

Report on the operations of the
Department of Land Records and

Agriculture

Madras Presidency

1890 - 91



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REPORT

ON THE

OPERATIONS OF THE DEPARTMENT OF LAND
RECORDS AND AGRICULTURE,

MADRAS PRESIDENCY,

FOR THE OFFICIAL YEAR

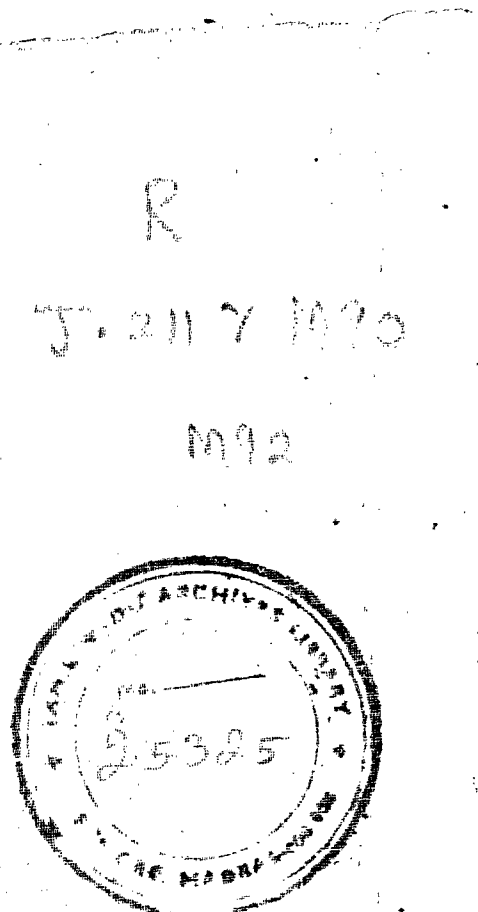
1890-91.

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 * கொள்ளப்பட்ட *
 * 4ம் மாதம் 87 வருடம் *
 * செப்பனிட முடிந்த *
 * 5ம் மாதம் 88 வருடம் *
 * ஆராய்ச்சி ததவியுள்ளன *
 * கையொப்பம் *

G.O., dated 25th January 1892, No. 86, Revenue :—

Read—the following Proceedings of the Board of Revenue (Revenue Settlement, Land Records and Agriculture), dated 3rd October 1891, No. 625 :—

MR. CLOGSTOUN.

Resolution—dated 3rd October 1891, No. 625.

The Board resolves to submit the enclosed report reviewing the operations of the Department of Land Records and Agriculture during the year 1890-91 for the information of Government.

2. The department remained in charge of Mr. Clogstoun throughout the year. That officer was deputed to attend the Agricultural Conference at Simla early in October 1890, when Dr. Voelcker's suggestions for the improvement of Indian agriculture by scientific means were discussed. The Assistant Director was on furlough for six months from June 1890. The Inspector of Cattle Diseases, Mr. Hazelton, after having been on privilege leave during April and May, reverted to military duty in July, and the appointment was held in abeyance during the remainder of the year, it having been decided by the Local Government that its continuance was not advisable at present. The appointment of Deputy Inspector of Cattle Diseases, held by Mr. Stunker, was made permanent during the year. That officer is solely employed in charge of the pony-breeding operations in Coimbatore and Salem under the direction of the Collectors of those districts. The Sub-Assistant Director of Agriculture, after his return from privilege leave, was employed under the Inspector of Cattle Diseases until July when he was called into the Central office to carry on part of the duties usually discharged by the Assistant Director. Subsequent to the latter officer's return, he was employed in the office on statistical work.

3. The orders of Government on the report of the Agricultural Committee appointed in September 1888 were issued in July 1890, but it was not possible to take any direct action on this during the year. Pending the return of the Assistant Director from Europe, the question of locating the five farm schools, sanctioned therein was held in abeyance and only reported on after the close of the year under reference. The sanction which was sought under these orders to the proposed abolition of the Cattle Disease Branch of the department was not received from the Government of India within the year, but it was found possible to reduce the subordinate staff somewhat by transfers to other departments. Towards the end of the year, the Stock Inspectors, who had been selected for charge of the veterinary hospitals ordered to be established in connection with the farm schools, were deputed to undergo a special course of study at the College of Agriculture, Saidápet. The revision of the curriculum of the last named institution, which was also ordered by the Government, formed matter for the deliberation of a committee of experts, whose work was completed shortly after the close of the year.

4. Employed as he was during the first two months of the year on secretarial and statistical work at Madras, absent on furlough for six months and during the remaining months of the year engaged as he was partly in inspecting and reporting on the facilities for starting farm schools at different centres and partly on his usual secretarial duties, the Board does not consider it necessary to enter into fuller detail as to the manner in which the Assistant Director was employed except to note that during the latter part of March he visited Nagpore, Cawnpore, Bhadgaon, Poona and Sholapur with a view to making himself acquainted with the working of the agricultural institutions existing at those places. For the most part, his duties were those of Secretary to the Director.

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5. The work of the department is dealt with in the report under the headings prescribed by the Government of India.

(A true Extract.)

(Signed) P. RAJARATNA MUDALIAR,
Secretary.

Order—dated 25th January 1892, No. 86, Revenue.

Miscellaneous.

The Board submits its annual report on the operations of the Department of Land Records and Agriculture for the year 1890-91.

2. *Land Records.*—Two important questions connected with the administration and working of this branch of the department that were under consideration during the year under review were disposed of after its close: one related to the appointment of a special officer to assist the Director in the supervision of the subordinate Land Revenue officials in connection with the maintenance of Land Records and Survey marks, and the other to the introduction of a more efficient and economical system of keeping these records and maps up to date. The sanction of the Secretary of State for the creation of the new appointment was communicated by the Government of India in July last and the proposal to entrust the karnams with the duty of correcting the maps on which the correct maintenance of village records up to date more or less depends was sanctioned in May. The nature of the measures adopted by the Board to ensure the speedy completion of the firka books, a work of much importance, should be reported. The statistical atlas should also be finished as soon as the results of the recent census are available.

3. *Agriculture.*—In accordance with the orders of Government, the Directors of Public Instruction and Agriculture submitted a joint report in May last (*i.e.*, two months after the close of the year) on the subject of the agricultural schools and farms that it is proposed to open at or near the head-quarter station of five representative districts in the Presidency. Various difficulties have arisen in deciding the terms upon which these institutions are to be started, and the report of the Directors is still under the consideration of Government. In the meantime but little has been or could be done by the department in the matter of promoting the stability and efficiency of agriculture in the Presidency, for the policy enunciated in G.O., No. 515, dated 4th July 1890, hinges to a great extent upon these agricultural farms and schools. The absence of the Assistant Director on furlough for six months of the year under review naturally put a stop to any progress in the way of agricultural experiments, and this, it is presumed, is the reason why the information called for by the Government of India in its Circular No. 12A-96-1, dated 11th June 1891, regarding the utilization of bone as manure, has not been furnished by the Director in his present report.

4. The Government of India has recently intimated that no officer is available to fill the post of Cattle Disease Inspector which it has been decided to retain and the office is therefore still vacant.

5. The statistics of cattle mortality from diseases are fully reviewed by the Board, but the figures showing deaths from natural decay are passed over with the remark that the "death-rate as reported amongst cattle from natural causes is so low as to render it certain that but a small portion of the deaths are reported, and having regard to the difficulty of securing accurate returns in this respect, it has been decided to give up the attempt." There is an apparent inconsistency between this passage and the Board's remark in the sentence immediately preceding it to the effect that the more complete registration of stock "scarcely keeps pace with improved reporting of mortality." It is unsatisfactory that the figures under this head are of such small value. His Excellency the Governor in Council is, however, of opinion that the attempt to secure fairly accurate returns should not be abandoned, and the Board should therefore reconsider its decision on the point.

(True Extract.)

(Signed) C. A. GALTON,
Secretary to Government.

REPORT OF THE DEPARTMENT OF LAND RECORDS AND AGRICULTURE.

I.—ORGANIZATION AND MAINTENANCE OF VILLAGE RECORDS.

1. The forms prescribed in the revised manuals of the village and taluk accounts were brought into use in fasli 1297 (1887-88), and the Collectors of districts were asked to submit special reports on the results of the working of these accounts after three years. These reports, which as yet have been received from only nine districts, show that the new accounts have been found to be a great improvement on the old and to be generally well suited for the purpose for which they are severally intended. Some modifications and improvements have been suggested by a few Collectors, which will be considered and disposed of as soon as the reports due from the other districts are received.

2. As usual the officers who conducted the annual settlements (*jamabandi*) carefully scrutinised the accounts and took the necessary steps to correct the defects and irregularities brought to notice. Their reports show that both village and taluk accounts are fairly well kept, though there is still room for improvement. The proper maintenance and upkeep of these accounts depends upon the degree of efficiency of the village establishments and the frequency and thoroughness of the supervision brought to bear on their work, and it is hoped that in both these matters considerable improvements will soon be effected. Reference was made in the previous report to a contemplated appointment of a special officer as a Personal Assistant to the Director to undertake the duty of inspecting the work of the subordinate Revenue establishments in the maintenance of land records and survey marks and plans. The sanction of the Secretary of State to the creation of this additional office provisionally for a period of five years was received after the close of the year.

3. The revision of the village establishments in the three Government taluks of Ganjam was sanctioned during the year. The proposals relating to Vizagapatam, Anantapur and Kurnool were under consideration. The revision of the staff of Revenue Inspectors, referred to in the previous year's report, was given effect to partially during the year, their number having been raised from 525 to 610. Their pay will eventually be in two grades of Rs. 35 and 40 *per mensem*; but the new rates will be allowed only to those men who have passed the requisite tests, *viz.*, the Revenue Test, Lower, and the Survey Test prescribed in G.O., dated 8th July 1885, No. 800. Of the 610 Revenue Inspectors now on the staff, 524 have passed the Survey Test, 104 having passed the test during the year under report.

4. During the year under report the question of the necessity for a re-survey of certain districts at the expiration of the Land Revenue settlements now current and of the agency by which the re-survey, if necessary, should be effected was under consideration.

The Superintendent of Revenue Survey, Mr. Cardozo, was deputed by Government in November 1890 to visit the Jhansi district in the North-Western Provinces with a view to ascertaining the details of the system of survey by village accountants (*patwaris*), which was in progress in that district and the utility of the work done. He was also asked to visit the Central Provinces where the various processes of survey were entrusted to the village establishment and to submit a full report embodying the results of his personal investigations in the two provinces. He accordingly made a tour in those provinces and submitted a report early in March 1891 with proposals for the re-demarcation and re-survey of the Trichinopoly district by the agency of the village karnams. He and the Commissioner of Revenue Settlement, to whom the report was referred for remarks, were of opinion that there was nothing in the circumstances of this Presidency or in the training and qualifications of its village officers to render unsuitable to this Presidency a system of survey which has been

reported to be eminently successful and economical in the North-Western and the Central Provinces. The proposals of the Superintendent of Survey for the re-survey of the Trichinopoly district through the agency of the village accountants were approved by Government in its order, dated 22nd May 1891, No. 446, Revenue; and it was directed that they should be given effect to at once. The work was commenced after the close of the year and is now making most satisfactory progress.

II.—THE ANALYSIS OF DISTRICTS.

