).	
Ground-nut (harvested).	1·00	640	640	..	..	Haulms shown in last year's report.
						....
Sea Island cotton ..	·10	120 lb. cotton in seed.	1,200 lb. cotton in seed.	..	..	
Sundries.						
Plantains	·50	1,500 (fruit).	3,000 (fruit).	Leaves worth Rs. 8.	Leaves worth Rs. 16.	Crop still standing, green plantain sold at 3 pies a pound.
Chillies	·15	Dry chillies worth Rupees 10.	Dry chillies worth Rupees 66-10-8.	..	..	....
Do.	·25	..	..	..	..	Crop standing.
English and Indian vegetables.	2·00	Vegetables worth Rupees 83-6-0.	Vegetables worth Rupees 41-11-0.	..	..	Vegetables very much damaged by heavy and incessant rain.
Green fodder.						
Cholam	23·45	..	..	1,17,855	5,026	One cutting only, damaged by heavy rain.
Horse gram	11·55	..	..	21,212	1,836·5	Sown late owing to heavy rain, crop standing in ·75 acre.
						....
Guinea grass	2·00	..	..	7,411	3,705·5	
Lucerne	·10	..	..	275	2,750	From one cutting only crop still standing.
Green manure.						
Sunn hemp	1·60	..	..	..	..	Ploughed in.
Horse gram						
Indigo	1·90	..	..	..	..	Ploughed in.
Dholl						

(6) "Eleven cows yielded milk during the year against twelve during the previous year. Meenachi I (16 years old) was sold on account of age. The yield of milk increased by 1,929 lb. (517 Madras measures). Tara (No. 2), the second best milker on the farm, slipped her calf, and milked without a calf at foot for 346 days. Her yield in consequence was much reduced.

(7) "Although the number of cows was decreased by one and the yield of milk was increased by 1,929 lb., the average yield, as worked out in previous report, decreased to 8·15 lb. This furnishes another proof of the inutility of the averages arrived at by the meth[illegible] adopted above, in disapproval of which I have several times expressed myself The 'average for the herd' is best obtained, I think, by dividing the total yield by 11 (the number of cows) × 365. By this process the average works out as 5·9[illegible] lb. I do not think it practicable to give effect to the suggestion made in paragraph 2 of B.P., No. 6035, dated 27th November 1896. In any case, I consider too much has been made of the 'average yield.' In practice, a herd would be judged on various grounds and the 'average yield' during any given year would not be reckoned of much, if any, consequence.

(8) "The income from the sale of milk, butter, &c., decreased by Rs. 120. The explanation of this is as follows:—1st, during the year under report the farm did not maintain any buffaloes. Two buffaloes were kept during the previous year. They

yielded 465 measures of milk, which realized Rs. 87. These animals were most troublesome and it was not worth while to employ a separate man to look after them. I consequently decided not to keep any buffaloes during 1896–97. 2nd, in May 1895, the prices of milk, butter and curd were kept at the following rates:—As. 3–6 per measure, As. 12 per pound, As. 1–6 per measure, respectively. In May 1896, it was not practicable to maintain these rates and they were consequently reduced to As. 2–8 per measure of milk, As. 8 per pound of butter and Anna 1 per measure of curd. 3rd, in 1895–96, all sums due for milk, butter, &c., were recovered during the year, but in 1896–97 Rs. 92–2–10 stood over as balance. I may add that the whole of this sum will be recovered before 1st July next, except Rs. 8–11–10, about which, I fear, there will have to be legal proceedings.

(9) "The following statement gives the yield of milk. All the cows are pure bred Nellores, with the exception of Kali II, which is a cross between Nellore and Mysore:—

STATEMENT showing the yield of milk in the College Farm herd during 1896–97.

No.	Name of cow.	Age of cow.	Yield in 1896–97.		Number of days cow yielded.	Average per day in	
			Madras measures of 100 cubic inches.	Pounds.		Madras measures.	Pounds.
		YEARS.					
1	Kalyani I *	13	1,086·125	4,051·246	326	3·332	12·428
2	Tára *	8	526·375	1,963·379	346	1·521	5·673
3	Kalyani III *	7	464·125	1,731·186	224	2·072	7·729
4	Parvati *	6	400·625	1,494·331	220	1·821	6·792
5	Alamelu *	6	556·250	2,074·813	344	1·617	6·031
6	Narayani *	9	880·375	3,283·799	363	2·425	9·045
7	Seetha *	7	284·500	1,061·185	144	1·975	7·367
8	Meenachi II *	8	562·125	2,096·726	238	2·362	8·810
9	Do. I *	16	Sold.				
10	Sahib's cow *	13	838·625	3,128·071	364	2·304	8·594
11	Kali II †	12	722·125	2,693·526	304	2·375	8·859
12	Govindu *	9	102·375	381·859	66	1·55	5·785
	Total ..		6,423·625	23,960·121	2,939	..	..

* Nellore. † Cross bred, Nellore and Mysore.

(10) "In paragraph 8 of your Proceedings, No. 10116, of 14th September 1896, you desired certain calculations to be made, so that 'the public may form some idea as to the amount of net income that can be derived from a well-nourished cow of good breed.' With this object in view I shall work out the actual expenses of, and the actual income from, the best milker on the farm and also from one of the medium milkers for last financial year. In both cases, the whole milking period fell within the financial year.

(11) "*Kalyani I.*—This animal milked for 326 days and yielded 1,086 Madras measures. While milking her daily feed was as follows:—4 lb. cake, 4 lb. dholl husk, 2 lb. wheat bran, 2 oz. salt, 20 lb. paddy-straw (or its equivalent). During her milking period of 326 days, she therefore consumed 1,304 lb. cake, 1,304 lb. dholl husk, 652 lb. wheat bran, 40¾ lb. salt, 6,520 lb. straw. When dry she got only 15 lb. straw and in 39 days consumed 585 lb.

