



ANNUAL ADMINISTRATION REPORT

OF THE

MADRAS CIVIL VETERINARY
DEPARTMENT

FOR THE YEAR

1935-36



MADRAS

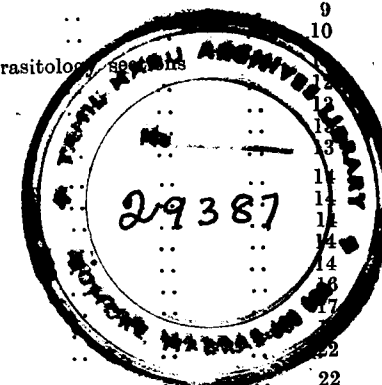
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ANNUAL ADMINISTRATION REPORT OF THE MADRAS CIVIL VETERINARY DEPARTMENT FOR THE YEAR 1935-36.

I.—STAFF.

(a) Administration.

I continued to be in charge of the department from the beginning of the year till 4th July 1935 when I proceeded on three months and 21 days leave. Mr. T. J. Hurley, who was appointed to officiate as Director of Veterinary Services, held charge of the department from 5th July 1935 to 25th October 1935. I returned from leave, resumed charge of the department from Mr. Hurley on 26th October 1935 forenoon and continued to hold it till the end of the year under report.

During the period he held charge of the department, Mr. Hurley inspected four District Veterinary Offices, 29 Veterinary institutions and 32 touring billets besides the private institutions at Vizianagram and Parlakimedi and the Veterinary Assistant Surgeon on export duty at Tuticorin. He also inspected the field work of the Veterinary Investigation Officer at Tuticorin, the police horses at Vellore, the Government livestock at Hosur Cattle Farm and the Revenue and police elephants at Russellkonda and Parlakimedi. He served as the President of the Board of Examiners who conducted the supplementary examinations at the Madras Veterinary College, and also attended the meeting of the Advisory Board of the Imperial Council of Agricultural Research held at Simla.

I inspected 8 District Veterinary offices, 26 Veterinary institutions, 24 touring billets, the Madras Veterinary College, the Serum Institute, the Office of the Veterinary Investigation Officer, the farm animals at the Agricultural College Veterinary Hospital, Coimbatore, and the police horses at Vellore. I served as the President of the Board of Examiners who conducted the Refresher course and the professional examinations at the Madras Veterinary College, and attended the meeting of the Advisory Board of the Imperial Council of Agricultural Research held at New Delhi. I was also deputed to attend the Animal Husbandry Research Workers' Conference at Delhi.

(b) Indian Veterinary Service.

2. The number of Indian Veterinary Service Officers in the department during the year remained at two, viz., Messrs. P. T. Saunders and T. J. Hurley.

(c) Madras Veterinary Service.

3. Mr. R. Narasinga Rao held charge of the Madras Circle up to the end of July 1935 and the Serum Institute, Madras, from 1st August 1935 to 18th November 1935, when he went on

leave for 4 months preparatory to retirement. M.R.Ry. Rao Sahib K. Kailasam Ayyar Avargal, held charge of the Serum Institute till 31st July 1935 when he was transferred as Acting Principal, Madras Veterinary College. On relief as Principal he went on leave for 2 months from 26th October 1935 and rejoined duty on 25th December 1935 afternoon at the Serum Institute, where he continued to be in charge till the end of the year. Mr. M. R. V. Panikkar held the post of Lecturer in Hygiene, Resident Veterinary Officer, and Personal Assistant to the Principal, Madras Veterinary College, during the year except for the periods from 4th July 1935 to 31st July 1935 when he acted as Principal, Madras Veterinary College, and from 1st October 1935 to 5th October 1935 when he was on leave. Mr. M. Anantnarayan Rao continued as Lecturer in Parasitology, Madras Veterinary College, throughout the year. Mr. A. Ramachandra Ayyar was in charge of the Madanapalli Circle during the year except during the period from 13th June 1935 to 12th September 1935 and 1st February 1936 to 29th February 1936 when he went on leave. Mr. K. S. Nair held the post of Lecturer in Surgery, Madras Veterinary College, except for the period from 9th November 1935 to 22nd November 1935 when he was on leave with permission to affix holidays on the 23rd and 24th idem. Mr. W. J. D'Costa was in charge of the Trichinopoly circle up to and inclusive of 3rd July 1935 when he was granted leave preparatory to retirement. Mr. A. K. Mitra acted as Lecturer in Pathology and Bacteriology, Madras Veterinary College, during the year and from 3rd April 1935 to 9th July 1935 he was deputed to undergo postgraduate course at Muktesar. Mr. C. Venkataratnam Chetti was in charge of the Bezwada Circle except during the periods from 9th May 1935 to 8th July 1935 and 8th February 1936 to 31st March 1936 when he went on leave. Mr. G. A. Ajwani held charge of the Madura circle up to and inclusive of 12th March 1936 when he was placed under suspension pending disposal of the charges framed against him. Mr. C. S. Murti was in charge of the Vizagapatam circle from 1st April 1935 to 21st May 1935, the Madras circle from 2nd October 1935 to 18th November 1935 and 26th December 1935 to 31st March 1936 and the Serum Institute from 19th November 1935 to 25th December 1935. He was on leave from 22nd May 1935 to 21st September 1935 and he held additional charge of the Vellore circle on 7th February 1936. Mr. T. S. Alagappa Pillai held charge of the Nellore circle throughout the year. Mr. A. L. N. Somayajulu Pantulu held charge of the Rajahmundry circle up to and inclusive of 22nd March 1936 when he was relieved to proceed on transfer to the Orissa Province. Mr. K. S. Natesa Ayyar continued to be in charge of the Coimbatore circle throughout the year.

4. Mr. K. Seshagiri Rao was in charge of the Bellary circle except during the period from 1st April 1935 to 8th June 1935 when he was on leave. Mr. H. N. Chelva Ayyangar continued

to hold the post of Lecturer in Anatomy, Madras Veterinary College, throughout the year. Mr. M. A. Rangaswami Ayyar held the post of Lecturer in Physiology and was on duty throughout the year except during the periods from 8th April 1935 to 10th April 1935 and from 1st May 1935 to 27th June 1935 when he was undergoing training in Bio-Chemistry at the Madras Medical College. Mr. A. Castelino was in charge of the Calicut circle throughout the year. Mr. M. Sundaranathan who completed his probation in the Madras Veterinary Service held the post of Acting Lecturer in Pharmacology throughout the year. Mr. N. Muniyappa Pillai, a probationer in the Madras Veterinary Service was in charge of the Vellore circle till his death on 5th February 1936.

5. The following probationers also held acting appointments in the service for different periods during the year :—

- (1) Mr. M. Ponnayya.
- (2) „ R. Swaminathan.
- (3) „ S. S. Thitharappa Mudaliyar.
- (4) „ L. Kumaraswami Pantulu.
- (5) „ P. I. Chakko.

6. Mr. G. R. Viswanathan continued to hold the post of Veterinary Investigation Officer, Madras, which is a temporary addition to the cadre of the Madras Veterinary Service. Mr. S. D. Devadoss Pillai held the post of the Inspector of Livestock in the Forest Department throughout the year.

7. *Touring by District Veterinary Officers.*—The number of days spent on tour by each of the District Veterinary Officers during the year is given below :—

	Number of days spent on tour.
District Veterinary Officer, Vizagapatam ...	237
„ Rajahmundry ...	183
„ Bezwada ...	193
„ Nellore ...	197
„ Bellary ...	182
„ Madanapalli ...	182
„ Vellore ...	200
„ Coimbatore ...	205
„ Calicut ...	182
„ Madura ...	180
„ Trichinopoly ...	193
„ Madras ...	172

8. *Professional work done by District Veterinary Officers.*—Inoculations were done by all District Veterinary Officers with goat virus and experiments to determine the minimum dose of anti-rinderpest serum required for protecting cattle against rinderpest by the serum-simultaneous method were also conducted by them. Forty seven thousand five hundred and eighty-five goat virus vaccinations and 7,242 other inoculations were performed by District Veterinary Officers during the year, out of which 6,527

and 585 were done along with Veterinary Assistant Suregons. They attended the local Veterinary institutions while at headquarters and rendered professional help to the Veterinary Assistant Surgeons in charge in treating important and difficult cases. Opportunities were taken to render similar aid to the staff when in camp. They interviewed the Revenue officers on tour and enquired into the needs of the ryots on veterinary matters. They inspected the Government Livestock at Agricultural Farms and the breeding bulls stationed at different places in the course of their tours as occasions arose. They personally attended to some outbreak reports and treated cases of both contagious and non-contagious nature. Opportunities were also availed of to do propaganda work at cattle fairs by delivering magic lantern lectures and demonstration of the Burdizzo method of castration.

The District Veterinary Officer, Calicut, malleined 4 mules of the Military Department at Cannanore. The District Veterinary Officer, Madras, conducted the mallein test on 6 mules and 1 charger belonging to the Military Department and declared them to be negative for Glanders. The District Veterinary Officer, Vellore, helped the Agricultural Department in the selection of bullocks at Tiruvannamalai cattle fair. A preliminary investigation was made by him to find out the exact cause of the death of a bull at Hosur Cattle Farm suspected to have died of John's disease but the results of the post-mortem examination on the carcass of the animal were negative.

A dog suffering from progressive anaemia and wasting was diagnosed as suffering from Hepatozoon canis. The diagnosis was confirmed by the Principal, Madras Veterinary College. It was treated successfully by Mr. R. Swaminathan, Acting District Veterinary Officer, Trichinopoly, with intravenous injections of Antimosan. This is reported to be the first authentic instance of a successfully treated case of Hepatozoon canis. The animal is reported to be still under observation and although it is over 6 months since the animal was discharged it still remains healthy and well.

The total number of specimens examined microscopically by the District Veterinary Officers was 2,335.

(d) *Madras Veterinary Subordinate Service.*

9. The strength of the cadre of Veterinary Assistant Surgeons on 31st March 1936 was 282 including the following temporary posts as against 274 at the end of March 1935:—

Veterinary Assistant Surgeons sanctioned for the Serum Institute	7
Assistant to the Veterinary Investigation Officer	1
Assistant to the Lecturer in Animal Hygiene, Agricultural College, Coimbatore	1
Special Veterinary Assistant Surgeon sanctioned for exclusive duty in connexion with the inspection of sheep and goats intended for export at Tuticorin	1

Touring billets sanctioned during 1934-35 and 1935-36	12
Veterinary Assistant Surgeon for new Veterinary Dispensary, Shiyali	1
Veterinary Assistant Surgeon for Veterinary Dispensary, Royapuram	1
Leave reserve post at 6½ per cent of the temporary posts	1
Total	25

10. The 282 posts were distributed as shown below during the year under report:—

(1) Itinerating	104 Plains.	5 Agency.
(2) In charge of institutions	111 Plains.	3 Agency.
(3) Leave reserve	32*	
(4) Attached to head office	1	
(5) Employed in the Madras Veterinary College	11	
(6) Employed in the Serum Institute	7	
(7) Employed in the Agricultural Department	3	
(8) Employed in the Forest Department	3	One of these three posts is kept temporarily vacant.
(9) Under the Veterinary Investigation Officer	1	
(10) Special Veterinary Assistant Surgeon on export duty at Tuticorin	1	
Total	282	

* This number is made up of 13 permanent leave reserve, 18 temporary leave reserve for the permanent cadre and 1 temporary leave reserve for the temporary cadre.

II.—EDUCATION—MADRAS VETERINARY COLLEGE.

(i) *Instruction.*

(a) *Staff.*

11. The following were the officers who were on the gazetted staff of the college during the year:—

- (1) Mr. T. J. Hurley, Principal and Professor of Medicine.
- (2) „ M. R. V. Panikkar, Lecturer in Hygiene, Resident Veterinary Officer and Personal Assistant to the Principal.
- (3) „ M. Anantnarayan Rao, Lecturer in Parasitology.
- (4) „ K. S. Nair, Lecturer in Surgery.

- (5) Mr. A. K. Mitra, Acting Lecturer in Pathology and Bacteriology.
 (6) „ H. N. Chelva Ayyangar, Lecturer in Anatomy.
 (7) „ M. A. Rangaswami Ayyar, Lecturer in Physiology.
 (8) „ M. Sundaranathan, Acting Lecturer in Pharmacology.