5. No further steps were taken to carry out any detailed analyses, and it was decided at the Simla Conference that these should be left to be worked out gradually as information was collected. This will be greatly facilitated by the preparation of the village registers of statistics, to the compilation and checking of which close attention was paid during the year. The progress made in these respects is shown in the following table for each district in the Presidency, as also is that in the compilation of the firka (Revenue Inspectors' range) books:—

Districts.	In the district.	Number of villages						Remarks.
		For which village registers have been			For which firka books have been			
		Prepared up to fasli 1299.		Checked up to fasli 1299.	Prepared up to fasli 1299.		Checked up to fasli 1299.	
		Completely.	Partially.	Completely.	Partially.	Completely.	Partially.	
1. Ganjam	1,533	60	201	60	170	170	..	The work is generally backward in all taluks.
2. Vizagapatnam	201	..	1,248	2	420	371	348	The progress in the Ellore taluk is comparatively small.
3. Godavari	1,379	21	1,142	221	1,054	1,054	25	The firka books in Nellore, Rápur and Gódrár are in a backward state.
4. Kistna	1,367	291	816	3	366	366	..	Entries in firka books were checked up to fasli 1299 only in Nandyál and Márkápúr. In other taluks, a beginning has yet to be made.
5. Nellore	931	3	689	..	695	186	..	The progress in the preparation and checking of village registers is very poor in Kúdingi taluk, which contains the largest number of villages in the district. No entries were commenced for fasli 1299 in the firka books of Hadgalli; the progress in firka books is also poor in Adóni.
6. Kurnool	789	..	976	209	693	535	183	The checking of village registers is slow in Anantapur, Gooty and Dharmavaram taluks; the firka books of all taluks but Tadpatri, Dharmavaram, Penukonda and Madakasira are in a backward state.
7. Bellary	1,558	149	670	..	568	508	..	The entries relate to particulars for fasli 1300. No village registers were checked for the current fasli in Saidápet and the progress in Chingleput and Ponneri is poor. The entries in firka books for fasli 1299 have been commenced only in Tiruvallúr and Madurátakam taluks; in others nothing has been done.
8. Anantapur	978	..	1,339	..	1,189	1,053	..	The checking work of village registers is poor in Satyamangalam and Udamalpet; the progress with the firka books is poor in these taluks and in Kollegal and Pollakéhi; no checking of the entries in firka books has been commenced in any taluk. The checking of village registers is backward in Musari.
9. Guddipah	1,340	..	1,139	..	1,639	951	..	Information for the Madura taluk is not yet available. The progress in the checking of village registers of Periyakulam and Dindigul is poor; except in Tirumangalam taluk no commencement has yet been made in the compilation of firka books.
10. North Arcot	1,759	..	633	91	..	429	..	
11. Chingleput	1,785	778	1,770	778	323	323	..	
12. South Arcot	2,913	..	2,768	..	2,428	2,428	..	
13. Salem	2,895	..	1,094	38	843	..	92	
14. Coimbatore	1,503	..	1,952	..	1,253	1,253	..	
15. Trichinopoly	1,401	..	3,557	..	17 firkas.†	17 firkas.	..	
16. Tanjore	3,604	..	322	175	142 villages	142 villages	..	
17. Madura	896	..	1,034	70	and 4 firkas	and 4 firkas	..	
18. Tinnevely	1,139	..	36	..	in 2 taluks.	in 2 taluks.	..	
19. Nilgiris	36	..	36	..	36	36	..	

* Information as to the fasli year up to which the registers have been written up and checked has not been received.

† The total number of firkas of the district is 37.

6. The progress made is considerable, but, in the Director's opinion, the work should have been long since completed. The firka book and the subsidiary village registers give the Revenue Inspector a key to the state of his range, which is invaluable and which is not obtainable at present in any other form. These registers of course put similar information into the hands of all Revenue officers in authority, and their speedy preparation is a matter requiring the urgent attention of Collectors and Divisional officers. The Director will take special measures for bringing this work to a speedy completion as soon as the services of the Assistant Director of Land Records are obtained.

7. In order to amplify the information given by the statistics in the registers, instructions were issued during the year that the officers conducting the annual settlement should carefully examine the registers and make inquiries with the object of discovering any agricultural difficulties or any peculiarities in the economic condition of the people that may exist in any village or villages in each district, their inquiries being specially directed to—

(1) The character and condition of the irrigation sources of the villages, and whether any action regarding them is necessary.

(2) Whether there is much land lying unoccupied or uncultivated, and, if so, the cause.

(3) Whether the assessments are paid easily or only under coercion.

(4) Whether there is much tendency to extend cultivation or *vice versa*, and also whether relinquishment is frequent as a part of the agricultural system.

(5) Whether there is a large or small number of stock maintained, and whether changes in this respect are going on.

(6) Whether the outturn of crops is usually safe or always precarious.

(7) Particulars as to the public health and as to that of the stock.

Reports on the results of these inquiries have not yet been received, and will be noticed separately.

8. Some progress was made in the compilation of the statistical atlas alluded to in the last report, but nothing has been brought to completion, as it has been decided to await the results of the recent census before issuing the work.

III.—COLLECTION OF REVENUE AND RENTAL IN PRECARIOUS TRACTS.

9. The revision of the kistbandi or instalments of revenue carried out during 1889-90 has been attended with most satisfactory results throughout the Presidency. The instalments do not generally begin until the crops are ready for the market and the ryot is thus able to sell his produce to greater advantage and pay his revenue with greater readiness than before. During the year under report effect was given to the revised kistbandi (instalments of revenue) in Tanjore referred to in the previous year's report. The scheme for the remittance of Government revenue by means of postal money orders was experimentally tried in the districts of Chingleput, South Arcot, Tanjore, Madura and Tinnevely. The report called for by the Board on the results of the working of the scheme at the end of one year has been received as yet from only two districts.

IV.—MEASURES OF PROTECTION.

10. *Season and Rainfall.*—With the exception of the four Northern districts of the Presidency, and Bellary, Kurnool, Tanjore and Trichinopoly, the season during the year 1890-91 was generally very unfavorable, and was exceptionally so in portions of the nine districts noted on the margin. In these districts the rains in the north-east monsoon were, as a rule, late and unusually scanty; and where the deficiency was subsequently made up, the rainfall was too unseasonable to do more than partial good. Many of the irrigation sources in these districts received little or no supply and a large extent of wet lands was left uncultivated, while the crops that were sown, both irrigated and unirrigated, suffered seriously from a deficient supply of water, large areas of lands in Chingleput and North Arcot having yielded nothing.

Nellore.	Madura.
Cuddapah.	Tinnevely.
Chingleput.	Coimbatore.
North Arcot.	Malabar.
South Arcot.	

The areas affected in South Arcot and Madura were, however, comparatively small, and prospects, subsequently, so far improved in them that these two districts were left out of account when the question of relief measures for the affected tracts was considered during the last months of the year. Malabar too was left out of account, for, although there had been a considerable failure of the second rice-crop, the first crop had yielded fairly well. Excluding these three districts the area reported as affected by the season about the beginning of January 1891 was estimated at about 18,000 square miles, comprising the taluks of Nellore, south of the Pennér river, and the southern portion of the Venkatagiri zemindari; portions of the eastern and southern taluks of Cuddapah; the greater portion of the Kálahasti zemindari and the Wandiwash taluk in North Arcot; the northern taluks of Chingleput and portions of three others; seven taluks of Tinnevely, including four which were only partially affected; and portions of the Coimbatore district. The aggregate population of this tract was over four million souls. In the third week of January, however, some unexpected rain fell in parts of the affected districts, and this was followed up by more rain in February and March which materially improved prospects, especially in Nellore, Madura, South Arcot and Tinnevely, so that towards the end of the official year there seemed no ground for any serious anxiety except in portions of

	SQ. MLS.
* Chingleput	2,300
North Arcot	1,300
Tinnevely	3,700
Coimbatore	300
Total	7,600

Chingleput, North Arcot, three taluks of Tinnevely, and the Polláchi taluk of Coimbatore, comprising an area of 7,600 square miles, out of a total area of these districts of nearly 23,300 square miles. These tracts began in January and February to exhibit unmistakable signs of distress and it was found necessary to

provide relief work. The ordinary public works, however, supplemented by a few large additional works opened by the Public Works Department, coupled with increased expenditure on repairs to minor irrigation works and a liberal grant of loans under the Land Improvement Act, enabled the ryots and the laboring classes to tide over the distress during the closing months of the year without much difficulty. At the end of March about 100 minor irrigation works and 15 ordinary Public Works Department works were in progress in the five affected taluks of Chingleput, which gave employment to about 5,300 coolies. In the Wandiwash taluk and in the Kálahasti zemindari of the North Arcot district, about 2,100 people were employed on 31 minor irrigation works and nine Public Works Department works, while in Tinnevely the numbers employed on 35 minor irrigation works started in the last week of March amounted to about 1,000. In the Polláchi taluk in Coimbatore, some 600 coolies were employed on a major irrigation work which was started in the worst tract. Kitchens for the distribution of cooked food to destitute women and children unable to work were ordered to be started in the affected tracts in the North Arcot district after a personal visit paid by His Excellency the Governor to the Wandiwash taluk on the 16th March. By the 31st March, three kitchens had been opened in the Wandiwash taluk and two in the Maderpák division of the Kálahasti zemindari, in which some 300 people, mostly children, were being fed daily. In the Chingleput district it had not been found necessary up to the end of March to introduce this form of relief, though in one village six persons, who were very old and showed signs of emaciation, were admitted to grain-doles as a special case. In the nine affected districts referred to above, large remissions had to be granted to the amount of 13.1 lakhs of rupees for loss of crops. But for the unexpected rains which fell between January and March, the remissions would, as estimated by local officers, have been higher by at least three lakhs.

11. *Communications.*—The portion of the Bellary-Kistná State Railway from Cumbum to Nandyál was completed during the year and the whole line from Guntakal to Bezváda was thus made available for traffic. A portion of the Villupuram-Dharmavaram Railway in South Arcot was also opened for traffic on 17th November 1890, and another portion, continuous with the above and connecting it with the Nellore branch, on 18th March 1891. The work on the East Coast Railway was vigorously proceeded with in the Northern districts, and the line from Tiruválúr to Mutupet in the Tanjore district was under construction. The survey of a line from Nellore to Bezváda, a

distance of 163½ miles, with an 18 miles branch to Guntūr, and that of another line, 86 miles in length from Madras to Gúdur, a station on the Nellore branch of the Villupuram-Guntakal State Railway, was also completed during the year.

12. *Irrigation*.—The Rushikulya works in Ganjam and the Periyár project in Madura were in progress during the year. The amount expended on the former during 1890-91 amounted to Rs. 4,54,570 and that on the latter to Rs. 10,60,170, raising the total expenditure to date to Rs. 18,34,270 and Rs. 26,66,102, respectively. A large sum of Rs. 4,70,979 was also spent during the year on the improvement and extension of the Kistna Delta system. The sanction of the Secretary of State was received for estimates amounting to Rs. 8,71,000 for improving and extending the Kalingaroyen channel in the Coimbatore district.

Minor Irrigation Works.—The original sanctioned allotment for the repair of the minor irrigation works was Rs. 4,00,000. The sum was subsequently raised to Rs. 4,60,000 to provide work for laborers in the affected tracts of North Arcot, Chingleput and Tinnevely. The expenditure during the year amounted to Rupees 4,12,591, which is 89·70 per cent. of the allotment. This expenditure was the highest recorded since the transfer of these works to the control of the Revenue Department in 1883-84.

13. *Advances to Agriculturists*.—Proposals for the transfer of the control of the advances under the Land Improvement and the Agriculturists' Loans Acts and of the minor irrigation works from the Land Revenue to the Settlement branch of the Board of Revenue were under consideration during the year and have since been sanctioned. The following table shows the amounts advanced under the two Acts during each of the past five years:—

Year.	Land Improvement Loans Act.		Agriculturists' Loans Act.	
	Budget allotment.	Actual loans.	Budget allotment.	Actual loans.
	RS.	RS.	RS.	RS.
1886-87	2,00,000	8,057	1,00,000	19,100
1887-88	2,00,000	77,507	1,00,000	49,034
1888-89	2,00,000	1,39,622	1,00,000	36,772
1889-90	1,50,000	1,58,690	80,000	44,960
1890-91	2,41,900	2,27,942	58,100	43,502

V.—AGRICULTURAL EXPERIMENTS.