"Her total cost of feeding was, therefore,—

	Rs.	A.	P.
1,304 lb. cake, at Rs. 12–12–0 per 500 lb.	33	4	0
1,304 lb. dholl husk, at 40 lb. per rupee	32	9	7
652 lb. of wheat bran, at 30 lb. per rupee	21	11	9
40¾ lb. salt = 13 1/12 measures, at As. 2 per measure	1	11	2
6,520 lb. straw, at Rs. 10–8–0 a ton	30	9	0
585 lb. straw, at Rs. 10–8–0 a ton	2	11	11
Total ...	122	9	5

"Attendance may be estimated at Re. 1 a month, that is, Rs. 12 a year. Roughly speaking, the cost of maintaining such a cow may be put down as Rs. 135. Her produce for the year was as follows:—

	Rs.	A.	P.
1,086 measures of milk, at As. 3–6 a measure	237	9	0
Value of 4 tons of manure	12	0	0
Value of calf	15	0	0
Total ...	264	9	0

The profit, excluding depreciation, is, therefore, about Rs. 130.

(12) "*Kali II.*—This animal gave 722 measures of milk in 304 days. During this period she received a daily ration of 3 lb. cake, 3 lb. dholl husk, 2 lb. wheat bran, 2 oz. salt and 20 lb. paddy straw, or its equivalent. During the 61 days she was dry she received 15 lb. straw a day. A similar calculation as that made for Kalyani I gives the total cost of maintaining Kali II as follows:—

	Rs.	A.	P.
912 lb. cake (3 × 304), at Rs. 12–12–0 per 500 lb.	23	4	1
912 lb. dholl husk (3 × 304), at 40 lb. per rupee	22	12	10
608 lb. wheat bran (2 × 304), at 30 lb. per rupee	20	4	3
38 lb. salt = 12⅔ measures, at As. 2 a measure	1	9	4
6,080 lb. straw (20 × 304), at Rs. 10–8–0 a ton	28	8	0
915 lb. straw (15 × 61), at Rs. 10–8–0 a ton	4	4	8
Total ...	100	11	2
Add attendance ...	12	0	0
Grand Total ...	112	11	2

"Her *produce* was as follows:—

	Rs.	A.	P.
722 measures of milk, at As. 3-6 per measure	157	15	0
Value of 4 tons manure	12	0	0
Value of calf	12	0	0
Total ...	181	15	0

The profit, excluding depreciation, is therefore, about Rs. 69.

(13) "I have assumed that all the milk was sold for As. 3–6 a measure. No doubt were the farm a private venture and were therefore able to take certain steps to dispose of its produce, *all* the milk could be sold at the price mentioned. The farm durng all months of the year, except May and June, sells its milk at As. 3–6 a measure to customers, who are not students of the College, and at As. 3 a measure to students of the College; during May and June the price is usually As. 2–8 a measure. As regards butter, the price varies on the farm from As. 8 to Rs. 1–8–0 a pound.

(14) "No doubt a private firm, producing a fairly large quantity of good butter, could obtain Re. 1 or As. 14 for a pound all the year through. It requires from five to six measures of farm milk to make a pound of butter."

18. As noted in the opening paragraphs, Government has determined that only one Experimental farm should be started at first deferring any extension of the scheme till the success of the preliminary venture is assured. Owing to famine work, and the departure on furlough of its only agricultural expert, the Board is obliged to allow the opening of the farm to stand over for the present.

19. *New Crops.*—No further experiments were made with Cape oats and barley, the climate of Ootacamund having shown itself unsuitable for both the crops. The Collectors of the Nilgiris and Madura were supplied with Seoni pissi and wheat in October last, but no reports of the results of the cultivation of the seeds have been received from them.

Fresh supplies of Sida seeds were forwarded to the Principal of the Agricultural College towards the close of the year with a request that he would make further experiments. No report on the subject was received within the year.

20. *Bulletins.*—The following bulletins were issued during the year:—

No. 33.—On the use of iron ploughs in the Ceded districts.
No. 34.—Tamil sayings and proverbs on agriculture.

21. *Outturn Experiments by Revenue officers.*—The results of the experiments conducted during the year by the Divisional officers and Tahsildars are as far as ever from furnishing any trustworthy data from which an average yield per acre can be calculated, or the correctness of the settlement estimates of outturn can be gauged. The Board has recently submitted its quinquennial report on these experiments, with its views thereon—*vide* B.P., No. 633, dated 23rd September 1897.

22. *Agricultural Implements and Machines.*—No demonstrations of any kind were conducted during the year as the Agricultural Inspectors and the Sub-Assistant Director were engaged in investigating the different varieties of cholam, cotton and indigo grown in Coimbatore, Madura, Trichinopoly and the Ceded districts and the various methods of cultivation. The Inspectors were not, however, able to complete the enquiry as they were called away for famine duty in the Deccan districts.

23. *Water-lifts.*—Further experiments were sanctioned, but were not carried out owing to the Deputy Director being employed on famine duty. Some useful experiments were conducted by Mr. Chatterton, Professor in the College of Engineering, and, after the close of the year, his conclusions were issued in the form of a bulletin with a brief preface by Mr. Benson.

24. *The Madras Agri-Horticultural Society.*—The total income of the Society amounted to Rs. 10,637, of which Rs. 4,000 was contributed by Government and Rs. 1,842 by subscriptions. The sale of seeds and plants also contributed to a certain extent to the income. During the year the number of members rose from 78 to 79. The annual show of flowers, fruit and vegetables was held on the 29th February 1896 and was, as usual, a great success. The library of the Society was strengthened by gifts and purchase, and many new plants were added to the gardens. The usual system of exchanging seeds and plants was continued.

25. *Collections for the Imperial Institute.*—The requisitions of the Reporter on Economic Products for a variety of specimens of plants, seeds, oils, fibres, &c., were complied with to the best of the Board's ability.

VI.—CATTLE-BREEDING AND THE CIVIL VETERINARY DEPARTMENT.

26. *The Civil Veterinary Department.*—During the year under review, Veterinary-Lieutenant A. E. Clarke continued to be Superintendent of the Civil Veterinary Department till the 22nd April 1897, when he reverted to military service, and was succeeded by Veterinary-Lieutenant Edwards. Mr. Clarke spent 135 days on tour and 179 at head-quarters. Out of the latter period, he devoted 41 days to a course of 32 lectures and 9 classes at the College of Agriculture, Saidapet.