(b) Training.

12. As usual, the students were afforded every opportunity for obtaining a practical knowledge of the various subjects taught for the course so as to acquire a good practical knowledge of all branches of the profession. During the year the students attended the Serum Institute, Perambur, in order to obtain practical knowledge of the production of rinderpest virus, and anti-rinderpest serum.

(c) Admission of Students.

13. Government in their Order Ms. No. 661, Development, dated 3rd May 1935, restricted the number of candidates to be selected from the Presidency to 30 for the academic year 1935-36 and fixed the number of candidates to be admitted from outside including Burma at 10.

14. The term of office of the members appointed to the Committees constituted in G.O. No. 778 (12-S), dated 4th June 1932, for the selection of candidates for admission to the Madras Veterinary College having expired on 11th June 1935, Government in their Order Ms. No. 434, Development, dated 20th March 1935, reconstituted the committees by appointing one committee instead of two for both the centres (Bezwada and Madras) consisting of the following members for a term of three years from 12th June 1935 :—

President.

- (1) Principal, Madras Veterinary College (ex officio).

Members.

- (2) Khan Bahadur S. K. Abdul Razak Sahib Bahadur, Saidapet.
 (3) M.R.Ry. N. Sivaraj Avargal, B.A., B.L., M.L.C., Madras.
 (4) „ P. C. Moses Avargal, M.A., M.L.C., Guntur.
 (5) Dr. D. Govindarajulu Nayudu Garu, Bezwada.

15. The Committee met at Bezwada on the 26th and at Madras on the 29th June 1935 and selected 24 candidates (3 at Bezwada and 21 at Madras) for admission. All the 3 candidates selected at Bezwada and 17 of the 21 candidates selected at Madras joined the college bringing the total number of admissions to 20 from the Presidency. As regards students from outside the Presidency, 1 candidate from Federated Malay States and 10 from Burma were admitted to the college. One of the Burma Government students left the college from the beginning of the second term. At the annual examination held in March 1935 for class A, 4

students failed and 6 were provisionally promoted to class B. Three of the failed students did not rejoin the college and one student rejoined, but resigned his seat subsequently. None of the provisionally promoted students reverted to class A, as all of them passed the supplementary examination held in October 1935. Thus, the total number of students in class A, at the end of the year was 30 consisting of 20 newly selected Presidency students paying a tuition fee of Rs. 90 each per annum and 10 non-Presidency students paying a tuition fee of Rs. 400 each per annum. of the above 1 is a B.Sc., 10 are Intermediates, 9 S.S.L.C. holders and 1 Senior Cambridge certificate holder, the remaining 9 Burma Government scholars possessing the general educational qualifications prescribed by the Government of Burma.

16. The total number of students at the end of the year in all the three classes was 96 (30 in class A, 35 in class B and 31 in class C) as against 107 of the previous year. The different communities to which these 96 students belonged are shown below :—

Non-Brahmans	...	...	...	...	...	26
Brahmans	...	...	...	...	...	35
Anglo-Indians and Indian Christians	...	...	...	...	...	12
Muhammadans	...	...	...	...	...	6
Burmans	...	...	...	...	...	17
						—
Total	...	...	...	...	...	96
						—

(d) Scholarships

17. Of the 4 scholarships sanctioned for the college, 2 were awarded to members of the backward classes enumerated in Appendix 17-A of the Madras Educational Rules, 1 was awarded to a Muhammadan and 1 to a poor Christian (grandson of a convert to Christianity from backward community).

(e) Professional Examinations.

18. The Government sanctioned in G.O. Ms. No. 1209, Development, dated 3rd September 1935, the holding of a supplementary examination annually for the failed students of the final year class. The examination was held along with the supplementary examinations for the provisionally promoted students from the I and II year classes, on the 7th, 8th, 10th and 11th October 1935 by Messrs. T. J. Hurley, K. Kailasam Ayyar and M. R. V. Panikkar who were appointed as Examiners. The results of these examinations are given below :—

					Number appeared.	Number passed.
Class A	..	..	..	..	6	6
Class B	..	..	..	..	3	3
Class C	..	..	..	..	10	5

19. The following members constituted the Board of Examiners for the annual examinations from the 19th to 30th March 1936 :—

President.

Mr. P. T. Saunders, Director of Veterinary Services.

Members.

- Mr. T. J. Hurley, Principal, Madras Veterinary College.
- „ K. Kailasam Ayyar, Superintendent, Serum Institute.
- „ M. R. V. Panikkar, Lecturer in Hygiene, Madras Veterinary College.
- „ M. Anantnarayan Rao, Lecturer in Parasitology, Madras Veterinary College.

In class A, 30 students appeared and 19 passed; in class B, 35 students appeared and 19 passed and in class C, 31 students appeared and 24 passed. The Board considered that the results of the examinations were satisfactory.

(f) Refresher Course.

20. The revised refresher course from July to March sanctioned in G.O. Ms. No. 1516, Development, dated 2nd November 1934, was introduced from July 1935. Six Veterinary Assistant Surgeons from the department and two Veterinary Inspectors of His Exalted Highness the Nizam's Government attended the course.

(g) University degree in Veterinary Science.

21. The Syndicate of the Madras University sanctioned the recognition of the Madras Veterinary College as a constituent college qualified to impart instruction for the Degree of Bachelor of Veterinary Science, and arrangements have been made for the introduction of the degree course from the beginning of the academic year 1936-37.

(h) Hostel, health and athletics.

22. On an average 61 students including 19 non-Presidency students resided in the college hostel during the year. As usual there were two messes, one vegetarian and the other non-vegetarian run under the supervision of the warden. Proper facilities were provided by way of indoor games, newspapers, magazines, etc., for the recreation of the students. The health and discipline of the students were satisfactory. Their athletic activities were also good.

(ii) Hospital.

23. During the year under report, the college hospital was in charge of Mr. K. S. Nair, Lecturer in Surgery. As compared with the previous year, there has been a steady increase in the total number of admissions and in the daily average attendance. The figures for the two years 1934-35 and 1935-36 being 6,883 and 7,444 and 91.83 and 105.91, respectively. There has also been an appreciable increase in the number of operations performed during the year, the figures being 594 during 1934-35 and 1,007

during 1935-36. The number of castrations performed during the year was 39 against 44 of the previous year.

24. The X-ray apparatus sanctioned in G.O. Ms. No. 426, Development, dated 28th March 1934, was obtained and installed during the year in the College laboratory. A Veterinary Assistant Surgeon, who has undergone training in Radiology both at the Government Barnard Institute of Radiology and the X-ray Department of the Government Rayapuram Hospital, was in charge of this section which commenced work from 1st October 1935. Since the installation of the apparatus, 15 canines, 7 equines and 1 bovine were X-rayed and in addition, some skiagrams were also taken for demonstration purposes. Certain fractures, with and without displacement of bones, the presence of a stone in the bladder and bony growths of joints were among the condition diagnosed with the aid of the X-ray apparatus. The necessary treatment was given to the cases.

25. The Ultra-Violet Ray apparatus which was installed in the surgical block was moved to the laboratory and placed adjacent to the X-ray apparatus. Of the 10 cases treated with Ultra-Violet Rays during the year, 4 were positive for Demodex-folliculorum, one had typical lesions simulating Demodex-folliculorum, one was a case of rickets, 3 cases of eczema and one debility. The treatment in 3 of these cases was successful and 5 of the remaining cases, discontinued treatment.

26. A fulltime Veterinary Assistant Surgeon was placed in charge of the branch Veterinary dispensary at Rayapuram towards the end of August 1935 and the dispensary worked from that date both in the mornings and evenings. The daily average attendance at the dispensary varied from 40.85 in the previous year to 44.33 in the year under report. Thus the institution continues to maintain its popularity in the locality. Forty-nine cases from this dispensary were transferred to the Madras Veterinary College Hospital during the year including four cases suspected for rabies.

(iii) Shoeing forge.

27. One thousand and sixteen horses were shod and the shoes of 51 were repaired during the year as compared with 935 and 68, respectively, for the previous year. During the year, the forge showed a profit of Rs. 907-11-3 as against Rs. 864-15-5 of the previous year. As usual the students were provided with facilities for receiving practical instruction in shoeing. With the approval of Government, a candidate from Cochin Government was given training in farriery at the College forge for three months during the year on payment of fees at Rs. 10 per mensem.

(iv) Fees.

28. Though the number of cases treated showed an appreciable increase during the year, there was a slight decrease in the amount of fees realized which is due to the admission of a large number of free cases. This increase in the number of free cases shows clearly that Veterinary treatment is more widely appreciated by the poorer classes of people than was formerly the case. The number of

cases admitted and the fees realized during the three years from 1933-34 to 1935-36 are shown below :—

		Number of cases admitted.	Fees realized.		
			RS.	A.	P.
1933-34	.. ..	5,909	4,025	6	0
1934-35	.. ..	6,883	4,087	9	0
1935-36	.. ..	7,444	4,021	8	0

29. Government in their Order No. 1444, Development, dated 17th October 1935, approved the issue of a revised set of rules for the Madras Veterinary College Hospital and ordered that the treatment and feeding of all suspected cases of rabies, so long as they are detained in the hospital for observation, should be free in case the owner is either unwilling or unable to pay the charges.

30. The following scale of fees approved in G.O. Ms. No. 933, Development, dated 2nd July 1935, for taking X-ray photographs from such owners of animals as are in receipt of an income of Rs. 100 per mensem and above, was given effect to from 1st October 1935 :—

Horses, Rs. 10.

Cattle, Rs. 5.

Dogs and cats, Rs. 5.

Other animals. At rates to be fixed by the Principal, Madras Veterinary College, in each case.

(v) *Laboratory.*

31. Mr. M. Anantnarayan Rao, Lecturer in Parasitology, held charge of the Parasitology section throughout the year and continued to supervise the work of the laboratory. Mr. A. K. Mitra, Acting Lecturer in Pathology and Bacteriology, was in charge of the Pathology section throughout the year except for a short period, i.e., from 3rd April 1935 to 9th July 1935 when he attended, on deputation, the post-graduate course at Muktesar.

32. (a) *Pathology, Bacteriology and Parasitology sections.*—The number of specimens received and examined in the different sections of the laboratory including the clinical laboratory was 11,574 as detailed in the subjoined table. This excludes the specimens examined in connexion with post-mortems, research and class work :—

	Pathology and Bacteriology section.	Parasitology section.	Clinical laboratory.	Total.
From the staff of the Civil Veterinary Department	1,714	4,068	..	5,782
From the wards of the Madras Veterinary College hospital	193	..	5,015	5,208
From dairy and other farms	64	..	..	64
„ Corporation of Madras	23	..	207	230
„ Agricultural Department	13	36	..	49
„ Indian States	10	11	..	21
„ Coorg	36	50	..	86
„ Forest Department	2	4	..	6
„ Veterinary Investigation Officer, Madras	25	90	..	115
„ Hunt club	1	..	..	1
„ Federated Malay States	..	2	..	2
„ Other sources	..	10	..	10
Grand total	2,081	4,271	5,222	11,574

33. Out of the 2,081 specimens examined in the Pathology section during this year (as against 1,896 of the previous year) 588, of which 344 were bacteriological and 244 were pathological conditions were confirmed for various diseases suspected.

34. Of the 4,271 specimens examined in the Parasitology section during the year under report (as against 4,759 of the previous year), 3,918 were confirmed for various diseases suspected. The decrease in the number of specimens examined in this section was due to the fact that specimens from the college wards and Corporation Cattle Depots were dealt with by the clinical laboratory in order to give the staff in this section more time for sustained work connected with routine and research.

35. In addition to the above routine work in the laboratory, five samples of industrial material consisting of hides, hide fleshings, dried cow guts, etc., were examined for Anthrax of which one was found infected.

36. Interesting specimens examined which deserve special mention are :—

Johne's disease.—Bowel washings from two cows in the Agricultural Farm, Coimbatore, and two cows in the Hosur Cattle Farm received for microscopical examination revealed organisms indistinguishable from those of *Johne's disease*.

Contagious abortion.—Ten samples of sera from cows belonging to the Agricultural farms in this Presidency were received for testing for contagious abortion. They were tested against the strains of *B. abortus* (Bang.) received from the Imperial Institute of Veterinary Research, Muktesar and the Government Veterinary Surgeon, Ceylon, with negative results.