14. *Farms*.—The only Government institution of this character in the Presidency is the farm attached to the College of Agriculture, Saidápet. The Director is in future to be consulted in all matters regarding the management of the institution, and the report thereon has been reviewed by him in a separate paper. The farm appears to be managed chiefly as a dairy farm, and so far was fairly successful during the year under report. The season was unfavorable and the yield of the field crops was not good. The cost of the farm could not be accurately determined, but it nearly paid its current expenses. So far, no special arrangements have been made as to the exact position the Director should hold with reference to the management of the farm or college, but the matter is under consideration.

15. *Agricultural College*.—The work of this institution is separately reviewed in the Educational Department, and it will suffice to note here that the junior department has been abolished since the close of the year, and that at the recent examinations the results were on the whole more satisfactory than in the previous year. The curriculum of the college formed matter for the deliberations of a committee of experts during the year, but, as yet, no action has been taken on their report.

16. *Farm-schools*.—The only step taken towards carrying out the orders of Government in this matter has been the preparation of a preliminary report on the facilities existing at several centres for starting such schools. Shortly before the end of the year, the Government of India objected to the system proposed by the Madras Government for adoption in this matter, on the ground that this department would lose control over the farms attached and that the institutions would become too

purely educational. The subject was then referred for joint report by the Directors of this Department and of Public Instruction who submitted a report in May last; nothing further has yet been decided. In the meanwhile, three selected Agricultural Inspectors have been sent to Kumbakonam, Coimbatore and Bellary to make themselves fully acquainted with local practices, in view to the probability of their being called upon to take charge of farms at these places which it has been proposed to start in connection with existing schools.

17. *Tobacco Experiments*.—The experiments conducted by Mr. Caine near Dindigul on the growth and curing of tobacco were brought to an end during the year, and Mr. Caine's connection with the department ceased. As the results were fully noticed in the report for last year, it is unnecessary to allude to them further here.

18. *Sugar*.—The discussion alluded to in paragraph 38 of the last report was continued during the year, and elicited a further valuable communication on the subject from Mr. F. M. G. Gill, in which he suggested the collection of information in detail regarding the canes grown, the methods in which they are treated, and analyses of the canes at different stages of growth; but, though this would no doubt be useful, it could not be undertaken on account of the cost of the analytical work it would require, and without which the remainder of the work would not be very valuable.

19. *Barley*.—During the year under report, prizes were again awarded for samples of barley grown on the Nilgiris. To secure proper competition samples were only allowed to be entered when produced in plots of half an acre or more, and the samples for exhibition were obtained direct from the threshing floors. There was a decline in the number of exhibits partly from the enforcement of the latter condition and partly owing to an unfavorable season, but, though the season was unfavorable, the samples were superior, for malting purposes, to those of the previous year. All the samples were raised from seed of English origin.

20. *Potatoes*.—In May 1890, the Government having regard to the deterioration of the quality of the potatoes grown on the Nilgiris, resolved to obtain 50 bushels of seed potatoes from England. The supply, which was obtained through the Secretary of State, only arrived in Madras in December 1890—far too late for immediate use. It was forwarded to the Nilgiris with instructions that the seed should be sold to growers at 10 lb. per rupee. The results will be alluded to next year.

21. *Eucalyptus leaves*.—Acting on a remark in the report of the Horticultural Gardens, Lucknow, that these leaves were a useful disencrustator for locomotive boilers, their use was suggested to the South Indian Railway and Madras Railway authorities, with the result that supplies were obtained for both for experimental use on the railways. The results obtained have not been communicated as yet.

22. *Societies*.—The Madras Agri-Horticultural Society, of the managing committee of which the Director of the Department is an *ex-officio* member, continued its work on the usual lines during the year. It received a Government grant of Rs. 4,000, and a private income from subscriptions of Rs. 3,093. Its total receipts amounted to Rs. 16,647. Its expenditure occurred chiefly under establishment, Rs. 5,062; seeds and plants, Rs. 3,260; and improvement of gardens, Rs. 3,463; and amounted in all to Rs. 17,316. By the sale of seeds and plants it realised Rs. 5,226. There is nothing in the report of the society to show that any work of agricultural interest was done during the year.

23. *Exhibitions*.—No shows of any sort were held during the year, nor was it considered advisable, in reference to the unfavorable state of the season, to make any arrangements for carrying out the orders of Government as to the initiation of special pony and cattle shows of a simple nature in any of the chief breeding districts.

24. *Agricultural implements*.—There is nothing special to report under this head this year. The iron sugar mills continue to spread over the country, and there is ample evidence that the heavy iron cotton-soil ploughs continue in favour in the Bellary district, where the ryots often hire them at the rate of Rs. 12 per mensem for breaking up foul or waste land with teams of 4 or 5 yoke of oxen.

Endeavours are being made to introduce the bamboo seed-drill of the Ceded Districts into Ganjam, but so far the Collector has not had much success for want of really competent workmen to manage the instrument. Arrangements are being made to supply this want.

VI.—CATTLE BREEDING AND VETERINARY ESTABLISHMENTS.

25. *Pasturage and Fodder.*—Although the administration of forests does not fall to this department, the subject is one of the greatest agricultural importance and the orders issued during the year regarding the provision of pasturage, fodder, fuel and small timber for the agricultural population may be briefly referred to. Up to the passing of these orders, the idea generally prevailed that as soon as a forest was reserved, cattle and men were to be excluded, and it is to be worked for the profit of the Government rather than for the benefit of the people. The Government has now emphatically declared that the chief object of the reserved forests throughout the greater part of the country is the provision of pasture, small timber, fuel and leaves for manure or litter, and that they are to be worked in order to meet the wants of the villagers in these respects and are not to be converted into close reserves for the growth of large timber. Speaking generally, the forests in the plains are to be worked as fuel and fodder reserves and those on the hills as high forests, portions of the former being thrown open for public use on definitely settled plans suited to the circumstances of each locality.

The idea of forming village forests was given up and the taluk was ordered to be taken up as the unit for purposes of fuel and fodder reserves. If, in any case, the area already taken up is not found sufficient to furnish the estimated requirements in firewood, leaves and small timber, and to afford grazing for all cattle necessary for agricultural or domestic purposes, more land is to be brought under management and the natural growth supplemented by plantations created for the purpose of fuel supply.

It was also decided that cattle maintained for agricultural and domestic purposes must have the first claim on Government reserves, the number of such cattle which a ryot should be allowed to graze at favorable rates being regulated with reference to the average area cultivated by a pair of tilling cattle in each taluk. The maximum scale of fees leviable on each pair of bullocks and the milch-cow or she-buffaloe thus allowed for an average holding has been fixed at half the maximum rates prescribed in the case of reserved lands and reserved forests, but in exceptional cases, the Collector may reduce the fees or remit them altogether. Pasturage for the surplus animals is to be provided for in unoccupied and unreserved land if there is no room for them in the fodder reserves, the requirements of large cattle breeders being usually met in the large grazing grounds of hill tracts.

On all unoccupied unreserved land, the grazing of cattle, the cutting of grass, the collection of dry wood, thorns, leaves of trees and shrubs that are not reserved, and the felling of trees other than reserved trees, will continue to be permitted free of charge, provided that the grass, wood, leaves, &c., are required for agricultural or domestic purposes and not for sale or barter.

26. The general failure of the grasses in the southern portions of the Eastern Ghâts during the current year has been pointedly brought to notice by Mr. LeFanu, Collector of North Arcot, who writes as follows from Kálahasti in July last: "Cattle are dying. I have seen them dead in the fields and others too weak to rise; this too in a richly wooded country where grazing is free, a fact which gives ground for reflection in reference to our forest reserves. It is a fact that these great forests of the Eastern Ghâts contain no grass, and as cattle are not 'browsers,' they are practically useless as grazing reserves." The question has been referred by Government to the Forest Department for remarks. Any steps which can be taken for promoting the growth of hardy grasses in forest reserves will be of incalculable benefit to the agricultural classes in times of drought. The losses of cattle during the current year in the distressed tracts of the Presidency have been appalling notwithstanding the opening of all forest reserves.

27. *Pony Breeding.*—During the year the operations were brought to an end on the Nilgiris, and the stallion previously stationed there was transferred to Coimbatore. One stallion in the latter district was condemned and sold. One new stallion was purchased and sent to Salem. At the end of the year there were six stallions stationed in Coimbatore and five in Salem.

During the year 509 mares were covered by the stallions—190 in Salem, 308 in Coimbatore and 11 in Nilgiris. In Salem, the average number of mares per stallion which worked the whole season was 56 and in Coimbatore 63. This was much more satisfactory than the work done in the previous year.

The inquiries made as to the results of the coverings effected during 1889 elicited information regarding only 289 mares in Coimbatore and Salem. The results show that only 22 per cent. of the mares in Coimbatore and 38 per cent. in Salem, or, on the whole, 26 per cent. foaled. These results are considerably better than those of the preceding year and about the same as those obtained in 1887, but they are considerably worse than those obtained in Bengal and Bombay, whilst there is no reason to believe that the accuracy of the reports differs greatly as to either Presidency.

Castration operations were continued in both districts during the year. The number of castrations effected in each district since the commencement of the operations is as follows:—

	1886-87.	1887-88.	1888-89.	1889-90.	1890-91.
Salem	68	258	121	134	156
Coimbatore	16	67	107	95	45

In Salem, two salustries and one pupil were engaged on the work, and in Coimbatore, one salustri under Mr. Shunker's supervision. The number of castrations in Salem is naturally smaller than it was in the early days of the experiment, but is still considerable. In Coimbatore, the numbers have always been small, and during the past year, the work has not been satisfactory.

The whole of the operations are being supervised by Mr. Shunker whose continued employment was sanctioned permanently during the year. The cost amounted to Rs. 5,082 including Rs. 600 paid for the new stallion, but excluding Mr. Shunker's pay and allowances.

28. A proposal was made towards the end of the year by a planter on the Nilgiris whereby he should carry on mule breeding operations with Government assistance, but the negotiations entered into in the matter were not finally concluded during the year under report.

29. *Cattle disease.*—Mr. Hazelton, who was in charge of the operations of the department in this respect, proceeded on two months' privilege leave early in April and shortly after his return reverted to military duty. The appointment was not filled up, as the Government determined in July 1890 to suspend all direct action in attempting to combat disease amongst live stock. It was at the same time proposed that the veterinary officer thus set free should become Veterinary Vice-Principal of the College of Agriculture, and should also supervise five small veterinary hospitals which it was proposed to attach to the farm-schools alluded to above. Towards the end of the year, however, on objection to this arrangement being taken by the Government of India, the Madras Government consented to maintain the office of Inspector of Cattle Diseases, but on the condition that the officer filling it should be engaged on *investigation only*. It has not yet been filled up, nor has it been decided what the duties of the post will be in future.

The Sub-Assistant Director of Agriculture worked under the orders of the Inspector of Cattle Diseases during June and July and visited the Nellore district to examine the work of the Stock Inspectors employed there at the time. During the remainder of the year he was employed in the Board's office at Madras. No settlement has as yet been arrived at regarding the manner in which he is to be employed in the future.