27. A description of the breeds of cattle in the five districts selected for Bacteriological Survey has still to be prepared. The Superintendent's attention has been drawn to the matter.

28. Of the thirteen Stock Inspectors in service at the beginning of the year, six were dispensed with in accordance with the directions contained in G.O., No. 3891, dated 29th September 1896, communicated to the Superintendent, Civil Veterinary Department, in B. P., No. 273, dated 14th October 1896, while a clerk on Rs. 20 was added to the Superintendent's office establishment.

29. *Pony-breeding.*—Of the fourteen stallions that were at work at the commencement of the year, one died and another was sold. Three new stallions were purchased by the Inspector-General, Civil Veterinary Department, and added to the stock. Thus, at the close of the year, there were fifteen stallions, of which eight were stationed in Coimbatore, six in Salem, and 1 in Madura. The past year shows the greatest number of coverings (470) made in the last five years. But the average number per stallion, working throughout the year, excluding the stallions which worked during part of the year only, is only 36·8 against 39·5 of the previous year. The short work is generally attributed, in Coimbatore, (1) to the disinclination of the people to send their mares to the stallions in June and July, the mares being in poor condition at that season, and there being a difficulty in procuring fodder where the journey to the covering station is a long one, (2) to the illness of two stallions, Rajah and Max; in Salem, to the competition of the donkey-stallions provided for mule-breeding; and

in Madura, to the majority of mares being undersized and therefore unsuitable to the stallion Selim, which has since been transferred to the Coimbatore district. None of the three new stallions, which arrived in Salem on the 17th December 1896, worked during the year. The results of the coverings in 1895–96 compare unfavourably with those of the preceding year. Out of 398 mares covered, the results of 292 reported by the Revenue officers, and confirmed by the inspections of the Deputy Superintendent, Civil Veterinary Department, show 54 foalings (18 per cent.), 32 abortions (12 per cent.) and 206 unsuccessful cases (71 per cent.). The percentage of success in the previous year was 26. This poor result is ascribed, as usual, to the bad condition of the mares, owing to neglect and ill-treatment by their owners.

Two pony shows were held during the year—one in May 1896 at Tiruppur in the Coimbatore district and the other in December 1896 at Berikai in the Salem district. The reports of the shows show that the progeny of the Government stallions were generally of good quality in Coimbatore, but poor in Salem. At Hosúr, 171 ponies were castrated during the year, as against 134 during the previous year; in Coimbatore only 17 ponies were castrated as against 98 during the previous year. The short work in the latter district was ascribed chiefly to the small number of pony entires in the areas in which operations were undertaken.

30. *Mule-breeding.*—Of the four donkey-stallions, two Persian and two Punjabi, which were purchased in 1895–96, one Persian and one Punjabi were kept at Hosúr in the Salem district and the other two were stationed at Kollegal in the north of the Coimbatore district. Work was not begun till the end of the hot weather, after which, 36 coverings were effected in Coimbatore and 28 in Salem. Of the 36 mares covered in the former district, 10 belonged to Mr. Holmes, a coffee planter, at whose instance the experiment was undertaken. The small extent to which the donkey-stallions have as yet been used is attributed to the deep-rooted popular prejudice against these animals as unclean, and also to the illness of one of the stallions. Time and the handsome rewards which are offered for the exhibition of mule foals will, it may be hoped, gradually overcome this prejudice; and, meanwhile, the beginning made is far from discouraging.

31. *Cattle Fairs.*—The provisions of the Cattle Disease Prevention Act (Act II of 1866) were enforced at certain cattle fairs in South Canara, Salem, North Arcot, South Arcot, Tanjore, Madura and Tinnevelly at the request of the Collectors of these districts.

32. *Mortality among Live-stock from Diseases, and Attacks of Snakes and Wild Beasts.*—The mortality among cattle from diseases and attacks of snakes and wild beasts during 1896–97, as compared with that in the previous year, and with the average of the five years ending 1895–96 is given in the subjoined table:—

Causes of death.	Number amongst cattle.			Number amongst horses and ponies.		
	Average for five years ending 1895–96.	In 1895–96.	In 1896–97.	Average for five years ending 1895–96.	In 1895–96.	In 1896–97.
1	2	3	4	5	6	7
Diseases—						
Rinderpest	14,424	21,475	43,959	..	..	..
Diarrhœa and dysentery	18,072	11,089	17,433	19	44	21
Total ..	32,496	32,564	61,392	19	44	21
Anthrax	17,812	17,746	21,898	17	5	10
Epizootic aphtha	6,444	3,477	2,706	..	..	..
Variola *	2,072	2,063	3,987	..	..	..
Others	33,009	36,439	35,197	146	163	132
Total deaths from diseases ..	91,833	92,289	125,180	182	212	163
Killed by snakes and wild beasts—						
Snakes	2,249	2,656	2,024	8	8	4
Wild beasts	10,433	10,566	9,501	167	119	114
Poisoning criminal	23	21	19	..	..	..
Total ..	12,705	13,243	11,544	175	127	118
Grand Total ..	104,538	105,532	136,724	357	339	281

* Deaths shown against this disease are, in most cases, suspected to be due to rinderpest.

33. *Cattle Diseases.*—The number of deaths among cattle from diseases was 35·6 per cent. higher than in the previous year, and 36·3 higher than the average of the five years ending 1895–96. Nearly half of the number of deaths from diseases was contributed by rinderpest and diarrhœa and dysentery, which showed a large increase of 88·5 per cent. over the corresponding figures of the previous year. Deaths from anthrax, the next most fatal disease, accounted for 17·5 per cent. of the total, and showed an increase of 23·4 per cent. over the figures of the previous year. The number of deaths from unspecified diseases exhibited a slight decrease during the year under report, this item accounting for about 28·1 per cent. of the total mortality from disease. The only other head under which a decrease is to be observed is "Epizootic aphtha."