Rabies.—The total number of brains examined for this disease is 69 as detailed below :—

			Positive.	Inconclusive.
Equines	..	..	..	..
Bovines	..	..	3	..
Canines	..	..	34	24
Felines	..	..	1	2
Ovines	..	..	2	1
Others	..	..	1 (deer).	1 (monkey).
Total ..			41	28

Streptothrix.—*Streptothrix* infection was detected in a piece of morbid tissue removed from the udder of a she-buffalo of Tenali and from the lesion on the tongue and in the growth from the intermaxillary space in two bullocks of Chidambaram and Ranipet, respectively. In addition, a variety of acid-fast streptothrix was found in the abscesses in the lungs, liver and other organs of a dog that died of pneumonia.

Neoplasms.—A number of specimens were examined of which the following are of some interest:—

Carcinoma.—Growth from the nostrils of a pony received from Saidapet.

Growth from the beak of a turkey received from Udipi.

Growth from the shoulder of a mare received from Tiruchengode.

Round-celled sarcoma.—Growth from the lip of a dog received from Ootacamund.

From the parasites received from the staff of the department from different parts of the Presidency, the following were added to the Parasitology museum:—

(1) *Dictyocaulus viviparus*.

(2) *Dipetalonema* species from the peritoneum of a dog.

Post-mortem examinations.—Ninety-six post-mortem examinations were conducted during the year on requisition from the wards. This number does not include the post-mortem examinations conducted on laboratory animals used for experiments and biological tests, etc.

Autogenous vaccines, etc.—Autogenous vaccines were prepared and supplied in 23 cases during the year. The results of treatment with the vaccines were encouraging. In 248 cases Bovine Lymphangitis vaccine was supplied and the results of treatment are satisfactory.

Biological tests.—Whenever the microscope failed, biological tests were conducted with materials received from cases suspected for Blackquarter, Anthrax, Hæmorrhagic Septicæmia, etc. The number of such tests conducted are as follows:—

	Positive.	Negative.
Blackquarter.. ..	19	38
Anthrax	4	27
Hæmorrhagic Septicæmia ..	12	53
Pseudo fowlpest	3	11

Urine Hormone.—Two hundred and forty-eight ounces of Urine Hormone from pregnant cows were prepared and supplied for use. In all 10 bulls and 14 cows were treated with the Hormone, but information regarding the effect of treatment was received only in respect of five bulls and five cows and appears to be encouraging.

37. The different kinds of media required by the Veterinary Investigation Officer, Madras, were supplied on requisition during the year.

38. (b) *Physiology laboratory*.—Mr. M. A. Rangaswami Ayyar, Lecturer in Physiology, was in charge of this laboratory throughout the year. Three hundred and seventy-four specimens received from the College wards, Corporation cattle depots and the staff of the department, were examined during the year as against 344 in

the previous year. The materials received comprised 368 samples of urine, 3 of milk, 1 of vomited matter from a cat, 1 of saliva from a bullock and 1 of ascitic fluid from a calf.

39. The following abnormal constituents were present in 194 samples of urine:—

	Equines.	Bovines.	Ovines.	Canines.	Total.
Albumin	3	20	..	113	136
Sugar	..	1	..	7	8
Blood	3	16	..	6	25
Bile salts	..	..	..	2	2
„ pigments	4	..	..	18	22
Acetone	..	1	..	..	1
Total	10	38	..	146	194

40. With a view to ascertain if diagnosis can be assisted in tick fever in dogs by the examination of urine, a systematic examination of samples of urine was made. It was found that the abnormal constituents varied considerably, depending apparently upon the severity of the attack, and in some positive cases no abnormal constituents were detected. It was therefore, concluded that the examination of urine could not be relied upon in such conditions.

41. (c) *Anatomy section*.—Mr. H. N. Chelva Ayyangar, Lecturer in Anatomy, was in charge of this section during the year under report. Fifty-five bovines were destroyed and injected with preservatives during the year for the use of the class for dissections, etc. Eighteen specimens of fractures and bony diseases were received during the year for examination and report after dissection and such of them as were of sufficient interest were transferred to the museum of the surgical section.

During the year a specimen of endometrium with the chorion *in situ* obtained from the slaughter-house from a pregnant cow was supplied on requisition to the Director, Imperial Institute of Veterinary Research, Muktesar, for histological study.

42. (d) *Pharmacology section*.—Mr. M. Sundaranathan was in charge of this section and 18,177 prescriptions in all were dispensed in the pharmacy during the year.

43. (e) *Clinical laboratory*.—Mr. L. S. Parameswara Ayyar, Laboratory Assistant, was in charge of this laboratory throughout the year. Specimens such as blood smears, fæces and scrapings received from the different wards of the College hospital and also from the different cattle depots of the Corporation of Madras were examined and reported upon.

The final year and refresher course students attended this laboratory and acquainted themselves with the methods adopted for the examination of specimens. The materials received and the facilities provided for such practical study to the students were ample.

III.—SERUM INSTITUTE.

44. (a) *Staff*.—M.R.Ry. Rao Sahib K. Kailasam Ayyar Avargal held charge of the Institute throughout the year except during the period from 1st August 1935 to 18th November 1935 and from 19th November 1935 to 25th December 1935 when Messrs. R. Narasinga Rao and C. S. Murti, respectively, were in charge.

45. (b) *Accommodation and equipment*.—A type-design post-mortem shed was constructed and made available for use during the year. An important sanitary improvement was effected during the year by the construction of a shed for the storage of manure, of a type similar to that in the Madras Veterinary College. A trench to hold anti-septic lotion for cattle to wade through before they enter the bleeding room was constructed in front of the serum bleeding room. Various other minor improvements to the laboratory buildings were also carried out during the year.

The present accommodation is far from sufficient for the growing needs of this Institute, and with a view to provide for future expansion, the adjoining land on the eastern side, which was formerly under the control of the Labour Department, was transferred to this institute and the necessary improvements are being carried out.

46. (c) *Livestock and fodder*.—The table given below shows the number of animals purchased, the number that died and the number of discontinued animals that were disposed of during the year:—

	Purchased.	Died.	Disposed of.
Adult he-buffaloes ..	645	41	503
Buffalo-calves ..	420	225	272
Sheep and goats ..	302	282	7

Of the discontinued animals, 56 calves were supplied to the Madras Veterinary College free of cost for use in dissection classes and laboratory. All livestock and fodder were purchased as usual on contract under the tender system.

47. (d) *Serum section—Anti-rinderpest serum*.—During the year 591 adult he-buffaloes were used as serum makers and 81 calves as serum testers. The stock of anti-rinderpest serum on hand at the beginning of the year was 3,682 bottles, each bottle containing 50 unit doses of 5 c.c. each. Twenty-two thousand and thirty-six bottles or 1,101,800 unit doses comprising 24 brews were manufactured and completed during the year as against 1,335,250 unit doses during the previous year. All the brews were of the required standard quality and the reports on the inoculations performed in the field with the serum showed satisfactory results.

The total quantity of anti-rinderpest serum issued including the quantity used in the institute for testing purposes, amounted to 22,716 bottles or 1,135,800 unit doses, the quantity issued during the previous year being 1,206,900 doses. This decrease was

anticipated and further decrease is bound to occur in the future in proportion to the extension of the goat virus alone method of inoculation as a prophylactic against rinderpest.

A quantity of 30,000 doses of anti-rinderpest serum was sold to His Exalted Highness the Nizam's Civil Veterinary Department, Hyderabad, at one anna six pies per dose, being the rate prescribed by Government.

48. *Anti-hæmorrhagic septicæmia serum*.—Government sanctioned the experimental manufacture of anti-hæmorrhagic septicæmia serum during the year, and it was stated that, if the experiments were successful, 25,000 doses of the serum should be manufactured before the close of the year.

Accordingly the experiments were commenced in November 1935. Seed material of *Pasteurella Bovisepticus*, 22nd sub-culture of a Madras strain, was obtained from the Principal, Madras Veterinary College. Two more cultures of this organism were made on blood agar slopes at the institute and the 24th sub-culture, 48 hours old growth, was washed off with 5 c.c. of sterile broth and injected into a calf, which died of typical hæmorrhagic septicæmia within 45 hours after injection.

As this process involved considerable risk in the matter of immunization of animals for serum production, it was decided to substitute killed cultures to begin with. Accordingly a 48-hour old broth culture of *Pasteurella bovissepticus* was killed in a water bath at 58° C. for half an hour and 45 c.c. of it was injected into a susceptible calf, which survived after exhibiting a thermal reaction. A fortnight later this calf and another control calf were each given subcutaneously 45 c.c. of a 48-hour old live broth culture of hæmorrhagic septicæmia organisms. While the former did not show any perceptible reaction, the latter succumbed to typical hæmorrhagic septicæmia in about 43 hours after injection.

As this method held out hopes of success, it was decided to adopt the technique detailed below for the immunization of hæmorrhagic septicæmia serum makers. Healthy adult buffaloes are injected subcutaneously with 50 c.c. of a 48-hour old broth culture of hæmorrhagic septicæmia heated in a water bath at 58° C. for half an hour, and in order to obviate a fatal soil infection before immunity is established, a dose of anti-serum is also given. Nine days later each of these animals is given 100 c.c. of a 48-hour old live culture of *Pasteurella bovissepticus* in broth. Nine days after the injection of the live culture the animal is bled for serum and this process is repeated at nine day intervals until five bleedings are taken. The serum from each individual bleeding and that of the whole brew is culturally tested for sterility, and the safety test of the whole brew is done biologically on buffalo-calves. The potency of each brew of serum is determined by the agglutination test.

The oxalate method is employed for separating the serum as in the case of anti-rinderpest serum.

Thus 1,960 unit doses of 15 c.c. each of anti-hæmorrhagic septicæmia serum were manufactured. After due laboratory tests the serum was issued for field tests in actual outbreaks. The reports received from the District Veterinary Officers on the use of this serum were very favourable.

The experimental serum having proved quite satisfactory, regular production was undertaken, and before the close of the year, another quantity of 26,060 unit doses of anti-hæmorrhagic septicæmia serum was manufactured. In this connexion it is necessary to mention that the work had to be proceeded with under somewhat trying conditions for want of proper shelter and segregation for anti-hæmorrhagic septicæmia serum makers.

The total number of animals used for the manufacture is 56 adult he-buffaloes and 18 calves.

49. (e) *Virus section—Bull virus.*—There was a fall in the demand during the year for bull virus from the staff of the department as compared with the figures for 1934-35, but this was not unforeseen for the reasons stated under the heading 'anti-rinderpest serum'. Three hundred and thirty-eight buffalo-calves were used for this purpose including 76 calves used as controls for the two strains of goat virus in this institute. Of these 3 calves, i.e., 0.9 per cent showed the presence of piroplasma bigeminum in their blood smears, 4 calves, i.e., 1.1 per cent were infected with spirochætes, 7 calves, i.e., 2 per cent revealed the existence of trypanosomes in the blood, 27 calves, i.e., 7.9 per cent harboured microfilaria and 14 calves were non-reactors. Therefore these 55 were found to be unfit for virus drawing. The total mortality, among these virus producers was 214 or 66 per cent.

The quantity of bull virus issued to the staff of the department during the year under report was 151,300 c.c. as against 174,650 of the previous year.

50. *Goat virus.*—On the other hand there was a marked increase in the demand for goat virus during the year. Both the Madras and Muktesar strains were continued. Up to the end of the year 187 passages of the Madras strain and 133 passages of the Muktesar strain had been completed. It is interesting to record that there was no appreciable fall or decline in the virulence of the virus either for ovines or bovines. In addition to the regular controls for the Madras strain of goat virus, separate controls for the Muktesar strain also were instituted from the 108th passage and were continued during the year. The total number of goats used during the year for both the strains was 303. The mortality in goats was 94 per cent. Of the 76 controls maintained for the two strains of rinderpest goat virus, 23 controls or 46 per cent died of typical rinderpest with the local strain and 17 controls or 65 per cent with the Muktesar strain. All the 76 control calves took the infection and showed varying degrees of reaction.

The quantity of goat virus supplied to the staff of the department during the year under report was 61,450 c.c. as against 39,800 c.c. of the previous year.