30. At the commencement of the year, 18 Stock Inspectors were employed under the department, allotted one each to different districts. In its orders of July 1890, the Government resolved that, except the selected few who would be required for charge of the proposed veterinary hospitals, the staff should be broken up and notices were issued accordingly. The carrying out of this decision was, however, held in abeyance pending the result of a necessary reference to the Government of India regarding the proposed abolition of the post of Inspector of Cattle Diseases. The result of that reference has been noted above; meanwhile four Inspectors left the department, having obtained appointments in other branches of the public service. At the end of the year fourteen Inspectors remained on the strength of the department. Of these, six were selected in January last to undergo a special course of training at Saidápet to prepare them for their future duties when put in charge of the veterinary

Hospitals to be started in connection with the farm-schools. In March, three more were placed on special duty in connection with the operations for the relief of distress.

The cattle disease preventive work done by the staff is noted in full in the appendices to the report of the Inspector of Cattle Diseases which is attached. The total cost of this branch of the department was Rs. 29,062, including Rs. 7,352, being the pay and allowances of the Deputy Inspector of Cattle Diseases in charge of pony-breeding operations and of the Sub-Assistant Director of Agriculture.

31. Act II of 1866 has been withdrawn from operation in all districts, and the Government has decided not to put it in force again for the present except in connection with the regulation of large cattle markets and fairs. The provisions of the Act were utilised during the year in connection with the Chittrai festival at Madura and the Subramania cattle fair in South Canara. The arrangements for working it at these fairs were made by the Stock Inspectors attached at that time to those districts.

32. The following is an abstract of the mortality recorded amongst all classes of stock in the Presidency during the past four years:—

Causes of death.	Cattle.			
	1887-88.	1888-89.	1889-90.	1890-91.
Diseases—				
Rinderpest	116,558	95,795	38,252	21,970
Diarrhoea and dysentery	3,966	47,946	30,368	27,907
Total	120,524	143,741	68,620	49,877
Others—				
Anthrax	34,432	19,893	22,502	18,586
Foot-and-mouth diseases	2,793	5,260	7,811	6,064
Varicella	733	2,841	3,290	2,214
All others	15,771	24,529	26,243	25,356
Total from diseases	174,223	196,264	128,466	102,097
Others—				
Natural decay	33,535	129,471	163,848	197,736
Accidents	46,857	9,009	22,114	9,629
Snake-bites	1,824	2,587	2,895	2,698
Wild animals	7,591	9,520	10,517	10,533
Criminal poisoning	44	85	15	24
Total from other causes	89,851	150,672	199,389	220,620
Grand Total	264,074	346,936	327,855	322,717

Causes of death.	Sheep and Goats.				Horses and Ponies.			
	1887-88.	1888-89.	1889-90.	1890-91.	1887-88.	1888-89.	1889-90.	1890-91.
Diseases—								
Rinderpest	5,130	4,075	4,492	2,172	..	..	..	..
Diarrhoea and dysentery	959	4,363	5,940	4,741	2	5	6	15
Total	6,139	8,438	9,532	6,913	2	5	6	15
Others—								
Anthrax	1,816	3,253	5,664	5,211	3	5	9	17
Foot-and-mouth diseases	211	989	2,836	920	..	..	..	..
Varicella	3,373	7,387	7,962	8,156	..	1	4	8
All others	5,430	5,212	13,615	8,771	34	88	134	159
Total from diseases	16,069	29,270	39,569	29,977	39	99	153	199
Others—								
Natural decay	5,851	30,174	40,699	47,806	11	256	484	571
Accidents	20,106	11,655	11,815	4,278	69	63	66	64
Snake-bites	78	241	329	192	2	11	10	3
Wild animals	3,609	7,361	9,050	7,921	29	96	130	144
Criminal poisoning	..	23	2	..	..	..	..	..
Total from other causes	29,644	49,387	61,895	69,997	101	431	620	785
Grand Total	45,713	78,657	101,464	99,974	140	530	813	984

Considering the circumstances of the country and with the existing stock, an annual total mortality of one and-a-half million head of cattle would not be surprising,

so that the proportional loss from disease is not at all a serious one, though in some individual cases the loss of his cattle may mean ruin to the individual.

33. The rate of reported mortality per mille for the last four years has been as follows:—

Description of stock.	From disease.				From other causes.				From all causes.			
	1887-88.	1888-89.	1889-90.	1890-91.	1887-88.	1888-89.	1889-90.	1890-91.	1887-88.	1888-89.	1889-90.	1890-91.
Horned cattle	1.6	14.0	9.3	6.8	21.3	11.3	14.6	14.7	22.8	25.3	23.9	21.4
Sheep and goats	1.7	2.6	3.5	2.4	3.2	4.3	5.4	4.8	4.9	6.0	8.9	7.1
Horses and ponies	1.1	2.5	3.3	4.6	4.0	10.7	17.5	18.1	5.1	13.2	21.3	22.7

These figures are based on the number of stock reported to exist in the Presidency, which has been taken in round numbers as follows:—

Years.	Horned cattle.	Sheep and goats.	Horses and ponies.
1887-88	11,522,000	9,574,000	35,000
1888-89 and 1889-90 ..	13,760,000	11,400,000	19,250
1890-91	15,062,000	12,646,700	43,400

The increase in the number of stock is no doubt largely due to more complete registration, but this probably scarcely keeps pace with improved reporting of mortality. The death-rate as reported amongst cattle from natural causes is so low as to render it certain that but a small portion of the deaths are reported; and having regard to the difficulty of securing accurate returns in this respect, it has been decided to give up the attempt. The mortality reported amongst sheep and goats does not include animals slaughtered for food, and as to neither description of stock are any returns included for the City of Madras. An examination of the detailed tables given in the appendix shows that the registration is particularly bad in the following districts which have shown the following rates of mortality per mille amongst cattle during the past three years:—

Districts.	1888-89.			1889-90.			1890-91.		
	Disease.	Other causes.	All causes.	Disease.	Other causes.	All causes.	Disease.	Other causes.	All causes.
Ganjam	7.6	4.0	11.6	33	60	93	21	3	24
Vizagapatam	10.8	7.4	18.2	35	15	50	14	8	22
Godavari	12.8	6.8	19.6	2	10	12	5	12	17
Nellore	6.6	6.8	13.4	10	9	19	7	11	18
Cuddapah	14.4	5.9	20.3	9	8	17	7	9	16
South Arcot	19.7	6.6	26.3	10	8	18	9	11	20
Salem	3.9	1.9	5.8	1	2	3	1	3	4
Ootimbatore	3.9	4.6	8.5	5	7	12	5	10	15

The higher figures of mortality from causes other than disease reported from Ganjam in 1889-90 were due to a large number of accidental deaths due to exposure to a cyclone—a cause which probably operated in Vizagapatam also.

34. The decrease in the mortality amongst cattle from disease, which, as was pointed out in paragraph 59 of the last annual report, had been going on steadily during the later months of the preceding year, continued until June 1890, when the low figure of 6,756 only was recorded. From then to October, however, the usual gradual increase in the death-rate occurred; but, it may be suggested on account perhaps of the failure of the north-east monsoon rains after that date, it again fell away till January, after which there was a slight increase during the later months of the year. The variations are shown in diagram No. 1 in the appendix. Compared with the three previous years, the losses were small and only in one month (October) did they

exceed 10,000, whilst for eight months they did not reach 9,000. The total losses were only 102,000 against an average of 166,000 in the three previous years. Whilst this large actual decrease in the number of deaths reported has occurred, there is reason to believe that the accuracy of registration is improving.

The mortality from rinderpest, including under that heading those attributed to diarrhoea and dysentery as well, showed a similar decrease, and, compared with the enormous losses of the two years 1887-88 and 1888-89 was trifling throughout the year, as it never reached 4,600 in any one month and sunk as low as 3,234 in June 1890, the nearest approach to which in the three previous years having been 3,988 in June 1887. The proportion of the total number of deaths from disease which were attributed to this disease during the year under report was under 49 per cent. against 71 per cent. during the two disastrous years alluded to. This disease is, however, still by far the most destructive one from which the stock of the country suffers, and even at the comparatively low rate of the last year, the losses are sufficiently great to justify considerable efforts to put a stop to them. In round numbers 50,000 head of cattle perished from this disease in Government villages, and they would be worth at least $7\frac{1}{2}$ lakhs of rupees.

The losses from other diseases were also less than in the previous year, although those attributed to "foot-and-mouth" disease continued large. As this disease is seldom fatal, the reported losses, 6,064 head, must represent a very large amount of suffering and deterioration of the stock in the hands of the ryot. Anthrax, though less fatal than in the three previous years, carried off 18,586 head, whilst variola is said to have caused 2,214 deaths and diseases not specified by name 25,356. The last figure is rather lower than that of the previous year, but a good deal above the average for the two earlier years for which statistics are available.

35. Taking all sorts of disease together, the parts of the Presidency which suffered most during the year were the Southern, excepting Salem; Tinnevely, Tanjore and Madura coming off worst, whilst in the Northern district Kurnool alone showed any considerable number of deaths. The districts which suffered most in proportion to the stock maintained are Ganjam, 21 per mille; Madura, 18; Chingleput, 16; Vizagapatam, 14; Kurnool, 14; Tanjore, 13; Nilgiris, 12; and Trichinopoly 10. Except in Ganjam, Vizagapatam and Kurnool, the greater part of this mortality was due to rinderpest.

The districts which reported the largest losses from rinderpest (including diarrhoea and dysentery) are Tanjore, Madura and South Arcot, in each of which the loss exceeded 6,000; Trichinopoly nearly that number; Chingleput and Coimbatore about 3,500 each; and North Arcot, Cuddapah and Kurnool from 2,500 to 2,800 deaths. Several districts almost escaped loss from this cause; this being specially noticeable in the West Coast districts, Tinnevely, Salem, Anantapur, Bellary, Nellore and the Northern Circars. Altogether the losses were very much less widespread than in the preceding years as will be seen by reference to the second diagram in the appendix. It is peculiar that Salem and Nellore should have escaped loss to so great an extent, but, as already noted, the reporting from these districts has not been satisfactory. The comparatively small number of deaths reported from the two northern districts is attributable to the comparatively small area of the Government villages in them.

The districts which have usually reported the largest number of deaths from diseases other than rinderpest are Kurnool and North Arcot, over 7,000 each; Chingleput over 5,000, and Kistna about 4,800 on the average for three years; whilst Cuddapah, Nellore, South Arcot, Ganjam have all reported upwards of 2,500 deaths from these causes. During the past year Kurnool still remains first with 6,536 such deaths, but Madura shows 5,474 and Cuddapah 4,110, whilst Ganjam, North Arcot, Chingleput, South Arcot, Tanjore and Coimbatore all show upwards of 3,000.

In Ganjam, foot-and-mouth disease caused a large and anthrax a considerable number of deaths; in Vizagapatam, variola, anthrax and unspecified diseases nearly equal numbers, and in Kurnool unspecified diseases accounted for the bulk of the deaths. Anthrax also caused a considerable number of deaths in South Arcot, Chingleput and Cuddapah. Foot-and-mouth disease carried off a considerable number in Trichinopoly, Tanjore and Madura, whilst of the deaths attributed to variola, Kistna, Cuddapah, Madura, Coimbatore and Salem accounted for the bulk of the total appearing under that heading.