Rinderpest was especially rife in Gódávari, Kurnool, Bellary, Anantapur, Cuddapah, Nellore and Chingleput, these districts contributing 88 per cent. of the total number of deaths from this cause. More than one-third of the deaths from diarrhœa and dysentery were reported from Chingleput, while Kistna and Gódávari contributed largely to the total. Anthrax was especially prevalent in Gódávari and Chingleput, these two districts contributing nearly half the total; Kistna, Nellore, North Arcot and Tanjore also suffered severely from this disease. Epizootic aphtha was distributed throughout the Presidency, but Ganjám was exceptional in its losses from variola, so far as the mortality returns go, but the deaths were probably really due to rinderpest. Numerous deaths from unspecified diseases were reported from Gódávari, Kistna, Kurnool, Bellary, Anantapur, Cuddapah, Nellore, Chingleput and Coimbatore, which contributed together 85·3 per cent. of the total deaths from such causes.

34. Taking the losses from all diseases together, the death-rate was highest in Chingleput, being 31·2 per mille of the total stock; Kurnool and Bellary coming next with a death-rate of 22·1 per mille.

The subjoined statement compares the total number of deaths from diseases amongst cattle and horses during the year under review with the numbers returned in the previous year and with the average of the five years ending 1895–96, so far as Government villages are concerned:—

Year.	Horned cattle.			Horses and ponies.		
	Number of		Rate per mille.	Number of		Rate per mille.
	Stock.	Deaths from diseases.		Stock.	Deaths from diseases.	
1891-92	14,849,000	87,349	5·9	42,000	155	3·7
1892-93	14,342,000	101,990	7·1	40,000	142	3·5
1893-94	16,192,000	86,554	5·3	41,000	226	5·5
1894-95	16,112,000	82,217	5·1	37,000	171	4·6
1895-96	16,327,000	90,102	5·5	41,000	208	5·1
Average ..	15,564,000	89,642	5·7	40,000	180	4·5
1896-97	15,582,000	122,726	7·9	40,000	162	4·0

The death-rate among cattle was far above the average, while among horses and ponies it was slightly below it.

35. *Deaths caused by Snakes and Wild Beasts.*—There was a noticeable decrease in the number of cattle killed by snakes and wild beasts. The subjoined statement shows the action taken in the cases of criminal poisoning that occurred during the year under report:—

District.	Month.	Number of cattle poisoned.	Action taken.
1	2	3	4
Gódávari	April 1896	2	No criminal action was taken either of these cases, as the owners of the cattle merely suspected that death might have resulted from the effects of poison, and could not produce witnesses to prove their suspicion.
Kistna	June 1896	2	In one case three persons were convicted and sentenced to imprisonment, and in the other the accused was discharged for want of proof.
	January 1897	2	.....
Kurnool	January 1897	1	Two persons were convicted, and sentenced to rigorous imprisonment and fine.
Cuddapah ..	December 1896	3	Not reported.
Nellore	September 1896	1	The culprit was sentenced to two months' rigorous imprisonment.
Coimbatore ..	April 1896	1	The accused were discharged for want of evidence.
	July 1896	1	Do. do. do.
	December 1896	2	The matter was dropped as the owner of the cattle did not take any steps to detect the real culprits.
	January 1897	2	The accused were all discharged.
Tanjore	September 1896	1	The accused were discharged for want of evidence.
	January 1897	1	The case was dismissed for want of evidence.
	Total ..	19	

VII.—MISCELLANEOUS.

36. *Crop Forecast.*—During the year, ground-nut and sugarcane were added to the list of crops, for which forecasts are to be prepared. The forecasts of the listed crops were issued on the dates noted in the subjoined table:—

Crops.	Reports.		
	Sowings.	Forecast (first).	Forecast (second).
Paddy	15th October	16th December ..	18th February.
Indigo	16th September ..	15th ,, ..	....
Gingelly (early)	16th August	2nd November ..	....
Do. (late)	2nd January	15th April	....
Cotton (first)	15th August	10th December. ..	13th February.
Do. (second)	10th October	19th February	....
Ground-nut	....	19th ,, ...	....
Sugarcane	....		

37. *Exploration for Minerals.*—The Geological Survey of the Salem and Coimbatore districts was continued by Mr. Middlemiss and is expected to be completed during 1897. An examination was made of some gold-bearing reefs near Kollegal. The special investigation of the corundum-bearing rock has resulted in the discovery not only of many new fields, but also of the fact that the corundum occurs in definite bands of rock which can be followed with almost the same certainty as a seam of coal. The preliminary survey being sufficiently advanced to render the commencement of exploratory workings desirable with a view to testing the extent and richness of the corundum-bearing rock, arrangements were made by the Survey Department with the Government for carrying out this work, and a series of excavations is now being made by the Public Works Department at places pointed out by Mr. Middlemiss.

Several new discoveries of iron ores were made, and old fields were visited. A specialist, however, gave reasons for believing that the manufactured charcoal iron of this Presidency cannot compete with the imported product, but his figures and reasons are not considered decisive. Enquiries are being made, by the Forest Department as to the supply of charcoal which can be annually relied on, and the price at which it can be laid down and the Government of Madras has recommended that 300 tons of Korijamalai iron ore and 600 tons of Bengal coal may be sent to England in view to experiments being made on a large scale as to the best method of working up the ore with the fuel obtainable in India.

In accordance with the instructions of Government a consignment of steatite was collected for shipment to England.