(f) *Laboratory work (routine).*

51. *Microscopic work.*—The number of specimens examined under the microscope was 12,704 blood smears and 9 fæces, and of these 6,303 proved positive as detailed below:—

Blood smears.—Theileria 6,080; Piroplasma bigeminum 7; Trypanosomes 41; Microfilaria 100; Spirochætes 17; Theileria and Trypanosomes 1; Theileria and Microfilaria 3; Theileria and Piroplasms 1; Theileria and Spirochætes 2; Hæmorrhagic septicæmia organisms 30; Rod-shaped organisms 4; Staphylococci 1; Cocci and Bipolar organisms 1; Bacillus subtilis 4; Plasmodium bubalis 11.

Fæces—Coccidia 9.

52. *Post mortem.*—Post mortem examinations were conducted on 521 carcasses of animals that died in the Institute. The following is the detailed list of parasitic infections recorded:—

(1) Echinococcal cysts	8
(2) Sarcocystis Blanchardi	36
(3) Paramphistomum Explanatum	5
(4) Fasciolæ	4
(5) Echinococcal cysts and Sarcocystis Blanchardi.	6
(6) Sarcocystis Blanchardi and Paramphistomum.	12
(7) Echinococcal cysts, Paramphistomums and Sarcocystis Blanchardi	1
Total	72

53. *Blood grouping.*—Five hundred and seventy-three experiments on blood grouping were carried out during the year. Six buffaloes were selected and cross-agglutination tests with their serum and red-blood corpuscles were made with negative results. The serum from the above six animals was tried with the red-blood corpuscles of other serum makers. Out of the total of 573 experiments done, only nine proved positive as detailed below:—

(1) Serum of buffalo No.	1	with red blood corpuscles of buffalo No.	139
(2) Do.	6	Do.	141 weak.
(3) Do.	4	Do.	109
(4) Do.	3	Do.	201
(5) Do.	2	Do.	175
(6) Do.	2	Do.	155
(7) Do.	2	Do.	190
(8) Do.	2	Do.	224
(9) Do.	2	Do.	265

The object of this experiment, as stated in the previous report, is to determine the existence of blood-groups in buffaloes as in the case of human beings, and to ascertain the range of the heterologous and homologous series. The tests so far conducted have

clearly proved the existence of different groups, but it has not been possible to classify them on the lines of the human groups for want of standard serum.

(g) *Laboratory work (research).*

54. *Hæmorrhagic Septicæmia*.—One-tenth part of the saline washings of one blood agar slope of the 25th sub-culture of hæmorrhagic septicæmia kept at room temperature for a month was injected subcutaneously into a susceptible buffalo-calf to see whether attenuation in the virulence of the organism had taken place. This dose did not provoke any reaction in the calf. It should be stated that the growth in the tube was rather scanty.

Six days later this calf and a fresh control calf were each given 50 c.c. (38th sub-culture) of 48 hours old live broth culture of hæmorrhagic septicæmia organisms. Both of them died of typical hæmorrhagic septicæmia within 36 hours, the natural inference being that the antigenic factor in the initial dose given to the first calf was insufficient for infection or immunity. It also showed that the hæmorrhagic septicæmia organisms showed no signs of becoming avirulent at the 38th sub-culture.

That the hæmorrhagic septicæmia cultures (Madras strain) had not become avirulent was further confirmed by the death within 36 hours of a calf that received half the quantity (3 c.c.) of saline washings of one blood agar slope 29th sub-culture kept at room temperature for a month.

Casualties occurred among serum makers after receiving the killed cultures alone and a few died also after receiving live cultures nine days after the initial dose of killed culture. The former gives some indication of the risk in using vaccine alone where soil infection is present and the latter shows that the animals had not acquired sufficient immunity to withstand a massive dose of live culture.

In order to ascertain whether the animals immunized with the Madras strain of *Pasteurella bovissepticus* would be able to resist a dose of live culture of Muktesar strain of *Pasteurella bovissepticus*, half of the saline washings of a 48 hour old live growth on a blood agar slope of the 13th sub-culture of the Muktesar strain of the organism was injected subcutaneously into each of the two buffalo-calves previously immunized with the Madras strain.

They showed no perceptible reaction proving thereby that there is a definite immunological relationship between these two strains of organism.

Immunity tests were carried out on two calves (previously used for serum production) on the 73rd and 76th days, respectively, with live cultures of hæmorrhagic septicæmia organisms. Both the calves remained well without manifesting any perceptible reaction.

It is therefore evident that the calves carried a solid immunity at the end of the periods stated above.

The enclosure, in which the hæmorrhagic septicæmia serum makers were kept, was badly infected with hæmorrhagic septicæmia organisms and deaths occurred among the vaccinated animals during the negative phase. This called for a safer method of immunizing the serum makers as already stated. It is hoped that with the improvements now made, these deaths will be eliminated.

A case of protein shock was noticed during the course of immunization of serum makers. At 9 a.m. on 26th January 1936 a lot of 21 animals was immunized with 100 c.c. of killed 48 hours old broth culture for each. One of these exhibited very distressing symptoms of protein shock immediately after receiving the vaccine and died at 10 a.m. the same day.

55. *Rinderpest spleen tissue virus*.—Experiments with the spleen tissue virus obtained from goats are in progress and trials are being conducted to find out a suitable vehicle in which the material may be suspended in the form of an emulsion for sending out to the field for use.

56. *Viability of goat spleen tissue virus*.—Further experiments were conducted during the year and it was found that the goat spleen tissue virus kept in cold storage for a period of 14 days or less was found to provoke a good reaction when put into susceptible animals. Beyond this period even if it exceeded by a day, the virus did not provoke any reaction in the susceptible animals. When such cases were tested subsequently with a dose of bull virus, a good reaction was manifested with all clinical symptoms and post-mortem lesions were typical of rinderpest.

Some experiments were conducted in order to find out the viability of goat blood virus when diluted with normal saline and kept in cold storage and then exposed to room temperature for varying periods.

Five c.c. of diluted goat blood virus with normal saline solution to a strength of 1:10 was injected one hour after preparation into a buffalo-calf and a goat. Both of them reacted showing typical clinical symptoms and died of rinderpest.

The next trial was with the same dilution 1:10 but kept at the cold storage for two days and then exposed to room temperature for two days. This was inoculated into a buffalo-calf and a goat. There was typical reaction in both the animals and both recovered. There was no reaction when tested with fresh bull virus subsequently.

The same dilution of goat blood virus with normal saline solution but kept in the cold storage for two days and exposed to room temperature for three days, was inoculated subcutaneously into a buffalo-calf and a goat. The goat died of rinderpest on the 10th

day, but the calf did not react; when tested with a dose of bull virus, the calf showed a good temperature reaction followed by vesicles and diarrhoea and recovered. Another calf was injected with a similar dilution kept under the same conditions. This calf also showed no evidence of reaction, but when a dose of bull virus was injected subcutaneously, a typical reaction followed and the animal recovered finally.

Again a buffalo-calf and a goat were inoculated subcutaneously with 1:10 dilution of goat blood virus with normal saline solution kept in cold storage for four days. Both of them reacted showing a typical rinderpest reaction and died of rinderpest.

It is therefore observed that goat blood virus diluted 1:10 with normal saline solution does not seem to provoke any reaction in the susceptible animals if kept outside the cold storage for more than two days.

57. *Erratic reactions in goats and calves.*—During the course of observations on the virus calves it was noticed several times that without the manifestation of a temperature reaction, some of the virus producers died. Blood from these doubtful reactors while alive was, however, found infective and the post mortem examination revealed very severe and typical lesions. Such cases of erratic reactions are met with in goats also. To make sure whether the blood from goats showing such doubtful reactions was infective during the rinderpest syndrome, further inoculations were made.

Blood from a goat of doubtful reaction was drawn on the fourth day after inoculation with goat virus and inoculated subcutaneously into a calf on the same day. There was a good thermal reaction in this calf with the other clinical symptoms of rinderpest and it recovered.

Blood drawn from another goat of doubtful reaction on the 5th day after inoculation was passaged into a calf. The temperature curve of the calf showed a typical rinderpest reaction and it died on the ninth day. Post mortem lesions were positive for rinderpest. Blood was drawn again from the same goat on the ninth day after inoculation, i.e., four days afterwards and inoculated subcutaneously into a buffalo calf. The calf reacted to rinderpest showing a high temperature and severe diarrhoea, but it recovered.

Blood was drawn from a third goat of doubtful reaction on the fifth day after inoculation and put into a calf. This calf also had a good rinderpest reaction and succumbed. Post mortem lesions confirmed the disease.

The same procedure was adopted in the case of yet another goat of doubtful reaction and the blood was injected subcutaneously into a calf. This calf also died after having a very high temperature, vesicles and diarrhoea and the post mortem lesions were typical of rinderpest.

It is clearly seen from the cases cited above that in goats, an erratic or symptomless reaction to rinderpest is not uncommon and the blood of so called doubtful reactors is capable of transmitting a fatal infection to susceptible animals.

58. *Microfilaria.*—An attempt was made to find out if the microfilaria usually met with in the virus calves could continue to live outside the animal body in the presence of blood and also to test the finding that the microfilaria could not be communicated by direct inoculation of blood from one animal to another.

A buffalo-calf No. 301, which was inoculated on 21st February 1936 with rinderpest bull virus brew Nos. 289 and 290, revealed the presence of microfilaria in the blood smears made on 25th February 1936. The thermal reaction to rinderpest was satisfactory and synchronous with the marked and abrupt rise of temperature on 25th February 1936, microfilaria also appeared in the peripheral blood. This calf later on developed other diagnostic symptoms of rinderpest and died on the 11th day after inoculation. It is necessary to mention here that the bull virus bearing brews Nos. 289 and 290 was drawn from buffalo-calves which were free from microfilaria. The donors of virus to these calves were also free from this organism. A small quantity of blood was drawn from the calf on 26th February 1936, i.e., 5th day after inoculation, defibrinated, bottled and stored up in the cold storage in the usual way. Wet and dry smears were made from the blood daily for ten days and examined for the presence of microfilaria, but no microfilaria could be detected in them. The same blood was inoculated immediately after drawing into a buffalo-calf No. 308 and the blood smears from this latter calf were examined daily both morning and evening for the existence of microfilaria, but here again no microfilaria could be detected in the smears, although this calf reacted with a good thermal reaction followed by very severe diarrhoea and finally recovered.

Buffalo-calf No. 318 was inoculated subcutaneously with virus brew Nos. 303 and 304 on 12th March 1936. On 13th March 1936 evening, the blood smears from this calf showed microfilaria. The previous donors of virus in this series were also free from microfilaria. A small quantity of blood was drawn from this calf No. 318 on 14th March 1936 evening, i.e., just 48 hours after inoculation, and passaged immediately into a buffalo-calf No. 320 and some more blood was drawn, defibrinated and kept in the cold storage. Wet and dry blood smears from the blood in the bottles were examined daily for several days, but no microfilaria were detected. Calf No. 320 which received the infected blood, reacted to rinderpest showing typical symptoms and died on the 9th day after inoculation. Post-mortem findings were typical of rinderpest. The blood smears taken from this calf No. 320, daily both morning and evening, were negative for microfilaria. Calf No. 318 also died on the 10th day after inoculation showing a good rinderpest reaction and post-mortem confirmed typical rinderpest.

These experiments go to show that microfilaria cannot be directly communicated by blood inoculation from animal to animal and that microfilaria seem to disappear from the blood from the day following that on which the blood is drawn and kept in cold storage.

59. *Antimonium Potassium Tartaratum*.—The practice of using antimonium potassium tartaratum outlined in previous year's report was continued during the year as shown below :—

Year.	Trypano- somes.	Piropla- sms.	Micro- filaria.	Piroplasma Bige- minum and Spiro- chaetes.	Spiro- chaetes.
1934-55	..	0.32 per cent.	6.4 per cent.	0.32 per cent.	1.2 per cent.
1935-36	2 per cent.	0.9 per cent.	7.9 per cent.	..	1.1 per cent.

(h) *Other Sera and Vaccines.*

60. There was an all-round increase in the demand for other sera and vaccines as compared with the issues of the previous year, except under fowl cholera serum, fowl cholera vaccine and mallein I.D.P. The inference to be drawn from this is that with rinderpest under better control, the staff are able to pay more attention to other diseases.