36. Snake-bites are said to have caused 2,698 deaths amongst cattle during the year, which is 197 less than in the preceding and 263 more than the average of the three previous years. The greatest number of deaths attributed to this cause were reported from Chingleput (454) and North Arcot (307), South Arcot (243) and Kistna (222). Wild animals caused 10,533 deaths or 1,324 more than the average of the three previous years and 16 more than were reported in 1889-90. Madras (3,199) and South Canara (2,322) account for by far the greatest number of deaths caused in this way. Though wild beasts are reported to have caused some deaths in all districts, in Chingleput, Tanjore (11), Trichinopoly and Tinnevely they destroyed less than 50 animals, in Vizagapatam 57 and Ganjam 38, whilst in South Arcot, Nellore, Anantapur and Bellary, the number did not exceed 162 in any case. These figures do not include deaths caused by wild animals in zemindaris, &c., but still the numbers reported in the case of almost all districts exceed those shown in the returns submitted by the Police.

37. The deaths of cattle attributed to criminal poisoning numbered only 24, against an average of 48 for the three previous years. The information received regarding these cases is as follows:—Kistna, 2 cases, in both of which the suspected person was discharged for want of evidence. Anantapur, 3 cases, in two of which the culprits were not traced, and in the third it is not yet known whether the Chemical Examiner has detected poison in the viscera which were forwarded to him. Coimbatore, 10 cases, two of which are still under inquiry; in two the accused were acquitted; in three, the accused were discharged for want of evidence; and in the other three, two of the offenders were sentenced to 2 months and one to 4 months' rigorous imprisonment, respectively. In Trichinopoly, one case, it is reported that as the animal poisoned was valued at less than Rs. 7, the offence was non-cognizable. In the Tanjore case, the accused was discharged. In Madura, 4 cases, in one case the culprit was not traced, and the accused in three others were discharged. In Tinnevely, 3 cases, the culprits concerned were sentenced to 1 month's rigorous imprisonment each.

38. The mortality amongst sheep and goats from disease was nearly 10,000 less than in the previous year, and as usual the most fatal disease was variola or sheep-pox. This disease was particularly destructive in Anantapur, whilst it carried off considerable numbers also in the adjoining districts of Cuddapah and Bellary. In the last-named district, anthrax is also reported to have caused a large number of deaths, as did diarrhoea and dysentery in Cuddapah. Besides these districts, Madura alone reported a very large mortality amongst this description of stock, chiefly from rinderpest, diarrhoea and dysentery and sheep-pox. Wild animals appear to have been most destructive of this stock in Kistna, Kurnool, Anantapur, Cuddapah, Salem and Coimbatore. The total number killed in the Presidency amounted to 7,921. The losses from snake-bites were everywhere small, only numbering 192 reported cases. No cases of criminal poisoning of sheep and goats were reported during the year.

39. The number of deaths of horses and ponies reported during the year again showed a considerable increase which was most marked under the heads of diarrhoea, dysentery and anthrax.

VII. MISCELLANEOUS.

40. *Crop Statistics.*—During the year the usual reports and forecasts of outturn on the four crops selected by the Government of India, viz., paddy, cotton, indigo and gingelly, were issued at the prescribed intervals. Representations were made during the year with a view to the better adjustment of the dates originally fixed upon for these reports to the circumstances of the Presidency with the result that the recommendations made in the case of paddy and indigo have been adopted for future guidance, but in the case of cotton, it was not considered advisable to make any alteration on account of the necessity for issuing general reports for the whole of India; in the case of gingelly the proposals made were accepted in part only. The alterations made will, it is hoped, allow of more useful forecasts being published in future.

41. The following statement shows the areas of the principal crops harvested in the Presidency during 1890-91 in comparison with the corresponding areas in the previous year. The figures relate almost entirely to Government villages.

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Crops.	1889-90, Area harvested.	1890-91.		Outturn per cent. of average.
		Area		
		Sown.	Harvested.	
<i>Food-grains.</i>				
	ACS.	ACS.	ACS.	
Paddy	5,829,119	5,863,371	5,808,039	62
Chelam	4,106,862	4,323,932	4,294,417	57
Cumbu	2,504,075	2,661,104	2,559,468	61
Ragi	1,561,945	1,581,771	1,567,064	57
Others, including pulses	..	4,801,611	..	..
Total of Food-grains ...	..	19,231,789	..	..
<i>Industrial crops.</i>				
Sugar-cane	54,810	55,885	54,947	82
Cotton	1,548,691	1,679,908	1,655,586	55
Indigo	419,908	249,881	238,211	53
Castor	751,966	821,609	816,455	61
Gingelly	752,247	732,987	713,637	45
Ground-nut	271,657	250,992	248,916	55
Tobacco	96,921	89,193	87,324	60
All others, including topes ...	..	1,225,861	..	..
Total Area	..	5,103,316	..	..

* Not reported on.

Of the total cropped area, amounting to 24.3 million acres, nearly 80 per cent. was occupied by food-grains, including pulses, &c., and 14.3 per cent. by cotton and oil-seeds. Of the food-grains, paddy occupies the largest area (5.9 million acres), cholam and cumbu coming next with 4.3 and 2.6 millions, respectively. The chief industrial crops, next to cotton and oil-seeds, are indigo, tobacco and sugar-cane, which, respectively, cover 249,000, 89,000 and 55,000 acres. The outturn of food-crops varied during the year from 62 per cent. of an average crop for paddy to 51 per cent. for cumbu, and that of the industrial crops was generally between 51 and 60 per cent., except for sugar-cane and gingelly, which are, respectively, reported to have yielded 82 and 45 per cent. of an average crop. The following statement shows the distribution of the harvested area under the several crops in each district:—

Districts.	Percentage of harvested area under										
	Paddy.	Cholam.	Cumbu.	Ragi.	Cotton.	Indigo.	Sugar-cane.	Castor-oil and lamp-oil seeds.	Gingelly-oil seeds.	Ground-nut.	Tobacco.
1. Ganjam	4.5	0	0.2	4.3	0.2	..	2.8	0.6	2.2	..	0.4
2. Vizagapatam	1.7	0.1	1.0	1.1	0.3	..	10.3	0.1	3.6	..	1.6
3. Godavari	10.4	1.9	0.3	1.4	0.4	..	16.2	3.9	15.0	..	9.5
4. Kistna	7.8	9.8	7.1	1.8	11.5	20.3	0.1	14.8	0.2	..	20.3
5. Nellore	3.6	8.2	2.7	3.4	1.0	15.9	0.1	9.4	0.4	0	3.0
6. Kurnool	1.3	14.2	3.0	1.8	16.0	16.4	1.8	15.7	0.8	..	11.8
7. Bellary	0.8	17.6	2.9	2.4	20.6	0.5	15.9	11.6	2.4	..	5.6
8. Anantapur	1.4	6.0	1.7	4.3	8.6	1.9	3.1	10.7	2.4	..	2.0
9. Cuddapah	1.1	8.9	0.3	9.9	9.0	15.8	9.1	13.1	0.7	..	1.7
10. North Arcot	6.6	0.9	4.7	7.3	0	4.7	9.0	2.6	9.3	12.1	0.4
11. Chingleput	6.5	0.3	0.6	3.6	..	5.8	0.2	0	3.4	7.3	0.1
12. South Arcot	6.9	1.5	12.9	9.3	0.2	15.8	7.7	1.2	8.0	60.5	3.9
13. Salem	1.7	1.8	11.7	17.9	1.2	1.1	3.6	3.7	8.1	1.0	5.3
14. Coimbatore	1.6	17.2	22.8	12.7	15.5	..	8.9	5.3	13.6	..	18.3
15. Trichinopoly	3.4	3.4	3.0	6.9	0.8	1.3	8.8	2.1	2.1	5.9	1.2
16. Tanjore	15.5	0.3	1.1	1.8	0.2	0.2	0.4	0.1	1.3	12.5	6.6
17. Madura	3.0	5.4	4.2	5.8	4.0	0.0	1.1	4.0	7.3	..	5.0
18. Tinnevely	3.4	2.5	5.8	3.2	10.5	0.3	0.2	0.8	15.6	..	2.3
19. Nilgiris	0.1	0.0	..	0.1	..	..	..	..	..	..	..
20. Malabar	10.5	..	..	0.3	..	..	..	0.2	2.5	..	..
21. South Canara	8.2	..	..	0.2	0	..	0.7	0.1	0.6	..	1.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

42. The Total Rail-borne Trade—registered during the past year was the largest on record, as will be seen from the following statement:—

Year.	Imports.		Exports.		Internal.		Total.	
	In thou- sands of maunds.	In lakhs of rupees.	In thou- sands of maunds.	In lakhs of rupees.	In thou- sands of maunds.	In lakhs of rupees.	In thou- sands of maunds.	In lakhs of rupees.
1885-86	2,272	233	1,993	189	24,000	1,260	28,265	1,682
1886-87	2,951	300	2,526	269	27,988	1,740	33,465	2,309
1887-88	3,486	350	2,957	286	20,997	1,600	27,440	2,236
1888-89	2,919	359	3,634	316	22,773	1,717	29,376	2,392
1889-90	3,783	393	4,311	372	23,752	1,915	31,846	2,680
1890-91	5,353	443	4,306	370	26,983	2,026	36,642	2,839

It amounted to 36,642,436 maunds, showing an advance of 4,796,310 maunds or 15 per cent. in quantity and Rs. 15,948,034 or 6 per cent. in value over the trade of the previous year. There was an increase of 1,570,789 maunds or 41.5 per cent. in quantity and Rs. 50,12,508 or about 13 per cent. in value in the imports from other provinces; of this, 932,216 maunds was contributed by Mysore and 627,500 maunds by the Nizam's territory. This increase was chiefly due to the unfavorable character of the season, which, causing diminished outturn for the crops in many districts, led to the importation of a million maunds of grain and pulse more than in the preceding year and over a million and-a-half maunds more than in either of the two years before that. There was a slight falling off both in the quantity and value of the exports to the other provinces. The decrease was principally caused by diminished exports to the Nizam's territory, which showed a decline of 296,834 maunds: the decreased exports of rice from Kistna more than accounts for this. The exports to Bombay and Mysore, however, increased and the total amount was far in excess of that of any of the earlier years. In the local trade there was an increase of 3,230,865 maunds or 13.6 per cent. More than a third of this increase consisted of railway plant and rolling stock, the traffic in which was not exhibited in the previous year's returns. Excluding that, the increase was 2,041,634 maunds or 8.6 per cent., nearly one-third of which consisted of stone and lime, more than one half of miscellaneous articles and about one-fifth of metals and coal and coke.

43. The following abstract shows how the external and internal trade of the past year of both the chief sea-port towns and the rest of the Presidency compare with that of the previous year:—

	For the year		Increase or Decrease.	
	1889-90.	1890-91.	Amount.	Percentage.
<i>External trade.</i>				
Imports	I. MDS.	I. MDS.	I. MDS.	
	Into Madras (excluding chief sea-port towns) ..	2,601,709	4,039,814	+ 1,438,105
	Into Madras chief sea-port towns ..	1,177,931	1,313,615	+ 135,684
Total ..	..	3,782,640	5,353,429	+ 1,570,789
Export	(From Madras (excluding chief sea-port towns) ..	3,072,306	2,877,271	- 195,035
	From Madras chief sea-port towns ..	1,259,159	1,428,850	+ 169,691
Total ..	..	4,311,465	4,306,121	- 5,344
<i>Internal trade.</i>				
Of Madras excluding chief sea-port towns ..	10,855,693	14,043,296	+ 3,188,113	+ 29.3
Of Madras chief sea-port towns ..	12,896,328	12,939,030	+ 42,702	+ .3
Total ..	23,752,021	26,982,886	+ 3,230,865	+ 13.6
Grand Total ..	31,844,126	36,642,436	+ 4,796,310	+ 15.1

It will be seen that the distribution of the increase or decrease is very different as between the sea-ports and the rest of the Presidency. Influenced by the preponderance of the grain trade, the increased imports went chiefly to the latter portion; whilst as to the exports, the sea-ports sent away 15 per cent. more than in the previous year, a fact which may be chiefly attributed to the larger exports of coal and coke from Madras to Mysore (120,000 Indian maunds) and to the larger exports of iron to the same province, so that excluding these two classes of goods there was in reality a decrease in the exports from the sea-ports as well as from the rest of the Presidency.