38. *Rail-borne trade of the Presidency.*—In September 1896, the registration of rail-borne trade statistics, which had been previously carried on under the supervision of the Examiner of Guaranteed Railway Accounts, Bombay, was undertaken by the various Railway companies, the cost of the establishment necessary for the work being met by Government. The compilation of the quarterly returns was, as usual, carried out in the office of the Examiner of Guaranteed Railway Accounts, Bombay, and the annual returns, which are compiled from the quarterly returns, will be issued shortly with a separate review. They show that the total amounts of the rail-borne trade of this Presidency during 1896–97 was the largest recorded since registration was first undertaken. The increase was chiefly due to the extension of the East Coast lines and to the large export of food-grains to other provinces, where dearth prevailed. The subjoined statement summarises the figures for the last six years :—

Years.	Imports.		Exports.		Integral.		Total.	
	Amount.*	Value.†	Amount.*	Value.†	Amount.*	Value.†	Amount.*	Value.†
	MDS.	RS.	MDS.	RS.	MDS.	RS.	MDS.	RS.
1891–92	7,027	5,25	4,717	3,61	27,305	19,79	39,049	28,65
1892–93	7,257	5,53	5,399	4,16	24,110	20,44	36,766	30,13
1893–94	7,661	5,64	6,125	4,46	25,021	21,45	38,807	31,55
1894–95	8,645	6,66	6,571	4,65	30,802	27,85	46,018	39,16
1895–96	8,943	6,69	7,330	4,82	32,521	30,27	48,794	41,78
1896–97	7,180	6,64	9,118	5,37	33,074	33,47	49,372	45,48

* Thousands of maunds. † Lakhs of rupees.

The increase, as compared with the figures of the previous five years, occurred chiefly under the head of exports. The small increase in the internal trade was more than counterbalanced by the decrease in the imports from other provinces, the imports in the year under report being smaller than in any one of the previous five years except 1891–92. Imports from other provinces consisted mainly of coal and coke from Hyderabad and grain and pulse from Mysore. Compared with the previous year, there was a decrease of nearly 20 per cent. in the volume and 0·7 per cent. in the value of this trade. The decrease in the volume of imports is to be attributed to a considerable extent to the falling off in the import of grain and pulse. The cause of this was the large demand in distressed areas outside the Presidency, and the consequent rise in prices furnishes also to a certain extent the explanation of the disproportionate decrease in the value, as compared with the volume of the trade.

As compared with the average of the previous five years, exports to other provinces showed an increase of 51 per cent. in volume and 50 per cent. in value. As compared with the preceding year, exports increased by nearly 25 per cent. in volume and by nearly 11 per cent. in value. The increase is to be attributed to large consignments of coal and coke to the Mysore Province, for the Kolar gold fields, and of grain and pulse to Bombay, Bengal, Hyderabad and Mysore.

The internal trade of the Presidency increased by nearly 2 per cent. in volume, and by about 10 per cent. in value, the increase occurring chiefly under the heads of grain and pulse, metals, cotton (raw), and spices.

The distribution of the total trade of the Presidency among the different blocks into which it is divided for purposes of registration is shown below :—

Internal blocks of the Presidency.	Imports.								
	1895–96.				1896–97.				Percentage of increase or decrease.
	Foreign.	Internal.	Total.		Foreign.	Internal.	Total.		
			Quantity.	Percentage.			Quantity.	Percentage.	
1	2	3	4	5	6	7	8	9	10
Sea-ports.	MDS.	MDS.	MDS.		MDS.	MDS.	MDS.		
Vizagapatam	6,711	1,453,006	1,459,717	3·5	80,695	2,099,591	2,180,286	5·4	+ 49·3
Cocanada	744,974	1,077,919	1,822,893	4·4	559,235	2,003,525	2,562,760	6·4	+ 40·6
Madras	1,434,904	6,633,269	8,068,173	19·5	1,320,794	6,061,523	7,382,317	18·3	— 8·5
Pondicherry	6,620	717,240	723,860	1·7	3,698	502,170	505,868	1·3	— 30·1
Cuddalore	2,562	656,312	658,874	1·6	549	716,409	716,958	1·8	+ 8·8
Negapatam	16,208	1,173,585	1,189,793	2·9	9,098	1,762,969	1,772,067	4·4	+ 49·0
Tuticorin	31,803	1,222,890	1,254,693	3·0	27,272	1,699,487	1,726,759	4·3	+ 37·6
Calicut	53,078	554,228	607,306	1·5	46,560	885,449	932,009	2·3	+ 53·5
Internal blocks.									
Northern Circars ..	420,663	1,239,661	1,660,324	4·0	524,903	432,612	957,515	2·4	— 42·3
Kistna and Gódávari ..	3,417,895	313,533	3,731,428	9·0	2,161,960	634,039	2,795,999	6·9	— 25·1
Deccan districts ..	1,133,599	1,466,323	2,599,922	6·3	1,016,736	1,808,800	2,825,536	7·0	+ 8·6
Chingleput and North Arcot	464,096	2,295,462	2,759,558	6·7	431,702	2,837,129	3,268,831	8·1	+ 18·5
South Arcot and Tanjore	107,349	3,731,313	3,838,662	9·3	56,403	4,050,741	4,107,144	10·2	+ 7·0
Salem, Coimbatore and Trichinopoly ..	888,519	4,531,424	5,419,943	13·0	773,1 3	3,737,123	4,510,251	11·2	— 16·8
Madura and Tinnevelly.	89,793	4,647,586	4,737,379	11·4	74,9 :	3,141,983	3,216,915	8·0	— 32·1
Malabar	123,993	807,372	931,365	2·2	92,171	701,048	793,219	2·0	— 14·8
(Block not known) ..	..	..	..	..	..	..	..	..	..
Total ..	8,942,767	32,521,123	41,463,890	100·0	7,179,836	33,074,598	40,254,434	100·0	— 2·9