Two new products known as fowlpox vaccine and equine abortion vaccine were introduced during the year by the Imperial Institute of Veterinary Research, Muktesar. 'Wellcome' brand anti-distemper serum, a product of Burroughs Wellcome & Co. was also stocked in this institute for supply to the staff of the department.

IV.—INVESTIGATION AND RESEARCH.

(a) *Reduction in dosage of serum for rinderpest inoculations.*

61. The Government while reviewing the report of the Special Rinderpest Officer, Madras, ordered that experiments should be conducted by departmental officers to determine the minimum dose of anti-rinderpest serum required for protecting cattle by the Serum Simultaneous method. The dosage of serum used in previous years was 10 c.c. per 100 lb. body weight. As a result of the investigations carried out on this point during the year it has been possible to reduce the dose to 6 c.c. per 100 lb. body weight for cattle and 8 c.c. per 100 lb. in the case of buffaloes with a minimum of 25 c.c. or 30 c.c. for cattle or buffaloes respectively. This dose has been adopted as a routine in all the 'plains' areas of the Presidency except in the districts of Malabar, South Kanara, Trichinopoly and Tanjore as the District Veterinary Officers concerned reported that a reduction of the dose was not possible.

The number of Serum-Simultaneous inoculations in cattle done with reduced doses during the year was 98,801, and the saving in serum thereby effected is estimated at 296,403 doses of 5 c.c. Assuming the value of the serum to be one anna per unit dose, the

savings effected would be about Rs. 18,525. The Serum Simultaneous method of protection is used in the control of outbreaks by virtue of the immediate protection it affords and because it provides an immediate ring of protected cattle round the scene of outbreak.

(b) *Goat-virus vaccinations.*

62. The use of goat's blood virus alone for the protection of cattle against rinderpest was further extended during the year 1935-36 and the subordinate staff of seven districts comprising the three circles, Madura, Rajahmundry and Vellore were permitted, with the approval of Government, to practise this method of protecting cattle in unaffected areas. This practice was later on extended to the Coimbatore district also. The number of animals protected with goat's blood virus alone during the year was 61,114 as compared with 32,911 during the previous year. Eighty-eight animals, i.e., .1 per cent among the vaccinated have been reported to have died as a result of the severe reactions set up by the vaccine. This mortality has occurred mostly among buffaloes which class of animals has been observed to be less resistant to the effects of the vaccine. Though the percentage of mortality is negligible, the method cannot be said to be so popular with the ryots as the Serum-Simultaneous method owing to a larger percentage of animals being incapacitated for work for a few days after the vaccination. The question of introducing a milder and more suitable product in substitution of goat's blood virus is, therefore, under consideration and other methods are now under trial. An attempt was made in the Kistna district to use the virus alone method in actual outbreaks of rinderpest as is being done in other Provinces, but it was given up as there was a tendency on the part of the ryots to attribute deaths caused by naturally contracted disease to the vaccine used on the animals.

The question has at times been raised as to whether in the absence of the disease, animals which react to an injection of goat virus can transmit the disease to other susceptible cattle and so act as fresh centres of infection. During the past three years the goat's blood virus method of vaccination has been practised mainly in unaffected villages of this Province and over 100,000 cattle have been thus protected, and only three instances of such infections have so far been recorded. The first was in a village in the Vizagapatam district where 723 cattle other than buffaloes were vaccinated and two unvaccinated cattle are stated to have died as a result of infection. In another village in the same district where 112 animals were vaccinated with goat's blood virus alone, 6 unvaccinated animals showed the disease and one (a buffalo) died. Similarly in the Madanapalle circle, a few buffaloes are reported to have contracted the disease from reacting animals though none of them died. The reasons for such infections have not been investigated but the percentage of visible reactions among the inoculated recorded in the first two villages referred to were unusually high, viz., 44 per cent and 81.25 per cent. It is possible that this is due

to an unusually high susceptibility, as there is no reason to suppose any difference in the virus. The figures and the extension of infection to uninoculated animals, while disquieting are not considered to be serious enough to warrant special measures, but the position will be carefully watched.

(c) *Nasal granuloma*—‘*Nasal schistosomiasis*’ or ‘*Snoring disease*’ of cattle.

63. With the spread of knowledge concerning this disease and the comparative ease with which the affection can be treated, a greater interest on the part of owners with regard to this disease has been noticed. Affected animals are now freely offered for treatment and it has consequently been found that this affection is far more prevalent than was formerly supposed to be the case. The returns from the staff show that the disease prevails in all but four districts of the Presidency. As these four districts do not differ from other infested districts in any way, it is believed that the affection does occur in them also and that it will be met with in the near future in them also. The Veterinary Assistant Surgeon posted for special duty in this connexion in the Chittoor district during the year 1934-35 continued to work in the same area during the year under report. He treated 602 animals in seven villages chosen in consideration of the heavy incidence of the disease in them. The results have shown that the drug ‘Tartar Emetic’ though cheap and effective, requires several injections over a period of at least five weeks to effect a cure, and that the number of animals offered for a complete course of treatment were less than half the total number treated. In order, therefore, to meet the need of the ryots for a shorter course of treatment without at the same time impairing its efficiency, a series of experiments were conducted in the Madras Veterinary College and the results of these are given elsewhere [sub-section (g) below].

Further investigations on the subject are in progress.

(d) *Warbles*.

64. A survey of the prevalence and the incidence of ‘Warbles’ in this Presidency was undertaken during the year at the instance of the Imperial Council of Agricultural Research, and the result of enquiry which showed that the parasite did not exist was communicated to that Council.

(e) *Sterility in cattle and production of milk*.

65. In addition to the items mentioned above, the department has been carrying out in collaboration with the Imperial Council of Agricultural Research, investigations into (1) causes of sterility among cattle, and (2) cost of production of milk in cities of this Presidency. The data collected by the department will be forwarded to the Imperial Council of Agricultural Research.

(f) *Veterinary diseases investigation*.

66. Mr. G. R. Viswanathan continued to hold the Veterinary Investigation Officer’s post throughout the year. He was on tour

for 206 days and visited 333 villages during the course of his investigations.

The investigation into the heavy mortality in bovines from hæmorrhagic septicæmia and blackquarter was taken up by the Veterinary Investigation Officer for the first three months during the year with reference to the orders of Government in their review on the Annual Administration report of this department for the year 1933-34 and an exhaustive tour was undertaken in Nellore district and a special study of the conditions in this district was made. Subsequently during the year investigation was undertaken into the various diseases of sheep and goats, chief among them being contagious pleuro-pneumonia, sheepox, and a hitherto undescribed condition resembling ‘strike’ caused apparently by an anærope of the B. Welch type. Numerous other minor conditions also received attention. The findings of these investigations are embodied in the Veterinary Investigation Officer’s report submitted to Government separately.

(g) *Research work at the Madras Veterinary College Laboratory*.

67. The following items of research work were undertaken at the Pathological and Parasitological sections of the Madras Veterinary College Laboratory—

(1) *Bovine Nasal Schistosomiasis*.—Experiments were conducted with a view to standardize a method of treatment in bovine nasal schistosomiasis. Three drugs were given a fair trial on animals suffering from the disease. It was found that Antimony Tartarate gave the best results and at the same time it was the cheapest drug available. Antimony Tartarate in doses of 1.5 grains per 100 lb. body-weight of the animal given daily for six days, or 3 grains injected on alternate days for a week, cleared such cases in the absence of fresh infection. The cost of treating an animal with Antimony Tartarate works out to 1.5 pie for the whole course of treatment.

Antimosan was found to be suitable in the treatment of bovine Nasal Schistosomiasis in doses recommended by the makers, but the cost of treating each animal is over two rupees.

Trypaflavin does not seem to possess any action against Nasal Schistosomes and its continued administration may have a deleterious effect on the liver of the animal treated. A detailed report regarding the above work is under publication.

(2) *Cutaneous Myiasis in animals*.—The item of research on the determination of the kinds of flies concerned in cutaneous myiasis was concluded during the year under report. Four hundred and four specimens consisting of over 4,000 maggots from wounds were received. The

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species of animals from which the maggots were collected are tabulated below:—

Camel ...	...	...	...	...	...	1
Bovines ...	...	...	...	...	...	250
Buffaloes ...	...	...	...	...	...	85
Goats ...	...	...	...	...	...	19
Sheep ...	...	...	...	...	...	2
Equines ...	...	...	...	...	...	22
Canines ...	...	...	...	...	...	21
Fowls ...	...	...	...	...	...	4
Total ...						404

The study of these maggots and the flies that hatched out from some of them, shows that the cause of cutaneous myiasis in animals including fowls is *Chrysomia bezziana*. Only in three samples from bovines, were the maggots of *Lucilia argyricephala* found. The sheep maggot fly (*Lucilia sericata*) does not seem to exist in South India. No species of *Hypoderma* has so far been recovered from indigenous animals of this Presidency. A sample of fresh faeces containing maggots was received in the laboratory with the history that they were passed in the evacuations by a race-horse. The maggots pupated within 24 hours after their arrival and a large number of *Musca nebulo* were hatched out of the puparia. If the history is correct, it would appear that those maggots, which might have been ingested by the horse accidentally with the food, passed through the alimentary canal without any damage to themselves, which is interesting. Professor P. A. Buxton of the London School of Hygiene and Tropical Medicine, confirmed the identification of *C. bezziana* and he was also pleased to send some specimens of *L. sericata* for the laboratory museum in exchange for specimens of *C. bezziana*. The identification of *Musca nebulo* was confirmed by the Government Entomologists at Pusa and Coimbatore.

(3) *Rhinospordiosis*.—This disease was confirmed in a bullock in Calicut and this place is to be added to the list of places where the disease has been discovered in bovines for the first time.

One diseased animal was obtained from Tanjore on 27th January 1936 for the study of this disease and the work connected with it is in progress.

(4) *Parasitic nodules in the liver and lungs of ponies*.—The systematic post-mortem examination of ponies used for the operative surgery class was continued during the year and material collected for study. So far in the sections of many of these nodules, larvæ of nematodes only were encountered. It is interesting to note that the number of nodules in the liver and lungs bore a close relationship to

the number of *Strongylus vulgaris* present in the intestines. It is contemplated that more work on this subject will be done in the ensuing year at the end of which a detailed report will be published.

(5) *Nasal Schistosomiasis and Horn Cancer*.—So far 51 specimens were studied with inconclusive results. This work will be continued during the ensuing year.

(6) *Contagious Pleuro-pneumonia in goats*.—Work on this disease was taken in hand during the year. So far, it has not been possible to infect healthy goats with the morbid material received from the districts. In March 1936 the Veterinary Investigation Officer, Madras, sent to the Laboratory three goats suspected to be suffering from the disease. These were kept under observation for some days and then destroyed. It is interesting to note that each one of them had a circumscribed patch of consolidation in the diaphragmatic lobe of the left lung and the pleura near the lesion was adherent to the thoracic wall. In one goat, the lesion was caseated with some fibrosis round it. The histological examination of this morbid tissue from these animals revealed fibrosis with foreign body giant cells and a heavy infiltration of Eosinophiles. Broncho-pneumonia was also evident.

Attempts to isolate organisms from the material from these goats as well as from that received from the districts have failed so far.

The information concerning the post-mortem findings in goats from the history sheets submitted by the staff in the districts shows that the consolidation in the lungs is in patches, with adhesions of pleura at such foci. It would appear that in none of the goats was the whole lung or lungs or even large parts of lung affected as in true pneumonia. Further, the disease appears to be only regional in its distribution. It seems, therefore, that the disease may be parasitic in its nature which inference is further supported by the fact that the disease was not inoculable nor did any success result in isolation of bacteria from effusions, etc. Further work, it is hoped, will throw more light on this as the investigation is proceeded with.

(h) Anatomical findings.

68. Investigation into the nerve distribution to Levator anguli Scapuli and Rhomboideus and the formation of the phrenic nerve (in the ox) which was taken up during 1934-35, was continued in some more subjects of ruminant type during this year.

Several anatomical deviations were observed and studied and papers on these are being published separately.

V.—CONTAGIOUS DISEASES.