44. The distribution of the trade carried on amongst each of the blocks into which this Presidency is divided is shown in the following table both for the foreign or external and for the local or internal trade:—

Blocks.	Imports.								
	1889-90.				1890-91.				Percent- age of increase or decrease.
	Foreign.	Internal.	Total		Foreign.	Internal.	Total		
			Amount.	Percent- age.			Amount.	Percent- age.	
1	2	3	4	5	6	7	8	9	10
	I. MDS.	I. MDS.	I. MDS.		I. MDS.	I. MDS.	I. MDS.		
Madras port ..	1,071,968	7,117,628	8,519,596	36.9	1,189,807	8,124,691	9,314,498	28.8	+ 9.3
Pondicherry port ..	48,026	1,777,826	1,825,852	6.7	23,401	1,502,196	1,525,597	4.7	- 16.5
Negapatam port ..	17,461	1,322,244	1,339,705	4.9	24,744	1,458,186	1,483,230	4.6	+ 10.7
Tuticorin port ..	9,596	1,384,882	1,394,478	5.0	10,384	1,128,210	1,138,594	3.5	- 18.4
Calicut port ..	30,880	963,748	994,628	3.6	65,279	725,497	790,776	2.4	- 27.2
Ceded Districts and Kurnool ..	712,234	832,413	1,544,647	5.6	754,029	1,374,829	2,128,858	6.6	+ 38.6
Nellore ..	2,136	145,731	147,867	.5	23,918	223,077	246,995	.8	+ 70.8
Chingleput and North Arcot ..	481,213	1,871,945	2,333,158	8.4	542,898	2,322,738	2,865,636	8.9	+ 22.8
South Arcot, Tanjore and Trichinopoly ..	169,369	3,040,145	3,209,514	11.7	232,557	3,608,033	3,840,590	11.9	+ 19.7
Madura and Tinnevely ..	96,434	2,452,040	2,548,474	9.3	375,764	3,323,887	4,199,641	13.0	+ 65.0
Salem, Coimbatore and Malabar ..	1,015,082	2,485,624	3,500,706	12.8	1,541,063	2,535,516	4,076,569	12.6	+ 16.4
Kistna ..	148,241	27,795	176,036	.6	559,006	155,726	714,731	2.2	+ 306.3
Total ..	3,782,640	28,752,021	27,534,661	100.0	5,353,429	26,982,886	32,336,315	100.0	+ 17.4

Blocks.	Exports.									Percent- age of increase or decrease of
	1889-90.				1890-91.					
	Foreign.	Internal.	Total		Foreign.	Internal.	Total			
			Amount.	Per- cent- age.			Amount.	Per- cent- age.		
11	12	13	14	15	16	17	18	19		
	I. MDS.	I. MDS.	I. MDS.		I. MDS.	I. MDS.	I. MDS.			
Madras port ..	1,167,360	3,233,029	4,405,389	15.7	1,370,492	4,209,358	5,579,850	17.8	+	26.7
Pondicherry port ..	9,383	166,492	175,875	.6	2,085	171,015	173,106	.6	-	1.5
Negapatam port ..	1,677	1,031,144	1,032,821	3.7	4,632	1,163,461	1,173,083	3.8	+	13.6
Tuticorin port ..	176	936,560	936,735	3.5	412	1,322,061	1,322,473	4.2	+	37.0
Calicut port ..	60,564	511,249	571,813	2.0	51,229	690,501	741,730	2.4	+	29.8
Ceded Districts and Kurnool ..	567,633	1,650,201	2,217,834	7.9	628,876	1,989,768	2,618,644	8.4	+	18.1
Nellore ..	2,276	261,137	263,413	1.0	1,369	455,869	457,228	1.5	+	74.5
Chingleput and North Arcot ..	652,269	6,685,012	7,337,311	26.1	685,489	7,400,614	8,089,103	25.9	+	10.2
South Arcot, Tanjore and Trichinopoly ..	59,232	4,638,946	4,698,178	16.7	51,216	5,266,023	5,317,238	17.0	+	13.2
Madura and Tinne- vely ..	4,122	1,925,415	1,929,537	6.9	6,825	1,703,862	1,710,687	5.5	-	11.3
Salem, Coimbatore and Malabar ..	1,097,820	2,645,324	3,743,144	13.3	1,105,229	2,484,681	3,589,910	11.2	-	4.1
Kistna ..	688,954	32,492	721,446	2.6	395,278	120,683	515,961	1.7	-	28.5
Total ..	4,311,465	23,752,021	28,063,486	100.0	4,303,121	26,982,886	31,289,007	100.0	+	11.5

The enormous increase in the imports of Kistna is attributable to development of the trade in coal from Singareni and to large imports of castor seeds. The decrease in the exports is more than accounted for by smaller exports of rice to Hyderabad. The large proportionate increase in the imports into Nellore was due to the demand for food-grains. The corresponding increase in the exports consisted chiefly of salt and miscellaneous articles. The enormous development of the imports into Madura and Tinnevely is to be attributed also to the great demand for food-grains. At the same time, the same alteration in the trade caused a decrease in the imports to Calicut and Tuticorin, in the latter case being aided by the smaller quantities of raw sugar sent to that port. The increased exports from the last-named port consisted chiefly of salt, coal and coke, iron, raw sugar and food-grains. The increased exports from Calicut also consisted largely of salt and food-grains. The increased imports to the Ceded Districts and Kurnool consisted chiefly of coal and coke, railway plant, rice and salt from Bombay; the increased exports consisted chiefly of food-grains sent to other parts of the Presidency. The increased imports into Chingleput and North Arcot consisted very largely of food-grains and the exports of raw sugar and ground-nuts. The larger exports from Madras consisted chiefly of coal and coke and railway plant.

45. *Road Traffic—Inter-provincial.*—The traffic with the Central Provinces was registered at two stations in the Vizagapatam district. The principal articles of import from those provinces were oil-seeds, grains and pulses, raw cotton and hides; the principal articles exported were salt and tobacco. The following statement shows the extent of inward and outward traffic registered at each station on account of goods, passengers and animals:—

Stations.	Inwards.			Outwards.		
	Goods.	Passengers.	Animals.	Goods.	Passengers.	Animals.
Bissemcuttack ..	I. MDS. 194,958	NO. 2,301	NO. 463	I. MDS. 67,130	NO. 2,283	NO. 181
Rayaghada ..	383,047	15,142	60	120,839	12,117	1,622

The trade from Vizagapatam to Jeypore was also registered at Pottanghi on three routes. It amounted to 445,079 maunds and 1,705 animals upwards from the plains and 567,877 maunds and 72 animals towards the coast. Salt accounted for the bulk of the former traffic, with twist and piece-goods and tobacco also in large quantities. The downward traffic consisted chiefly of food-grains, oil-seeds and myrabolans.

46. *Internal Trade.*—The local trade was registered at 25 stations in eight districts on thirteen roads as noted in the margin.

	Roads.	Stations.	In Ganjam, the traffic was registered		
			at Russelkonda, Purushottapur and Iyen-	at Russelkonda, Purushottapur and Iyen-	at Russelkonda, Purushottapur and Iyen-
Ganjam ..	2	5	jelli, which are situated on what are	jelli, which are situated on what are	jelli, which are situated on what are
Vizagapatam ..	2	4	called the "Aska roads," and at Varanasi	called the "Aska roads," and at Varanasi	called the "Aska roads," and at Varanasi
Kistna ..	3	4	Battili to Calingapatam. The following	Battili to Calingapatam. The following	Battili to Calingapatam. The following
Nellore ..	1	2	is an abstract of the long distance traffic	is an abstract of the long distance traffic	is an abstract of the long distance traffic
South Arcot ..	2	5	registered at each station in goods, passengers and animals:—	registered at each station in goods, passengers and animals:—	registered at each station in goods, passengers and animals:—
Tanjore ..	1	1			
Madura and Tinnevely ..	2	4			

Stations.	Goods.	Passengers.	Animals.
	I. MDS.	NO.	NO.
Russelkonda ..	372,359	44,792	16,991
Purushottapur ..	324,722	27,448	2,162
Iyenjelli ..	619,510	89,757	14,104
Hiramandalam ..	1,079,968	599,054	7,917
Varanasi ..	1,203,922	78,138	356

The principal articles of trade were turmeric, oil-seeds, hides and refined sugar towards the coast, and salt, provisions, food-grains, raw sugar, piece-goods, and twist towards Aska.

In *Vizagapatam*, the roads from Vizianagram to Pálkonda and from Vizianagram to Párvatipur were taken up for registration. The traffic on the former road was registered at Rajam and Pálkonda and that on the latter at Ramabhadrapuram and Párvatipur. The amount of the long distance traffic registered at each station is given below:—

Stations.	Goods.	Passengers.	Animals.
	I. MDS.	NO.	NO.
Rajam	338,260	86,059	3,839
Pálkonda	655,098	136,357	8,023
Ramabhadrapuram	1,106,678	58,643	3,087
Párvatipur	537,101	49,630	591

The principal articles of commerce were grains, oil-seeds and salt.

In *Kistna and Nellore*, the traffic on the road from Guntúr to the Hyderabad Frontier was registered at Piduguralla, that from Guntúr to Kurnool district *via* Dupad at Vinukonda, and that on the great northern trunk road from Nellore to Godávári at Guntúr, Chilakalurpet and Velampalle, the last-named station being within the limits of the Nellore district. The traffic on the latter road was also registered at Somayajapalle, where the road from Ongole to Cumbum joins it. The traffic which passed from the Hyderabad Frontier towards Guntúr and Ongole consisted chiefly of stone and lime, raw cotton, castor-seeds and pulses, and that towards Hyderabad of salt, rice and paddy, raw sugar and provisions. The trade between Kistna and Kurnool, registered at Vinukonda, was principally in stone and lime, salt and manufactured tobacco. In the opposite direction the trade was smaller, but included a considerable amount of salt also. That registered at Somayajapalle was chiefly in salt and paddy sent to Cumbum and in cholam, dyes and tans and ghee received in exchange. The principal articles of trade passing on the trunk road were:—At *Guntúr*, northwards, twist, castor-seeds, gram, ghee, tobacco, wheat and chillies, and southwards, cholam, raw sugar and turmeric. At *Chilakalurpet*, northwards, salt, castor-seeds and tobacco, and southwards, cholam, paddy, pulses and indigo. At *Velampalle*, northwards, cholam, provisions, iron and salt, and, southwards, castor-seeds, chillies and tobacco and gram. At *Somayajapalle*, northwards, paddy, cholam, provisions and raw sugar, and southwards, tobacco, chillies and castor-seeds. The following is an abstract statement of the traffic registered at these stations:—

Stations.	Goods.	Passengers.	Animals.	Goods.	Passengers.	Animals.
	I. MDS.	NO.	NO.	I. MDS.	NO.	NO.
<i>Towards Hyderabad.</i>				<i>From Hyderabad.</i>		
Piduguralla	378,398	15,349	38	350,308	14,295	1,479
Guntúr	329,997	12	..	862,177	305	30
<i>Towards Kurnool.</i>				<i>From Kurnool.</i>		
Vinukonda	40,295	11,275	2,704	28,667	7,659	361
Somayajapalle	131,378	10,474	..	93,582	10,864	101
<i>ON THE TRUNK ROAD.</i>				<i>Southwards.</i>		
<i>Northwards.</i>				<i>Southwards.</i>		
Guntúr	690,940	258	..	81,633	508	690
Chilakalurpet	92,555	22,654	2,406	96,404	22,890	1,928
Velampalle	75,241	15,582	40	141,654	18,308	27
Somayajapalle	89,057	30,548	208	73,082	31,862	25,014