Internal blocks of the Presidency.	Exports.								
	1895–96.				1896–97.				Percentage of increase or decrease.
	Foreign.	Internal.	Total.		Foreign.	Internal.	Total.		
			Quantity.	Percentage.			Quantity.	Percentage.	
	11	12	13	14	15	16	17	18	19
Sea-ports.	MDS.	MDS.	MDS.		MDS.	MDS.	MDS.		
Vizagapatam	953	897,485	898,438	2·3	157,336	124,191	281,527	0·7	— 68·7
Cocanada	185,771	317,789	503,560	1·3	317,576	649,289	966,865	2·3	+ 92·0
Madras	3,589,863	4,231,019	7,820,882	19·6	3,706,981	3,868,060	7,575,041	18·0	— 3·1
Pondicherry	1,936	44,897	46,833	0·1	1,965	48,548	50,513	0·1	+ 8·5
Cuddalore	1,643	854,586	856,229	2·1	1,718	1,223,421	1,225,139	2·9	+ 43·1
Negapatam	1,815	932,514	934,329	2·3	2,484	1,173,348	1,175,832	2·8	+ 25·8
Tuticorin	461	2,278,179	2,278,640	5·7	420	1,525,067	1,526,487	3·6	— 33·0
Calicut	60,031	717,707	777,738	1·9	26,141	624,593	650,734	1·5	— 16·3
Internal blocks.									
Northern Circars ..	40,513	2,309,406	2,349,919	5·9	728,052	3,961,666	4,689,718	11·1	+ 99·6
Kistna and Gódávari ..	888,193	1,188,944	2,077,137	5·2	824,454	1,040,468	1,864,922	4·4	— 10·2
Deccan districts ..	892,786	2,804,820	3,697,606	9·3	1,285,992	1,920,010	3,206,002	7·6	— 13·3
Chingleput and North Arcot	400,023	5,318,443	5,718,466	14·3	467,095	4,848,032	5,315,127	12·6	— 7·0
South Arcot and Tanjore	169,073	4,46,1874	4,630,947	11·6	243,681	5,003,737	5,247,418	12·5	+ 13·3
Salem, Coimbatore and Trichinopoly ..	763,491	3,048,014	3,811,505	9·7	940,315	3,534,963	4,475,278	10·6	+ 17·4
Madura and Tinnevelly.	4,707	1,757,739	1,762,446	4·4	12,252	2,005,426	2,017,678	4·8	+ 14·5
Malabar	328,327	1,357,707	1,686,034	4·3	401,610	1,522,779	1,924,389	4·5	+ 14·1
(Block not known) ..	..	..	..	..	1	..	1	..	..
Total ..	7,329,586	32,521,123	39,850,709	100·0	9,118,073	33,074,598	42,192,671	100·0	+ 5·9

APPENDIX I.

STATISTICS of mortality from diseases, criminal poisoning and attacks of snakes and wild beasts reported among cattle in the Madras Presidency during the year 1896–97.

Districts.	Total stock.	Deaths due to diseases.								Deaths due to			Total deaths from the causes named.	
		Rinderpest.	Diarrhœa and dysentery.	Anthrax.	Epizootic aphtha.	* Variola.	Other diseases.	Total. Number.	Total. Rate per mille.	Snake-bite.	Attacks of wild animals.	Criminal poisoning.	Number.	Rate per mille.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ganjám	384,781	887	741	405	222	2,192	752	5,199	14·2	63	178	..	5,440	14·9
Vizagapatam	159,670	234	194	405	198	33	601	1,665	9·8	56	69	..	1,689	10·6
Gódávari	888,018	3,830	1,254	6,768	489	531	2,341	14,213	16·1	193	348	2	14,756	16·6
Kistna	1,208,198	254	2,286	1,376	76	458	4,796	9,246	7·6	107	136	4	9,493	7·8
Kurnool	647,164	7,808	818	647	114	..	4,898	14,285	22·1	66	321	1	14,672	22·7
Bellary	604,522	8,587	993	836	171	20	2,751	13,368	22·1	21	109	..	13,488	22·3
Anantapur	643,719	7,162	746	303	73	181	3,887	12,352	19·2	7	187	..	12,546	19·5
Cuddapah	1,054,399	3,034	491	734	79	109	2,395	6,842	6·5	57	620	3	7,522	7·1
Nellore	722,870	3,149	610	1,029	23	169	2,832	7,812	10·8	37	37	1	7,887	10·9
Chingleput	608,709	4,192	6,366	4,436	231	94	3,682	19,001	31·2	453	25	..	19,479	32·0
South Arcot	1,189,172	386	716	960	65	2	623	2,752	2·3	121	153	..	3,026	2·6
North Arcot	918,806	1,917	473	1,628	92	.. 2	42	4,052	4·4	166	489	..	4,707	5·1
Salem	1,051,975	15	60	62	24	33	281	444	0·4	18	159	..	621	0·6
Coimbatore	1,155,002	50	110	308	65	1	2,065	2,631	2·3	52	922	6	3,611	3·1
Trichinopoly	602,468	30	86	261	21	16	466	865	1·4	29	79	..	973	1·6
Tanjore	961,577	337	330	1,361	172	107	797	3,003	3·1	111	8	2	3,124	3·3
Madura	623,911	100	255	613	157	..	942	2,179	3·5	109	249	..	2,537	4·1
Tinnevelly	474,036	117	113	272	20	..	214	737	1·6	87	32	..	856	1·8
Nilgiris	67,273	2	21	..	42	..	30	95	1·4	7	360	..	462	6·9
Malabar	936,986	93	466	51	108	167	167	885	0·9	141	2,072	..	3,098	3·2
South Canara	636,119	565	112	79	154	14	286	1,210	1·8	12	2,716	..	3,938	6·7
Total ..	16,582,375	42,749	17,241	21,429	2,596	3,963	34,748	122,726	7·9	1,911	9,269	19	133,925	8·6
In Zemindaris.														
Vizagapatam	Not available.	149	154	268	55	24	324	974	..	40	33	..	1,052	..
Kistna		..	..	..	..	..	..	..	..	2	..	..	2	..
Bellary		277	4	4	3	..	81	369	..	1	68	..	438	..
Nellore		37	1	6	..	..	16	60	..	1	..	..	61	..
North Arcot		747	33	191	52	..	28	1,061	..	69	126	..	1,246	..
Total ..	....	1,210	192	469	110	24	449	2,454	..	113	232	..	2,799	..
Grand Total ..	....	43,959	17,433	21,898	2,706	3,987	35,197	125,180	..	2,024	9,501	19	136,724	..

* Deaths noted under this head are, in most cases, suspected to be due to rinderpest.

APPENDIX II.

MONTHLY statistics of mortality among cattle in the Madras Presidency during the year 1896–97.