(a) *Registration of mortality and reporting of outbreaks.*

69. In his report on the investigation of rinderpest in this Presidency, the Special Rinderpest Officer stated that instances of delay and even failure on the part of village officers in reporting serious outbreaks of diseases were common and that diseases were often reported under wrong names with the result that the staff of this department could not attend to outbreaks in time to prevent their spread. In order to avoid the mortality among cattle through such omissions on the part of village officers, the staff of this department were instructed to insist on prompt reporting of outbreaks and to ensure correct statistics by verifying wherever and whenever possible the figures for mortality recorded by the village officers. As a result of this, some village officers have become overzealous in the duty of prompt recording and reporting of diseases and in many instances mortality from rinderpest and other deadly diseases has been reported, which have been found by the Veterinary Assistant Surgeons on visiting the affected villages to be stray cases of deaths from ordinary non-contagious diseases. Thus several districts which according to the District Veterinary Officers' returns were free from rinderpest throughout the year have had outbreaks and mortality from the disease shown against them. For example, four outbreaks of rinderpest in the Kurnool district and 11 in the Chittoor and Anantapur districts were reported, while according to the District Veterinary Officers' returns these districts were entirely free from rinderpest during the year. One hundred and twenty-two deaths were reported in another district as due to four outbreaks of foot and mouth disease—a disease not fatal to cattle under ordinary conditions. Mortality from Anthrax has been recorded in many districts but corresponding reports have not been received by the staff of this department. The number of outbreaks of the more fatal contagious diseases reported by the Revenue Department and those recorded by the District Veterinary Officers are shown below:—

				Number of outbreaks reported by the Revenue Department.	Number of outbreaks as recorded by District Veterinary Officers.
Rinderpest	..	..	..	443	398
Anthrax	..	..	..	382	306
Hæmorrhagic septicæmia	..	..	..	924	940
Blackquarter	..	..	..	986	958
Foot and mouth	..	..	..	933	912
Others	..	..	..	28	66
Total ..				3696	3580

It is, however, expected that with the spread of knowledge among ryots and reporting officers regarding diseases of cattle, a greater accuracy in the classification of mortality will be shown in future.

70. In the course of the year, the Government at the instance of the Imperial Council of Agricultural Research, ordered the introduction of a revised form for the maintenance of Cattle Mortality Registers showing separate figures of mortality for cattle, buffaloes, sheep and goats and have also ordered that contagious diseases among sheep and goats should be reported. With the introduction of the new form there is a greater necessity for accuracy in the diagnosis of contagious diseases by the reporting officers. It is not to be expected that village officers can arrive at a correct diagnosis in all cases and statistics may become more inaccurate than at present, but both the new form and the increased zeal of village officers are to be welcomed.

71. As a result of the recommendations of the Special Rinderpest Officer and with a view to enlist the co-operation of other departments, public bodies and private traders in the matter of reporting of outbreaks, Government also ordered during the year that presidents of forest panchayats, village panchayats and irrigation boards may be entrusted with the work of reporting outbreaks of cattle diseases within five miles of their own villages. They also directed that cattle dealers may be requested to make reports of outbreaks that may come to their knowledge. This scheme is being given effect to from 1936-37 and will be tried for two years in the first instance.

(b) *Mortality.*

72. There was a further decline in the total mortality from all contagious diseases of cattle during 1935-36 compared with the previous year's figures, the number of deaths being 23,214 and 26,733, respectively. The mortality from the more fatal diseases was as follows:—

				1934-35.	1935-36.
Rinderpest	..	..	..	3,243	2,752
Anthrax	..	..	..	2,300	2,383
Hæmorrhagic septicæmia	..	..	..	6,825	5,664
Blackquarter	..	..	..	6,416	5,857
Foot and mouth	..	..	..	1,720	976
Others	..	..	..	6,229	5,582
Total ..				26,733	23,214

It is worthy of mention that the number of deaths from rinderpest was the lowest on record for the past 45 years for which period figures are available. The number of outbreak reports of each disease pending attendance at the beginning of the year and

the numbers received and attended are shown in the following statement :—

	Pending on 1st April 1935.	Received during the year.	Attended.	Pending on 31st March 1936.
Rinderpest	7	443	404	..
Anthrax	..	382	277	2
Hæmorrhagic septicæmia ..	1	924	898	5
Blackquarter	13	986	830	16
Foot and mouth	2	933	835	15
Others	..	28	66	5
Total	23	3,696	3,310	43

It will be seen from the above figures that while 3,719 reports were due for attendance during the year, 3,310 of them only were actually attended to and 43 were pending at the end of the year. The remaining 366 represent the number of reports which were lodged or which could not be attended to for want of time or progress reports.

During the previous year, 3,559 reports were received and 3,305 attended.

73. A statement showing the number of outbreaks and deaths from cattle diseases in each district of the Presidency together with similar figures for the two previous years is appended (Appendix V). It will be observed from this statement that there is a fall in mortality during 1935-36 under all the diseases except in the case of Anthrax which has shown a slight increase by 83.

(c) *Bovine diseases.*

74. *Rinderpest*.—As already stated, the incidence of rinderpest during the year was the lowest on record for some years. The disease prevailed mainly in the northern districts of Ganjam, Vizagapatam, Godavari East, Godavari West and Kistna, which accounted for 360 out of the 443 outbreaks reported in the whole Presidency. The District Veterinary Officers in charge of these districts have all reported that the outbreaks were invariably detected among the cattle returning from the grazing areas adjacent to His Exalted Highness the Nizam's Dominions. This confirms the idea that the incidence of the disease is greater in areas where for various reasons, registration and reporting of mortality is difficult. Again, out of the 83 reports received from the districts other than those referred to above, 22 were received from the northern taluks of South Kanara bordering on the Bombay Presidency and Mysore, while only 61 pertain to all the remaining districts put together.

The total number of cattle protected against this disease by all methods during the year is as below :—

	Cattle.	Sheep and goats.
Serum simultaneous method ..	111,610	52
Goat's blood virus alone	61,114	..
Serum alone method	307	..
Total	173,031	52

The policy of the department outlined in the previous year's report, viz., "ringing" of outbreaks of rinderpest by immunizing as many cattle as possible in and around affected villages, was continued during the year under report. The numbers of serum simultaneous inoculations done during the year, i.e., 111,610 among cattle and 52 among sheep and goats, show a slight fall when compared with the previous year's figures, which were 113,732 and 1,398 respectively, but against this a far larger number of goat virus vaccinations has been done during the year, viz., 61,114 as against 32,911 of the previous year. The fall in the number of serum simultaneous inoculations would have been greater had it not been for the frequent outbreaks of rinderpest in the northern districts, while the number of goat virus vaccination would have been correspondingly larger. Inoculations by the serum simultaneous method were undertaken in 315 affected villages and 43,801 animals were protected in them as compared to 47,284 animals in 225 villages during the previous year.

The 307 animals protected by the serum alone method were, as usual, suckling calves and cows in advanced stages of pregnancy in which the serum simultaneous method of inoculation was considered to be unsafe.

75. *Anthrax*.—Three hundred and eighty-two outbreaks of this disease were reported during the year as against 284 of the previous year. This affection is communicable to all animals and man and instances have actually been recorded during the year of some mortality among men through infection contracted from animals dead of the disease. The incidence of Anthrax has, besides, a considerable effect on the trade in hides and skins with foreign countries. It is, therefore, necessary that careful attention should be devoted to the control of this disease. Though efforts are made by this department through propaganda work, to impress upon the ryots the nature of the disease and its importance, it still remains the least regarded of all fatal diseases of cattle.

Out of 382 outbreaks reported, 277 were attended to by the staff, but in the majority of outbreaks it has not been possible to obtain confirmation of the disease by microscopical examination of the blood or by clinical symptoms as the staff could not meet with animals actually suffering at the time of visit. Inoculations by the serum alone method were, however, undertaken in 53 villages and in the City of Madras and in all 7,825 cattle, 2,265 sheep and goats and 18 horses were protected. In the remaining 105 outbreaks, no inoculations were undertaken as the disease had subsided or was believed by the touring staff to be other than Anthrax. The total mortality from Anthrax reported by the village officers was 2,383 but owing to the circumstances described above, it is possible that this number includes a considerable number of deaths through other undetermined causes.

76. *Hæmorrhagic Septicæmia*.—There were 924 outbreaks of this disease with a mortality of 5,664 as compared to 751 outbreaks and 6,825 deaths during the previous year. Eight hundred

and ninety-eight of these were attended to and 5 were carried on to the current year. The incidence was high in the districts of Vizagapatam, Guntur, Nellore, Tanjore and Malabar. The unusually high incidence in the Tanjore district has been ascribed by the District Veterinary Officer to the altered conditions with regard to soil, moisture, etc., brought about by the construction of the Mettur Dam. This statement, however, has to be scrutinized in the light of figures that will become available in future years. In accordance with the orders of Government on the previous administration reports the Veterinary Investigation Officer and the District Veterinary Officers concerned were instructed to enquire into the causes of the persistent high incidence of this disease.

Seventy-two thousand six hundred and one cattle were protected against the disease in 373 villages by the serum alone method and 1,530 of these were protected with the serum manufactured at the Madras Serum Institute as an experimental measure.

77. *Blackquarter*.—This disease continued to prevail in a severe form during the year, the number of reports received being 986 as compared to 970 of the previous year. The mortality, however, was less, i.e., 5,857 compared with 6,416 in the previous year. As usual, the Nellore district suffered heavily with 182 outbreaks and 1,146 deaths. The other districts that showed a comparatively high mortality were Trichinopoly and Salem. Eight hundred and thirty outbreaks were attended to by the staff and 16 were pending attendance at the end of the year. The others were not attended for want of confirmation of the disease by microscopical examination or owing to the staff being occupied with other outbreaks.

The number of animals protected against this disease by the various methods was as follows:—

11,816	cattle in	37	villages by the vaccine alone method.
67,564	do.	289	do. serum with vaccine method.
38,905	do.	171	do. serum alone method.
118,285		497	

The figures for the previous year were—

13,306	cattle in	51	villages with vaccine alone.
44,472	do.	212	do. serum and vaccine.
25,048	do.	135	do. serum alone.
508	do.	4	do. serum and aggressin.
61	do.	1	village with aggressin alone.
83,395		403	

The last two methods of protection were given up during the year 1935-36 in favour of the new methods, i.e., vaccination and sero-vaccination introduced by the Imperial Institute of Veterinary Research, Muktesar, during the previous year.

78. *Foot and mouth disease*.—This disease was less virulent during the year than in the previous year. The number of outbreaks received during the year was 933 as against 1,138 of the previous year. The mortality from this disease also showed a fall, i.e., 976 as against 1,720 in the previous year. The disease being of a comparatively mild nature though highly infectious, there is a tendency on the part of the owners to ignore the occurrence of outbreaks, thus allowing its spread. There is at present no practical means of preventing the disease and the steps taken by the staff in outbreaks of this disease consist only in treating affected cattle and in advising villagers how to treat them. As the number of cattle affected run into hundreds in every outbreak it is not possible to devote much attention to them individually especially when other and more fatal contagious diseases demand the attention of the staff. A small mortality among suckling calves through inability to feed usually occurs and this can usually be avoided by a little more attention on the part of the owners to the sick. It has again to be noted that the outbreaks were frequent in the districts where mass movements of cattle from and to grazing areas take place. Thus, Ganjam showed 156 outbreaks; Guntur 105; Nellore 107 and Kurnool 144. The central and southern districts were comparatively free.

79. *Other contagious diseases of cattle*.—Under this head are classed outbreaks of diseases believed by reporting officers to be contagious and which could not be recognized by them as any of the scheduled diseases. Though only 28 such outbreaks were reported by village officers, the staff of this department has recorded 66 outbreaks of which the more important were from the diseases detailed below. The mortality under this head, i.e., 5,582 also shows a fall over the previous year's figure which was 6,229.

80. *Trypanosomiasis*.—This disease is due to infection of the blood by a parasite indistinguishable from the one which causes 'Surra' in ponies, and owing to the variety of symptoms shown by affected cattle a correct diagnosis is difficult, except by a microscopical examination of the blood. Towards the close of the year a series of outbreaks affecting 21 villages near Madras occurred resulting in 191 deaths of cattle among the 278 attacks recorded. An effective remedy for this disease is fortunately available and the outbreaks have already been controlled. The circumstances responsible for the high mortality from this disease which is ordinarily mild in cattle are under investigation.

81. *Johne's Disease*.—This disease was suspected in two cows belonging to the Agricultural Farm, Coimbatore, and two to the

Hosur farm. The material received for examination at the Madras Veterinary College from all these cases has confirmed the suspicion.