In *South Arcot*, the trade on the road from Tiruvannámalai to Cuddalore was registered at Tiruvannámalai and Tirukoilúr, and that from Cuddalore to Salem at Vriddháchalam, Veppur and Rayappanur. Paddy, cholam and tobacco were the articles principally received from the Tiruvannámalai direction and the articles carried

towards that place were chiefly of provisions and spirits. The trade from the Cuddalore direction registered at Tirukoilúr principally consisted of salt and oil-seeds, and that carried in the contrary direction of paddy, rice, ground-nuts and tobacco; and on the Salem road salt was the principal article carried inland from Cuddalore; but considerable quantities of paddy were also carried and the return traffic towards that place chiefly consisted of grains, ground-nuts, raw cotton, tobacco and chillies. At Veppur and Tirukoilúr the cross traffic was also registered. The following is an abstract of the whole:—

Stations.	Goods.	Passengers.	Animals.	Goods.	Passengers.	Animals.
	I. MDS.	NO.	NO.	I. MDS.	NO.	NO.
<i>From Cuddalore.</i>				<i>Towards Cuddalore.</i>		
Tiruvannámalai	13,653	7,669	2,454	54,435	9,177	1,563
Tirukoilúr	29,002	15,671	..	27,512	16,936	13,926
Vriddháchalam	271,607	64,911	12,471	474,019	62,825	1,179
Rayappanur	89,067	53,166	358	139,419	52,348	3,945
Veppur	20,339	25,747	..	67,882	24,804	677
<i>Northwards.</i>				<i>Southwards.</i>		
Veppur	100,203	25,158	1,414	75,205	25,539	9,354
Tirukoilúr	8,866	20,958	30	16,696	12,951	13,018

In *Tanjore*, the trade passing from Nidámangalam towards Adirámpatnam was registered at Mannárgudi where a road branches off to Patukóta, but the statistics have been rejected as being inaccurately reported.

In *Madura and Tinnevely*, two roads were taken up for the registration of traffic, one leading from Madura to Tinnevely *via* Sríviliputur and the other from Tinnevely to Trivandrum. The stations at which the traffic was registered on account of the former road were Tirumangalam, Rajapalaiyam and Sankaranainárkoil. The traffic on the latter road was registered at Panakudi. The traffic which passed from Periyakulam, Sholavandan and Madura towards Tinnevely and *vice versa*, *via* Tirumangalam was registered at the last-named station. At Rajapalaiyam, the traffic which passed from Madura to Tinnevely and Tenkási and that from Periyakulam to Rajapalaiyam and *vice versa* were registered, and at Sankaranainárkoil the traffic passing on the main road as well as that on the branch road leading to Kalugumalai were registered. The following table gives the total traffic registered:—

Stations.	Goods.	Passengers.	Animals.	Goods.	Passengers.	Animals.	Chief articles of trade.
	I. MDS.	NO.	NO.	I. MDS.	NO.	NO.	
<i>Towards Tinnevely.</i>				<i>From Tinnevely.</i>			
Tirumangalam	143,519	9,042	3,434	35,337	10,734	1,353	Towards Tinnevely.—Grains, raw cotton, provisions, stone and lime.
Rajapalaiyam	163,597	72,359	5,628	263,686	77,464	867	From Tinnevely.—Raw sugar and provisions.
Sankaranainárkoil	101,110	32,224	489	124,822	37,258	39	Towards Tinnevely.—Grains, provisions and tobacco.
<i>Eastwards.</i>				<i>Westwards.</i>			From Tinnevely.—Salt, paddy, raw sugar, oil-seeds, coal and coke.
Tirumangalam	9,946	4,129	29	25,104	4,233	22	Towards Tinnevely.—Grains, oil-seeds, cotton, raw, and chillies.
Sankaranainárkoil	180,189	26,861	789	121,832	24,339	3,015	From Tinnevely.—Salt, iron, paddy and pulses.
<i>Towards Travancore.</i>				<i>From Travancore.</i>			
Panakudi	286,294	126,980	12,850	706,099	130,280	1,869	Towards Travancore.—Rice and paddy, spices and tobacco.
							From Travancore.—Raw sugar, provisions, coconut-oil and castor-oil.

APPENDIX I.

From C. BENSON, Esq., Assistant Director of Agriculture in charge of the office of the Inspector of Cattle Diseases, Madras Presidency, to the Secretary to the Commissioner of Revenue Settlement and Director of the Department of Land Records and Agriculture, dated 11th June 1891, No. 255.

I have the honour to submit the following report on cattle disease operations during the past official year.

2. From 9th April to 8th June 1890 Mr. Hazelton was on privilege leave and on 25th July soon after his return he resigned the appointment, and it was not again filled up. In G.O., No. 515, dated 4th July 1890, the abolition of the post was proposed, but in G.O., No. 236, dated 23rd March 1891, it was resolved to continue it, but no officer has yet been appointed to the post. Owing to this the operations were circumscribed.

3. At the beginning of the year the Sub-Assistant Director of Agriculture was on privilege leave from which he returned on 24th May. During June and July he was engaged in inspecting the work of the Stock Inspectors in Nellore, after that he was called into the Board's Office for duty there during the absence of the Assistant Director of Land Records and Agriculture on leave, and remained at head-quarters till the end of the year.

4. Under G.O., No. 515, dated 4th July 1890 three months' notice was given to all Stock Inspectors that their services would be dispensed with on the receipt of the sanction of the Government of India to the abolition of the appointment of Inspector of Cattle Diseases. In consequence of this notice four Inspectors left the department and obtained other appointments. Of the remaining fourteen Inspectors, six were selected in January last to undergo a special course of training at Saidapet with a view to their being better fitted to take charge of the Veterinary Hospitals, sanctioned in the Government Order above quoted. They remained on this duty till the end of the year. In March last, three Inspectors were placed on special duty in connection with famine relief work.

5. The actual cattle disease work done by the Inspectors is shown in the tables annexed, which also show the amount of medicines distributed and the expenditure incurred. The Deputy Inspector of Cattle Diseases was in charge of pony-breeding operations throughout the year, although his pay and allowances are included in the statement.

6. Act II of 1866 was put in force at the Subramania Cattle Fair in South Canara and at the Chitrai Fair at Madura during the year, and its provisions were enforced by Stock Inspectors detailed for the duty. The Act was withdrawn from all districts under the G.O., No. 984, dated 4th December 1890 and the Government, in its orders of July last, resolved to abandon all operations for directly combating disease except at fairs and festivals.

During an outbreak of rinderpest amongst the conservancy bullocks of the Madras Municipality, the work done by the Stock Inspectors detailed to deal with the disease was as follows:—

Number of animals.			
Treated.	Recovered.	Died.	Remaining.
134	54	55	24

The results were on the whole favorable.

7. The service books of the establishment have been brought up to date and verified.

ENCLOSURE No. 1.

TABLE showing the sick animals treated by Stock Inspectors during the official year 1890-91.

Names.	Number of villages inspected.		Number of sick animals.				Remarks.
	Inspected.	Non-inspected.	Admitted for treatment.	Recovered.	Died.	Unknown.	
1. P. Raghava Pillai ..	50	88	297	42	29	226	On privilege leave 1 0 On other duty 3 0
2. K. Padmanabhaya ..	53	65	172	85	45	42	On privilege leave 1 0 On sick leave 3 21
3. M. Venketramana Sastry ..	73	45	110	75	12	23	On privilege leave 2 10 On other duty 0 11
4. A. Canthayya Mudaliar ..	68	54	250	69	45	136	On sick leave 4 6 On privilege leave 1 0
5. B. K. Santaya ..	93	126	723	401	24	298	On other duty 2 9 On privilege leave 1 28
6. M. Kuppoosawmy Sastry ..	37	68	15	8	3	4	Left the department, 1st Nov- ember 1890. 1 20 On privilege leave 2 11
7. K. Sethu Row ..	126	34	84	49	20	15	On other duty 0 10 Leave on loss of pay 2 22
8. P. Viswanatha Iyer ..	41	153	138	51	25	62	On privilege leave 2 9 On other duty 1 18
9. V. P. Subramania Mudaliar.	18	139	139	88	8	43	On privilege leave 1 0 Left the department, 1st Sep- tember 1890 1 0
10. K. Ramen ..	18	38	37	16	11	10	Left the department, 30th Oc- tober 1890 5 2 Leave on loss of pay 2 0
11. R. Narayana Row ..	50	7	315	147	77	91	On other duty 0 20 Leave on loss of pay 0 15
12. Seethambu Devoo ..	107	134	106	69	23	14	On other duty 1 10 Privilege leave 1 0
13. G. Rungiah Naidu ..	104	82	281	124	64	93	On other duty 2 17 Privilege leave 2 1
14. M. Hassen Ali ..	43	109	173	31	28	114	Left the department, 19th Sep- tember 1890 0 21 On other duty 1 0
15. B. Subramania Iyer ..	5	134	16	7	..	9	Leave on medical certificate 0 13 On other duty 1 14
16. V. Chockalingam Pillai ..	65	244	169	13	7	149	On other duty 2 14
17. R. Kanniah Naidu ..	256	95	937	470	28	439	
18. Moses Abraham ..	112	119	454	65	47	342	
Total ..	1,319	1,784	4,416	1,810	496	2,110	

ABSTRACT of cases treated under different diseases and results.

Rinderpest	2,669	905	414	1,350
Diarrhoea and dysentery	78	56	1	21
Anthrax	172	62	42	68
Epizootic apthia	1,126	577	1	548
Varicella (sheep-pox)	124	59	25	40
Other diseases	247	151	13	63
Total	4,416	1,810	496	2,110

ENCLOSURE No. 2.

STATEMENT showing the number of villages inspected by the Stock Inspectors in each taluk of the district in which they were posted for duty during the official year 1890-91.