Months.	Deaths due to diseases.							Deaths due to			Total deaths from the causes named.
	Rinderpest.	Diarrhœa and dysentery.	Anthrax.	Epizootic aphtha.	Variola. *	Other diseases.	Total.	Snake-bite.	Attacks of wild animals.	Criminal poisoning.	
1	2	3	4	5	6	7	8	9	10	11	12
April 1896 ..	3,309	1,021	797	276	100	1,985	7,488	111	556	3	8,158
May ,, ..	3,592	693	1,291	215	44	2,535	8,370	127	620	..	9,117
June ,, ..	3,710	944	1,866	176	107	2,841	9,644	121	666	2	10,433
July ,, ..	2,795	932	1,868	201	166	3,965	9,927	182	893	1	11,003
August ,, ..	3,787	1,180	2,264	115	218	3,565	11,129	177	857	..	12,163
September ,, ..	2,939	1,518	2,004	126	183	2,352	9,152	211	887	2	10,252
October ,, ..	3,628	1,544	2,304	150	408	3,304	11,338	194	963	..	12,495
November ,, ..	4,103	2,270	2,677	174	798	2,896	12,918	229	1,017	..	13,550
December ,, ..	4,883	2,384	1,979	340	549	2,859	12,994	213	890	5	14,026
January 1897 ..	3,786	1,924	1,454	253	180	2,704	10,301	170	823	6	13,993
February ,, ..	3,752	1,493	1,229	397	297	2,447	9,615	142	638	..	11,081
March ,, ..								147	691	..	10,453
Total ..	43,959	17,433	21,898	2,706	3,987	35,197	125,180	2,024	9,501	19	136,724

* Deaths noted under this head are, in most cases, suspected to be due to rinderpest.

APPENDIX III.

STATISTICS of mortality from diseases criminal poisoning and attacks of snakes and wild beasts reported among horses and ponies in the Madras Presidency during the year 1896–97.

Districts.	Total stock.	Deaths due to diseases.						Deaths due to			Total deaths from the causes named.	
		Diarrhœa and dysentery.	Anthrax.	Other diseases.	Total. Number.	Total. Rate per mille.		Snake-bite.	Attacks of wild animals.	Criminal poisoning.	Total.	Rate per mille.
1	2	3	4	5	6	7		8	9	10	11	12
Ganjám	225	..	..	..	..	..		..	..	..	..	..
Vizagapatam	163	1	..	..	1	6·1		..	..	..	1	6·1
Gódávari	2,825	4	4	13	21	7·4		1	8	..	30	10·6
Kistna	3,921	..	..	23	23	5·9		1	3	..	27	6·9
Kurnool	3,008	..	..	9	9	2·9		..	22	..	31	10·3
Bellary	4,216	11	..	(a) 22	33	7·8		..	13	..	46	10·9
Anantapur	3,111	1	2	(b) 21	24	7·7		..	11	..	35	11·2
Cuddapah	1,784	(c) 1	2	3	6	3·4		..	2	..	8	4·5
Nellore	1,046	..	..	7	7	6·7		1	2	..	10	9·5
Chingleput	1,219	..	..	14	14	11·5		..	..	..	14	11·5
South Arcot	2,418	..	..	..	..	..		..	..	..	..	..
North Arcot	1,956	..	..	..	..	..		..	..	..	..	..
Salem	3,442	..	..	..	..	..		1	..	..	1	0·5
Coimbatore	3,460	1	1	4	6	1·7		1	..	..	1	0·3
Trichinopoly	769	..	..	10	10	13·0		15	..	..	21	6·1
Tanjore	1,354	1	..	1	2	1·5		..	..	..	10	13·0
Madura	2,266	..	..	4	4	1·7		1	..	..	2	1·5
Tinnevelly	508	..	..	..	..	..		14	..	..	19	8·4
The Nilgiris	1,389	..	..	..	..	..		..	..	..	..	..
Malabar	939	..	..	..	..	..		18	..	..	18	13·0
South Canara	222	1	..	(d) 1	1	1·0		..	..	..	1	1·0
Total ..	40,241	21	9	132	162	4·0		4	110	..	276	6·8
In Zemindaris.												
Vizagapatam	Not available.	..	..	..	..	..		..	..	..	..	..
Kistna		..	..	..	..	..		..	..	..	..	..
Bellary		..	..	..	..	..		..	3	..	3	..
Nellore		..	1	..	1	..		..	1	..	2	..
North Arcot		..	..	..	..	..		..	..	..	..	..
Total ..	..	..	1	..	1	..		..	4	..	5	..
Grand Total ..	..	21	10	132	163	..		4	114	..	281	..

(a) A case was wrongly reported by the Collector under epizootic aphtha in May 1896 and two other cases under rinderpest in March 1897.
(b) Two cases were wrongly reported by the Collector under variola—one in July 1896 and another in February 1897.
(c) A case was wrongly reported by the Collector under rinderpest in April 1896.
(d) A case was wrongly reported by the Collector under epizootic aphtha in May 1896.

39. *Road-traffic.*—Traffic was registered at 26 stations during 1895–96. The prescribed period of registration having been completed at the close of that year at nine of these stations, operations were discontinued at them, and nine new stations were opened during the year under report. Complete statistics are now available for 28 stations. Under the orders of Government, an additional station was opened at the Half-way House between Coonoor and Ootacamund on 7th February 1897. The following table shows the different stations at which registration was being conducted at the close of the year:—