82. *Tuberculosis*.—This is another disease, the prevalence of which usually escapes notice owing to the difficulty in its diagnosis except by tests. Material received in the Madras Veterinary College laboratory from the staff in previous years has shown the existence of the disease. During the year 1935–36 attempts were made to utilize the opportunity afforded to the staff in their inspections of slaughtered animals in municipal abattoirs of collecting data regarding the incidence and distribution of diseases of cattle which could not be detected except by post-mortem examination. The returns received from the staff engaged in meat inspection work show three districts in which instances of beef have been condemned on account of Tuberculosis. These, however, do not seem to have been confirmed by microscopical examination.

83. *Ephemeral Fever and Bovine Lymphangitis* are two other contagious diseases of minor importance which have been reported under 'Other diseases of cattle.'

84. *Rabies*.—The number of cattle protected against rabies during the year was two.

85. *Nasal Schistosomiasis*.—This is a parasitic condition among cattle and as stated in the section "Investigation and research," this disease has been met with in most of the districts of the Presidency. The total number of cases treated for this affection was 2,373.

86. *Warbles*.—In view of the heavy economic loss which the country was incurring as a result of the damage to hides caused by this parasite, an enquiry was conducted by the staff in order to find out if the 'Warble fly' existed in the Province. The result was negative. The parasite has since been reported in the Kurnool district but the report at present lacks confirmation.

87. *Coccidiosis* was commonly met with.

(d) *Equine diseases.*

88. *Surra*.—The mortality among ponies from this disease as reported by the Revenue Department was 24, but the number recorded by the District Veterinary Officers is only two. As the disease is one scheduled under the Glanders and Farcy Act, all cases coming within the knowledge of the staff were dealt with according to the provisions of the Act. Fourteen ponies were thus seized and confirmed after microscopical examination of blood smears. Six of them were treated and two died. Six others were destroyed under the Act and the owners duly compensated.

89. *Strangles*.—A few cases of strangles were met with in the Madras, Madanapalli and Vellore circles but no mortality from this disease has been recorded.

90. *Glanders*.—No cases of glanders were reported during the year. The Veterinary Assistant Surgeon on Glanders duty tested 133 equines in the City of Madras with mallein (128 by subcutaneous and 5 intradermal) but none proved positive for glanders.

91. *Kumri*.—A few cases of this disease were met with during the year.

(e) *Others.*

92. Under this head are classed outbreaks of diseases among sheep, goats and poultry. These were not registered or reported by village officers in the past and the data showing the losses are, therefore, not available. It is, however, thought that the loss among sheep and goats in outbreaks of rinderpest is considerable. Towards the end of the year orders have been issued by Government requiring the village officers to record and report mortality among these classes of animals also. It will, therefore, be possible in future to control the mortality among them.

93. Canine diseases are also classed under 'others' and rabies in dogs is the most important condition to be mentioned. This disease was confirmed in 115 cases and many animals were given anti-rabic treatment at the several Veterinary institutions in the Presidency.

94. *Non-contagious diseases*.—The following are other important conditions dealt with during the year:—

(i) *Chronic Luxation of Patella-Bovines*.—About 800 cases were treated for this disease during the year.

(ii) *Urethral Calculi*.—Thirty-five cases of this disease were treated during the year.

VI.—HOSPITALS AND DISPENSARIES.

95. The total number of Veterinary institutions at the end of the year was 113 including those attached to the Madras Veterinary College and the cattle farms at Coimbatore and Hosur but excluding the private institutions at Vizianagram, Pithapuram, Parlakimedi and Sivaganga as against 112 of the previous year. The increase in the number is due to the opening of a new Veterinary dispensary at Shiyali during the year.

96. There has been an appreciable increase in the total number of in and out-patients treated in the several Veterinary institutions in the Presidency during the year, the figures for the two years 1934–35 and 1935–36 being 242,860 and 253,230, respectively. The number of cases supplied with medicine but not brought to the institutions during the year was 4,582 as against 8,149 in the previous year.

97. The Veterinary dispensary at Peravallur in Chingleput district was moved to Madurantakam from 1st December 1935 on account of unsatisfactory work.

98. The leading institutions in the Presidency with the number of cases treated in each are mentioned below :—

Name of institution.			Number of cases treated.
(1)	Madras Veterinary College Hospital	.. ..	7,444
(2)	Veterinary Hospital, Coimbatore	.. ..	7,033
(3)	Do. Rajahmundry	.. ..	4,444
(4)	Do. Conjeeveram	.. ..	4,431
(5)	Do. Salem	.. ..	4,372
(6)	Veterinary Dispensary, Madura City	.. ..	4,313
(7)	Do. Hospital, Trichinopoly	.. ..	4,281
(8)	Do. do. Calicut	.. ..	4,261
(9)	Do. do. Saidapet	.. ..	4,162
(10)	Do. do. Bezwada	.. ..	3,956
(11)	Do. do. Palghat	.. ..	3,235
(12)	Do. do. Guntur	.. ..	3,194

VII.—ITINERATING STAFF.

99. The number of touring posts has been increased by six during the year, the total number of such posts at the end of the year being 109 as against 103 of the previous year.

The total number of cases treated by the itinerating staff during the year was 115,316 as against 102,261 of the previous year. Of these, 41,854 were contagious cases and 73,462 non-contagious.

VIII.—CASTRATIONS.

100. There has been an appreciable increase in the number of castrations performed during the year, the figures for the two years 1934-35 and 1935-36 being 63,565 and 70,576, respectively. Most of the castrations were performed by the Burdizzo method which is becoming increasingly popular in the districts. The largest number of castrations performed was in the districts of Coimbatore, Ganjam and East Godavari, the figures for these districts being 6,332, 4,803 and 4,422, respectively.

IX.—MISCELLANEOUS.

101. *Criminal poisoning and malicious injury.*—The Chemical Examiner to Government examined the viscera of 30 animals and poison was detected in 18 cases. Six cases of criminal poisoning were prosecuted resulting in two convictions and four acquittals. One hundred and fifty-three cases were examined by the staff of this department for malicious injury during the year and the necessary certificates were issued to the police.

102. *Society for Prevention of Cruelty to Animals.*—The total number of convictions obtained under the Prevention of Cruelty to Animals Act in the Presidency was 12,551 as against 11,408 of the previous year, Trichinopoly and Coimbatore recording as usual the largest number of convictions, the figures for these districts being 3,589 and 2,505, respectively. Out of the total number of cases in which the accused were convicted, the animals

in 3,780 cases were remanded to the Veterinary institutions declared as infirmaries under the Act for treatment as against 3,454 cases so remanded in the previous year.

103. *Forest grazing—Protection of bison from rinderpest.*—Government sanctioned the extension of the scheme for the inoculation of cattle in the bison areas of Kollegal division for two more years, i.e., 1935-36 and 1936-37. Under this scheme, 13,405 head of cattle were inoculated during the year.

104. *Forest livestock.*—The general condition of the forest livestock during the year continued to be satisfactory. The total number of Forest department livestock which were under the Inspector of Livestock on 31st March 1936 was as follows :—

Elephants, 106.

Bullocks, 2.

Buffaloes, 9.

There was no case of contagious disease among the forest livestock during the year. Four hundred and forty-four cases of non-contagious diseases were treated during the year as against 326 of the previous year. The increase may be attributed to the routine treatment for worms and wounds given for a larger number of elephants than in the previous year. There were only two deaths during the year, i.e., one elephant from undiagnosed abdominal pain with high temperature and one buffalo due to debility.

105. *Cattle pentas.*—Government in their Order Ms. No. 409, Development, dated 15th March 1935, approved my proposal that a special Veterinary Assistant Surgeon should be deputed for a year for duty in connexion with an enquiry into the conditions prevailing in the penta areas on the Nallamalais of Kurnool and Cuddapah districts. A senior Veterinary Assistant Surgeon was accordingly posted and the work on this special duty was actually done for about seven months during the year. From the special report furnished by the Veterinary Assistant Surgeon it was observed that he was not able to visit all the pentas in the Nallamalais which are spread over an area of about 6,000 square miles and that at least two men should be placed on special duty to complete the investigation by visiting the maximum possible number of important pentas in the whole of the Nallamalais. Proposals have accordingly been submitted to Government for the continuance of this special duty and sanction has been applied for for the employment of two Veterinary Assistant Surgeons on this duty. It is considered that conditions in the pentas have an important bearing on the disease position of migratory cattle and consequently on the districts through which they pass.

106. *Meat inspection.*—Several municipalities and union boards availed themselves of the services of the local Veterinary Assistant Surgeons for meat inspection work during the year, and the Panchayat Board, Nannilam, ceased to utilize the services of the Veterinary Assistant Surgeon for meat inspection work. It is

gratifying to note that several of the major municipalities of the Presidency have recently employed a whole-time Veterinary Assistant Surgeon for this and other work.

107. *Lethal chambers*.—Most of the lethal chambers for the destruction of stray dogs maintained by the local boards and municipalities were periodically inspected by the staff of this department. Many were reported to be in working order while others were not.

108. *Propaganda*.—Propaganda work was undertaken by the staff as usual in the course of their tours by way of free distribution of departmental leaflets, magic lantern demonstrations, treatment of sick animals, informal talks and discourses on various contagious diseases of cattle and practical demonstration of the Burdizzo method of castration. Advantage was also taken of the several cattle fairs and health and baby week shows to conduct magic lantern demonstrations and popular lectures on veterinary matters. The motor exhibition van belonging to this department was sent out to some of the districts for propaganda work with appreciable results and as this has proved an efficient means of demonstrating the usefulness of the department to the ryots, especially to those who live in places far from the railway and who are mostly ignorant of the work done by this department, proposals have, since the close of the year been submitted for the equipment of a second motor exhibition unit. The motor exhibition vans of the Agricultural department were also made use of for Veterinary propaganda work.

With a view to educate the illiterate classes of people in veterinary matters, pictorial charts depicting the more important diseases met with in cattle for display at cattle fairs, exhibitions, etc., were printed and supplied to the Principal, Madras Veterinary College, District Veterinary Officers and the motor exhibition van. A set of 13 posters pertaining to this department prepared by the District Veterinary Officer, Madanapalle, was also supplied to the motor exhibition van of this department for propaganda work.

109. *Fairs and shows*.—Several annual and weekly cattle fairs conducted during the year were attended by the staff of this department. The provisions of the Cattle Disease Act were enforced in many of the fairs.

110. *Horse breeding*.—The Coimbatore District Board continued to maintain a stallion for purposes of breeding. It had 10 services during the year and the service fees realized by the Board was Rs. 100.

111. *Visiting committees*.—The members of most of the visiting committees attached to Veterinary institutions did not appear to have evinced much interest in the work of the Veterinary institutions but in a few cases the committees continued to function satisfactorily and to render help in regard to the working of the institutions.

112. *Levy of fees in Veterinary institutions*.—Fees were introduced during the year in the Veterinary dispensaries at Tuticorin and Madura. The system of levy of fees continued to work satisfactorily except in a few cases which is mainly attributed to general economic depression.

113. *Export and import*.—According to the orders of Government, the arrangement for the inspection of animals intended for export to Ceylon by the Veterinary Assistant Surgeon placed on special duty at Tuticorin and the issue of certificates to healthy animals before shipment, is to cease, if and when the animals inspected fall below 1,200 per month. The number of animals allowed under permits to be landed in Colombo was 2,386 per mensem till the end of January 1936, and the Ceylon Government is reported to have reduced the number to 1,988 with effect from 1st February 1936.

The total number of sheep and goats certified for export during the year was 32,341 as against 38,289 in the previous year. The fall in the number of animals is partly due to the restriction by the Ceylon Government of the number permitted to be landed in Colombo and also to some extent due to repercussions of trade conditions. There was no complaint about the working of the arrangement and the export was regular throughout the year. A fee of 2 annas per head of animal continued to be levied for the issue of certificates and the receipts realized during the year on this account amounted to Rs. 4,042-10-0 while the expenditure was only Rs. 2,011-4-0 thus leaving a credit balance of Rs. 2,031-6-0.