1	2	3	4	5	6
Taluks.	Taluks.	Taluks.	Taluks.	Taluks.	Taluks.
P. Raghava Pillai.	K. Padmanabhaya.	M. Venketramana Sastri.	A. Ganthayya Madalar.	B. K. Santaya.	M. Kuppasaawmy Sastri.
Nallore, Madras, North Arcot and Tanjore.	Cuddapah.	Madura and Kurnool.	Madura.	South Canara.	Kistna.
Number of villages visited.	Number of villages visited.	Number of villages visited.	Number of villages visited.	Number of villages visited.	Number of villages visited.
129	2	5	22	119	21
Nallore District.	Tirumangalam	Madura	Madura	Mangalore	Bandar
Kandukur	Sidhout	Madura	Madura	Uppanangudi	Reyalla
Madras.	Badvel	Dindigul	Dindigul	Udupi	Guntur
	Pulivendla		Palni	Coondapoor	Bervida
	Proddutur	Kurnool.	Tirumangalam	Kasaragod	Gudlunda
	Rayachoti				Narasaropet
	Vayalpad	Kurnool			Palnad
	Madanapalle	Koilkuntla			Settenapalle
	Cuddapah	Ramalakoti			Vimkonda
	Pullampet	Markapur			
		Sirvel			
		Nandyal			
		Patikonda			
Chittoor	3	10	122	219	105
Tanjore.					
Kumbakonam	3	118	122	219	105
Total	133	118	122	219	105

Statement showing the number of villages inspected by the Stock Inspectors in each taluk of the district, &c.—*cont.*

7		8		9		10		11		12	
K. Sethu Row.		C. Viswanatha Iyer.		V. P. Subramoney Mudali.		K. Ramen.		R. Narayana Row.		V. Seethambu Devco.	
South Arcot and Tanjore.		Anantapur.		Tinnevely.		Malabar.		South Arcot and Trichinopoly.		Kistna.	
Taluka.	Number of villages visited.	Taluka.	Number of villages visited.	Taluka.	Number of villages visited.	Taluka.	Number of villages visited.	Taluka.	Number of villages visited.	Taluka.	Number of villages visited.
<i>South Arcot District.</i>											
Tirukoilur ..	62	Anantapur ..	55	Tinnevely ..	25	Kurumbanad ..	13	Tirukoilur ..	1	Pahad ..	84
Cuddalore ..	37	Tadipatri ..	16	Otapidaram ..	13	Kottayam ..	5	Répallo ..	..	Répallo ..	21
Chidambaram ..	21	Goody ..	48	Satur ..	67	Calicut ..	16	Bapatla ..	..	Bapatla ..	77
Tindivanam ..	2	Dharmavaram ..	13	Sankaranainarkoil ..	21	Pondani ..	3	Guntur ..	..	Guntur ..	15
Tiruvannamalai ..	3	Pudukonda ..	11	Srivilliputtur ..	13	Waiwank ..	5	Bevvada ..	..	Bevvada ..	2
		Hindupur ..	59	Tentkari ..	12	Ernad ..	14	Musiri ..	32	Karasanept ..	25
		Madakasira ..	1	Tankasi ..	18			Udayarpalayam ..	23	Sattenapalle ..	1
				Ambasamudram ..	19			Perambalur ..	2	Guduvada ..	16
				Nanguneri ..	19						
<i>Tanjore District.</i>											
Tanjore ..	8										
Kumbakonam ..	16										
Negapatam ..	5										
Nannilam ..	6										
Total ..	160		194		207		56		57		241

Statement showing the number of villages inspected by the Stock Inspectors in each taluk of the district, &c.—cont.

13		14		15		16		17		18	
G. Rungiah Naidu.		M. Hassan Ali.		B. Subramoney Iyer.		V. Chockalingam Pillai.		R. Kanniah Naidu.		Moses Abraham.	
Kurnool, North Arcot, Chingleput and Madras.		Salem.		Bellary.		Nellore.		Godavari.		Tanjore.	
Taluka.	Number of villages visited.	Taluka.	Number of villages visited.	Taluka.	Number of villages visited.	Taluka.	Number of villages visited.	Taluka.	Number of villages visited.	Taluka.	Number of villages visited.
Kurnool District.											
Malkapur	6	Uttankur	43	Bellary	88	Nellore	206	Peddapuram	32	Tanjore	57
North Arcot District.		Salem	69	Hospet	43	Gudur	49	Bamachandrapuram	54	Kumbakonam	62
Pungundur	11	Tirupattur	23	Alur	3	Pogur	7	Coimbatore	147	Nannilam	102
Kalahasti	7	Tiruchengudi	5	Bayandrug	5	Rapur	13	Pitbapuram	12	Negapatam	10
Chingleput District.		Alur	13			Amakur	9	Amalapuram	5		
Saidapet	53					Ongele	23	Narsapur	15		
Chingleput	12					Kandukur	1	Rajahmundry	26		
Madurantakam	8					Kavali	1	Tuni	10		
Ponnéri	33							Ellore	25		
Conjeevaram	40							Tanuku	25		
Iravallur	15										
Madras.											
Monnegar Choultry	1										
Bullock Depot	1										
Total	186		152		139		309		351		231

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ENCLOSURE No. 3.

STATEMENT showing the number of doses of medicines despatched to the undermentioned districts during the official year 1890-91.

Districts.	Astringent powder for rinderpest, 2nd stage.	Carbolic balls for anthrax and rinderpest, 1st stage.	For foot-and-mouth disease, for external application.	For foot-and-mouth disease to make gargle.	Cinchona febrifuge.	DISINFECTANTS.	
						MacDowgall's powder.	Roll sulphur.
Anantapur	DOSES. 500	DOSES. 520	LBS. ..	LBS. ..	LBS. ..	CWT. LBS. 1 0	CWT. LBS. ..
Canara, South	4,000	2,000	..	6	2	1 0	..
Chingleput	..	500	..	..	..	1 0	0 10
Ganjam	500	800	10	10	..	..	..
Madras	100	100	..	..	..	0 30	..
Nalgiris	50	100	5	5	..	0 30	1 0
Trichinopoly	..	600	..	..	..	0 30	..
Total	5,150	4,420	15	21	2	2 90	1 10

STATEMENT showing the actual charges incurred during the official year 1890-91 :—

	RS.	A.	P.
Pay and allowances—			
Inspector of Cattle Diseases	3,392	12	0
Deputy Inspector of Cattle Diseases	4,517	0	0
Sub-Assistant Director of Agriculture	2,835	6	0
Stock Inspectors	16,751	7	5
Office establishment	987	11	2
District medicines	135	15	2
Contingent charges	441	12	2
Total	29,061	15	11

APPENDIX II.

Statistics of mortality among cattle in the Presidency of Madras during the year 1890-91.

Districts.	Total stock for 1890-91.	Deaths due to disease.						Deaths due to other causes.						Total deaths from all causes.			
		Rinder-pest.	Diarrhoea and dysentery.	Anthrax.	Epizootic apthia.	Variola.	All other diseases.	Total.		Natural decay.	Acci- dents.	Snake- bites.	Wild animals.	Criminal poisoning.	Total.	Number.	Rate per mille.
								Number.	Rate per mille.								
1. Ganjam	223,100	649	835	841	1,810	467	801	4,936	21	478	3	33	88	...	608	5,544	24
2. Vizagapatnam	125,300	105	469	305	1,115	...	353	1,814	14	829	38	18	57	...	942	2,755	22
3. Godavari	803,900	664	1,273	1,242	282	...	271	3,732	5	8,783	958	143	350	...	9,534	13,265	17
4. Krishna	1,151,300	354	417	1,008	42	299	1,324	3,444	3	18,830	1,095	222	339	2	20,488	23,932	21
5. Nellore	630,300	607	1,228	1,062	54	101	1,101	4,153	7	6,651	303	88	112	...	7,155	11,303	18
6. Kurnool	632,400	1,913	553	1,104	103	167	5,152	9,042	14	6,633	656	130	398	...	7,827	16,869	27
7. Bellary	655,000	24	56	287	16	11	1,841	2,035	3	7,672	580	35	152	...	8,445	10,484	16
8. Anantapur	602,600	640	266	635	113	...	945	2,599	4	6,698	456	35	139	3	7,331	9,930	16
9. Cuddapah	1,033,400	213	2,437	1,745	100	293	1,972	6,760	7	8,297	534	307	604	...	9,337	16,237	16
10. North Arcot	920,600	750	2,012	1,721	408	8	1,129	6,058	7	16,998	534	454	41	...	18,373	24,431	27
11. Chingleput	439,500	1,576	1,962	2,820	280	...	757	6,935	16	13,643	327	454	41	...	14,465	21,400	49
12. South Arcot	1,089,600	4,549	1,548	2,912	193	...	455	9,662	9	11,310	301	243	106	...	11,900	21,622	20
13. Salem	1,097,300	137	308	71	53	247	514	2,080	1	2,080	247	62	467	...	2,956	4,184	4
14. Coimbatore	1,300,200	408	3,033	246	350	206	2,473	6,716	5	10,937	663	121	711	10	12,402	19,178	15
15. Trichinopoly	637,700	762	3,927	428	600	78	813	6,608	10	14,231	510	152	47	1	14,931	21,539	34
16. Tanjore	881,100	5,694	2,307	1,280	556	3	1,344	11,184	13	13,476	257	169	11	1	13,914	25,098	28
17. Madura	649,800	1,691	4,408	940	578	241	3,615	11,573	18	12,202	517	126	289	4	13,138	24,711	38
18. Tinnevely	489,900	135	276	76	25	80	217	839	2	6,516	93	69	46	3	6,726	7,565	15
19. Nilgiris	70,100	675	28	16	133	...	4	855	12	1,699	497	10	456	...	2,692	8,547	51
20. Malabar	936,600	218	470	118	38	10	213	1,097	1	14,077	236	161	2,322	...	16,846	17,943	19
21. South Canara	682,900	175	28	229	110	3	182	797	1	15,786	1,366	48	3,196	...	20,396	21,123	31
Total	15,062,600	21,970	27,907	19,586	6,064	2,214	25,356	102,097	6.8	197,736	9,629	2,698	10,533	24	220,620	322,717	21.4

Statistics of mortality among sheep and goats in the Presidency of Madras during the year 1890-91—cont.

Districts.	Total stock for 1890-91.	Deaths due to disease.						Deaths due to other causes.					Total Number.	Rate per mille.		
		Rinder- pest.	Diarrhoea and Dysentery.	Anthrax.	Epizootic apthia.	Variola (sheep pox, &c.).	All other diseases.	Total.		Natural decay.	Accidents.	Snake- bites.			Wild animals.	
								Number.	Rate per mille.							
1. Ganjam	52,600	9	53	26	144	55	88	375	7	2	..	1	31	34	409	8
2. Vizagapatnam	47,200	52	223	57	..	255	48	636	13	168	17	3	204	382	1,015	22
3. Godavari	149,800	15	..	16	186	94	2	313	2	251	18	4	69	352	665	4
4. Krishna	510,100	..	2	..	..	125	333	468	1	1,974	129	3	643	2,049	2,513	5
5. Nellore	570,700	12	20	13	..	..	429	474	1	1,532	139	2	260	1,933	2,407	4
6. Kurnool	586,800	49	57	151	..	104	603	1,029	2	349	322	10	224	1,528	2,557	4
7. Bellary	610,700	..	177	2,093	..	1,002	394	4,355	7	2,663	320	1	847	2,598	5,554	11
8. Anantapur	891,800	93	143	281	74	3,450	747	4,728	6	2,788	218	6	852	3,864	8,592	10
9. Cuddapah	1,342,600	45	1,523	801	20	1,144	747	4,280	3	2,042	165	11	1,384	3,603	7,853	6
10. North Arcot	712,800	130	124	433	38	97	463	1,225	2	2,021	127	3	284	2,435	3,680	6
11. Chingleput	269,500	37	122	189	63	159	166	736	3	1,800	47	23	197	2,127	2,803	11
12. South Arcot	987,700	413	439	152	17	13	200	1,334	1	1,307	57	2	28	1,394	2,728	3
13. Salem	1,210,700	34	37	124	17	41	75	204	..	677	93	11	673	1,454	1,658	1
14. Coimbatore	1,864,000	82	401	384	129	136	1,390	2,271	2	7,009	925	22	963	8,919	11,150	8
15. Trichinopoly	1,083,200	40	348	25	9	113	120	1,110	1	8,307	825	32	397	9,472	10,582	10
16. Tanjore	572,900	45	13	384	105	..	89	181	..	1,633	29	16	25	1,707	1,898	3
17. Madura	712,000	846	751	417	103	752	1,744	4,643	7	7,233	364	29	347	8,023	12,666	18
18. Tinnevely	856,200	270	307	41	21	510	445	1,505	2	6,595	334	17	418	7,414	9,099	11
19. Nilgiris	8,100	..	..	..	..	..	..	..	..	..	2	..	27	37	37	5
20. Malabar	66,700	..	1	5	..	5	8	19	..	375	86	1	101	563	582	9
21. South Canara	10,400	..	..	2	..	..	..	2	..	62	10	..	37	109	111	11
Total	12,846,700	2,172	4,741	5,211	985	8,156	8,771	29,377	2.4	47,606	4,278	192	7,921	59,997	89,974	7.1