Districts.	Registering stations.	Description of the road.	Routes for which traffic was registered.	Years in which previously taken up.	
1	2	3	4	5	
Ganjám	1. Russellkonda	Aska roads	1. Russellkonda to Baliabadra	1890–91 ..	1895–96
			2. Aska to Kalingiah	Do. ..	Do.
	2. Purushottapur	....	3. Aska to Purushottapur	Do. ..	Do.
			4. Aska to Humma	Do. ..	Do.
	3. Iyenjalli	....	5. Aska to Berhampur	Do. ..	Do.
	4. Varanasi (Baléru)	Between Battili, Parlákimedi and Calingapatam.	6. Battili to Parlákimedi	Do. ..	..
			7. Do. to Híramadalam	Do. ..	..
Vizagapatam	5. Korapatti	Road to Jeypur	8. Salur to Jeypur	1891–92 ..	..
			9. Do. to Nowrangpur	Do. ..	..
Kistna	6. Pidugurala	Hyderabad to Guntúr	10. Guntúr to Hyderabad	1890–91 ..	1895–96
			11. Ongole to do.	Do. ..	Do.
Nellore	7. Lingamgunta	Cumbum to Ongole	12. Do. to Cumbum	1891–92 ..	Do.
			13. Kanigiri to Cumbum	Do. ..	Do.
	8. Chinnarikatta	....	14. Ongole to Cumbum	Do. ..	Do.
			15. Do. to Kanigiri	Do. ..	Do.
	9. Sangam	Nellore to Badvel	16. Nellore to Kaligiri	Do. ..	Do.
			17. Do. to Badvel	Do. ..	Do.
Cuddapah	10. Badvel	Cuddapah to Cumbum	18. Badvel to Cumbum	1888–89 ..	Do.
			19. Do. to Puttur	Do. ..	Do.
			20. Do. to Sidhout	Do. ..	Do
			21. Do. to Nellore	Do. ..	Do.
Kurnool	11. 81st mile, Kurnool-Gooty road ..	Gooty to Kurnool	22. Dhone to Kurnool	..	..
South Arcot	12. Sattyatope	Panruti to Kumbakónam	23. Salem to Porto Novo	1891–92 ..	..
			24. Kumbakónam to Panruti	Do. ..	..
	13. Rayappanur	Cuddalore to Salem	25. Salem to Cuddalore	1890–91 ..	..
			26. Do. to Porto Novo	Do. ..	..
	14. Vriddhachalam	....	27. Do. to Cuddalore	Do. ..	..
	15. Veppur	Villupuram to Trichinopoly	28. Do. to do.	Do. ..	..
			29. Villupuram to Trichinopoly	Do. ..	..
Madura	16. Tirumangalam	Madura to Tinnevelly *via* Srívilliputtúr ..	30. Tinnevelly to Periyakulam	Do. ..	1895–96
			31. Do. to Solavandan	Do. ..	Do.
			32. Do. to Madura	Do. ..	Do.
			33. Madura to Periyakulam	Do. ..	Do.
	17. Sivaganga	Madura to Tondi	34. Mélúr to Sivaganga	1888–89 ..	..
	18. Ramnad (Mulakottalam)	Madura to Ramnad	35. Sivaganga to Ramnad	Do. ..	..
	Do. (Kanikarai centre) ..	....	36. Ramnad to Pámban	Do. ..	..
Tinnevelly	19. Sankaranayinárkóyil	Madura to Tinnevelly *vid* Srívilliputtúr ..	37. Madura to Tinnevelly	1890–91 ..	1895–96
			38. Kalugumalai to Sankaranayinárkóyil	Do. ..	Do.
	20. Rajapalayam	....	39. Madura to Sankaranayinárkóyil	Do. ..	Do.
			40. Do. to Tenkási	Do. ..	Do.
Coimbatore	21. Palladam	Trichinopoly to Palghat *vid* Karur Kangayam, Pollavaram and Coimbatore.	41. Malabar to Tiruppur	1892–93 ..	Do.
			42. Do. to Madura	Do. ..	Do.
			43. Do. to Trichinopoly	Do. ..	Do.
	22. Kangayam	....	44. Karúr to Coimbatore	Do. ..	Do
			45. Do. to Tiruppur	Do. ..	Do.
			46. Dhárápuram to Perundurai	Do. ..	Do.
			47. Do. to Uttukuli	Do. ..	Do.
			48. Do. to Kodimudi	Do. ..	Do.
			49. Kodimudi to Uttukuli	Do. ..	Do.
			50. Do. to Coimbatore	Do. ..	Do.
	23. Karúr	Karúr to Pollachi *vid* Dhárápuram and Udamalpet.	51. Karúr to Kangayam	Do. ..	Do.
			52. Do. to Dhárápuram	Do. ..	Do.
	24. Coimbatore	Trichinopoly to Palghat *vid* Karur, Kangayam, &c.	53. Coimbatore to Pollachi	Do. ..	Do.
			54. Do. to Palghat	Do ..	Do.
Malabar	25. Sultan Tod	Canal from South Canara to Cannanore ..	55. Balayapatam to Kavai	Do. ..	Do.
	26. Kuthaparamba	Road from Periya Ghát to the coast ..	56. Periya to Tellicherry	Do. ..	Do.
The Nilgiris	27. Half-way House *	Coonoor to Ootacamund	57. Coonoor to Ootacamund	..	..

* NOTE.—Registration commenced on 7th February 1897.

APPENDIX IV.

MONTHLY statistics of mortality from diseases criminal poisoning and attacks of snakes and wild beasts among horses and ponies in the Madras Presidency during the year ending 1896-97.

Months.	Number of deaths due to diseases.				Number of deaths due to			Total deaths from the causes named.
	Diarrhœa and dysentery.	Anthrax.	Other causes.	Total.	Snake-bite.	Attacks of wild animals.	Criminal poisoning.	
1	2	3	4	5	6	7	8	9
April 1896	2	..	4	6	1	4	..	11
May ,, ...	1	1	6	8	..	4	..	12
June ,, ...	7	..	17	24	..	10	..	34
July ,, ...	1	..	17	18	..	12	..	30
August ,, ...	..	4	22	26	..	6	..	32
September ,, ...	1	..	8	9	..	7	..	16
October ,, ...	1	1	6	8	..	13	..	21
November ,, ...	3	3	8	14	1	7	..	22
December ,, ...	1	1	3	5	..	12	..	17
January 1897	1	..	9	10	1	12	..	23
February ,, ...	..	..	24	24	1	12	..	37
March ,, ...	3	..	8	11	..	15	..	26
Total ..	21	10	132	163	4	114	..	281

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