114. According to Notifications No. 759, dated 25th June 1923, and No. 773, dated 28th June 1923, issued by the Government of India, Department of Education, Health and Lands, the importation of horses into British India from certain places outside India is prohibited. The restrictions do not affect horses imported into this Presidency from other ports in British India or from the Indian Feudatory States such as Junagadh and Bhavanagar whence consignments of ponies are imported into Calicut and other ports of this Province periodically without a satisfactory system of inspection before embarkation. Such batches of ponies are inspected by the staff of this department on landing, and instances are on record in which cases of Surra were detected among them with the result that the enforcement of the provisions of the Glanders and Farcy Act had to be resorted to but even this was found to be unsatisfactory as there was no provision in the Act to prevent the landing of affected ponies. Nor is it always possible for an officer of this department to be available at hand whenever a consignment of ponies arrives. In order, therefore, to prevent the importation of diseases into this Province through these sources, the Hon'ble the Agent to the Government of India in the States of Western India was approached and on his suggestions, the States of Junagadh and Bhavanagar have now agreed to institute a system of inspection including a mallein test for Glanders and

an examination of blood smears for Surra and the grant of a certificate in a form approved by this department before embarkation.

It will be seen that these restrictions apply only to horses and ponies. No provision yet exists for the prevention of fatal cattle diseases from being imported into this Province by land or sea from an Indian State.

X.—FINANCE.

115. According to this office registers the total expenditure of this department during the year under report including that incurred in connexion with Veterinary Investigation Scheme was Rs. 9,79,271-10-5 as against Rs. 9,31,736-15-6 incurred during the previous year. There was an increase in expenditure under all the sub-heads except under "Hospitals and dispensaries" and "Serum Institute," the actual expenditure under these heads being Rs. 2,83,887-11-7 and Rs. 78,696-6-11, respectively as against Rs. 2,88,653-11-2 and Rs. 82,652-13-7 of the previous year. The decrease under "Hospitals and dispensaries" is due to the reduced expenditure under "Rents" on account of the transfer of certain Veterinary institutions from rented to Government buildings and non-utilization of an allotment amounting to nearly Rs. 4,550 under "Petty construction and repairs." The decrease under the sub-head "Serum Institute" is due to reduced expenditure under the detailed heads "Maintenance charges" and "Apparatus and materials," on account of a considerable decrease in the number of animals maintained owing to reduced production of serum and of a fall in the quantity of chemicals obtained from the Medical Store Depot to meet actual requirements based on the quantity of serum manufactured. The receipts of the department amounted to Rs. 49,829-5-9 as against Rs. 47,078-15-9 of the previous year.

XI.—FUTURE PROGRAMME OF WORK.

Administration.

116. The question of the future expansion of the department has been under consideration for some time and it was also discussed at the Provincial Veterinary Conference held in 1933. Though the proposal for the appointment of Deputy Directors submitted in previous years, has been negatived by Government, there is no doubt as to the necessity for these officers and their appointment should form an important item in the programme of the future expansion of the department. It has also been felt that the present Veterinary staff is wholly inadequate for district work and that immediate steps should be taken to decrease the area of control of the existing territorial officers (District Veterinary Officers) of the department so as to ensure a more intimate knowledge of the conditions with reference to the Veterinary needs of each district. With regard to Touring Veterinary Assistant Surgeons and Veterinary institutions, the policy of the department has always been to increase the number of these gradually every year, so that

ultimately there may be at least one touring billet and a Veterinary dispensary for each taluk in the Presidency. A ten-year programme for the future expansion of the department was drawn up during the year and submitted to Government and also to the Provincial Economic Council for consideration. This scheme provides for the increase of the subordinate executive staff at a more rapid rate and also for the appointment of Veterinary Inspectors, Additional District Veterinary Officers and Deputy Directors.

Education.

117. (a) *Instruction.*—The three years' diploma course will continue to be held at the Madras Veterinary College and the refresher course for the Veterinary Assistant Surgeons will be held as usual for a period of 9 months from July 1936.

(b) *University degree course.*—The B.V.Sc. degree course has been instituted at the Madras Veterinary College from the beginning of the academic year 1936-37.

(c) *Model dairy.*—A scheme for the establishment of a model dairy at the Madras Veterinary College has been submitted to Government and it is expected that it will materialize shortly.

118. *Laboratory work and research.*—The Pathology and Parasitology sections of the Madras Veterinary College Laboratory will continue to carry out the several items of research work which have already been initiated. New items of research work will also be undertaken as occasion arises. The routine experiments, examinations of materials, preparation of vaccines, etc., will be continued.

The Veterinary Investigation Officer, Madras, will continue his investigations on the diseases allotted to him, viz., Blackquarter, Hæmorrhagic Septicæmia and sheep and goat diseases.

119. *Serum Institute.*—The manufacture of anti-rinderpest and hæmorrhagic Septicæmia sera and rinderpest virus will be continued at the Institute, and further work in the development of a tissue vaccine for rinderpest will also be carried out.

120. *Contagious and non-contagious diseases.*—There are at present 109 Touring Veterinary Assistant Surgeons to attend to the outbreaks of cattle diseases for the whole of this Presidency. Most of these assistants have jurisdiction over two or three taluks and consequently it has not been possible in practice for these assistants to attend to all the outbreaks. Apart from cattle diseases, the time has now come to consider diseases in goat, sheep and poultry also. A considerable amount of work can be done to reduce mortality among these animals, provided the department has the requisite touring staff.

The absence of an adequate staff has always stood in the way of satisfactory progress being made by the department in controlling contagious diseases or even in dealing with less important ailments of cattle. The view expressed by the Royal Commission on Agriculture in India was that the aim should be to provide on an

average at least one Veterinary Assistant Surgeon for every 25,000 cattle. This decision was arrived at on the assumption that the Civil Veterinary Departments in most provinces are not generally responsible for equine contagious diseases and also without attaching much importance to the diseases of sheep and goats and poultry. Considering, therefore, the fact that the staff of this department is required to attend not only to the diseases of bovines and equines but also sheep and goats and poultry, it is necessary that the existing staff which falls far short of the number recommended by the Royal Commission, should be considerably augmented. With this object in view, provision has been included in the ten-year programme referred to above for the appointment of 12 additional Touring Veterinary Assistant Surgeons every year in future so that within the next 10 years each taluk can have a Touring Veterinary Assistant Surgeon.

121. *Propaganda.*—Propaganda on existing lines will be continued.

The motor exhibition van has toured so far in Nellore, Kurnool, Bellary, Anantapur and Chittoor districts and the work turned out has been very satisfactory. With the present single propaganda unit, it is not possible to extend the propaganda activities to all the areas in the Presidency where they are most needed. Further, the results of the present exhibition van show that valuable work can be done by this means. It is, therefore, necessary to obtain further motor exhibition units for the use of this department and proposals in this regard already submitted by me for a second van are under the consideration of Government.

MADRAS,
9th July 1936.

P. T. SAUNDERS,
Director of Veterinary Services.

APPENDIX I.
Statement showing the number of deaths from contagious diseases among animals during the year 1935-36 (as furnished by Collectors).

Bovines.														Equines.													
Districts.		(1)	Rinderpest.	(2)	(3)	Anthrax.	(4)	Hæmorrhagic septicæmia.	(5)	Blackquarter.	(6)	Foot and mouth.	(7)	Others.	(8)	Total.	(9)	Glanders.	(10)	Anthrax.	(11)	Surra.	(12)	Others.	(13)	Total.	
Ganjam ..	..	..	..	341	47	117	117	90	153	997	1,745	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Vizagapatam ..	..	..	..	207	95	568	368	231	590	2,059	826	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Godavari, East ..	..	..	..	277	206	222	43	4	74	826	..	..	..	..	..	..	..	..	..	..	..	1	5	..	..	6	
Godavari, West ..	..	..	..	419	338	197	25	23	109	1,111	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Kistna ..	..	..	..	357	84	409	42	4	122	1,018	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	45	
Guntur ..	..	..	..	392	87	519	145	30	58	1,231	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Kurnool ..	..	..	..	7	142	372	427	92	85	1,125	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	
Bellary ..	..	..	..	27	80	64	57	22	152	402	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Anantapur ..	..	..	..	1	30	19	33	8	1,073	1,164	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Chittoor ..	..	..	..	168	54	6	240	18	91	577	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Cuddapah ..	..	..	..	..	137	122	153	16	22	450	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Nellore ..	..	..	..	30	316	855	1,146	71	494	2,912	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	
Chingleput ..	..	..	..	31	173	497	438	133	192	1,464	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
South Arcot ..	..	..	..	24	57	63	206	7	50	407	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
North Arcot ..	..	..	..	50	124	261	261	3	152	851	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	
Salem ..	..	..	..	..	50	5	505	28	601	1,189	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Trichinopoly ..	..	..	..	8	23	71	716	20	36	874	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Tanjore ..	..	..	..	28	9	559	102	8	80	786	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	
Madura ..	..	..	..	78	37	74	367	21	62	639	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Ramanad ..	..	..	..	40	40	15	7	5	28	135	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Tinnevely ..	..	..	..	7	22	49	12	26	35	151	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Coimbatore ..	..	..	..	..	6	13	354	40	47	460	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Nilgiris ..	..	..	..	20	2	35	23	3	286	369	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Malabar ..	..	..	..	..	177	501	93	..	112	883	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
South Kanara ..	..	..	..	240	43	51	4	10	34	382	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Madras City ..	..	..	..	..	4	..	..	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Total ..	..	..	..	2,752	2,383	5,664	5,857	976	5,582	23,214	..	..	..	..	..	..	..	..	..	..	..	1	70	..	..	..	71

NOTE.—These figures were furnished by the Collectors of districts and do not include the mortality in Agency tracts, zamindari areas and certain municipalities which do not retain records for this purpose.

NOTE.—These figures were furnished by the Collectors of districts and do not include the mortality in Agency tracts, zamindari areas and certain municipalities which do not maintain records for this purpose.

APPENDIX II.

Statement showing results of preventive inoculation during the year 1935-36.

Districts.	Name of disease against which inoculation was carried out.	Method of inoculation followed.	Number of outbreaks in which inoculation was undertaken.	Number of animals which died uninoculated in course of outbreak.			Number of animals inoculated.			Number of animals which died after inoculation.		
				Equines.	Bovines.	Others.	Equines.	Bovines.	Others.	Equines.	Bovines.	Others.
Vizagapatam	Rinderpest.	Serum alone method.	3	..	..	..	..	33	..	..	..	..
Godavari, East	..	..	..	..	..	..	..	14	..	..	..	..
Godavari, West	..	..	..	..	..	..	..	27	..	..	..	..
Salem	..	..	..	..	..	..	..	89	..	..	..	..
Coimbatore	..	..	..	..	..	..	..	54	..	..	..	..
Tanjore	..	..	..	..	..	..	..	15	..	..	..	..
Malabar	..	..	..	..	..	..	..	26	..	..	..	..
South Kanara	..	..	..	..	..	..	..	49	..	..	..	..
Total	..	..	6	..	19	..	..	307	..	..	..	..
Madras City	Rinderpest	Serum simultaneous.	1	..	4	..	..	206	..	3	..	..
Ganjam	..	..	31	..	343	..	..	6,451	..	..	..	..
Vizagapatam	..	..	48	..	541	20	..	9,133	..	..	..	..
Godavari, East	..	..	44	..	284	..	..	10,692	..	..	..	..
Godavari, West	..	..	82	..	496	..	..	12,051	..	1	..	..
Kistna	..	..	60	..	437	..	..	13,213	..	6	..	..
Guntur	..	..	3	..	317	..	..	3,053	..	..	..	..
Kurnool	..	..	..	..	1,498	..	..	2,477	..	7	..	..
Bellary	..	..	2	..	18	..	..	372	..	..	..	..
Cuddapah	..	..	..	..	22	..	..	1,789	..	..	..	..
Nellore	..	..	4	..	1	..	..	1,903	..	2	..	..
Chingleput	..	..	..	..	..	..	..	2,816	..	..	..	..
South Arcot	..	..	..	..	18	..	..	1,025	..	1	..	..
North Arcot	..	..	..	..	..	..	..	1,166	..	..	..	..
Salem	..	..	5	..	..	..	..	2,328	..	..	..	..
Chittoor	..	..	..	..	..	..	..	5,136	..	..	..	..
Anantapur	..	..	..	..	..	..	..	13,405	..	..	..	..
Coimbatore	..	..	..	..	..	..	..	339	..	..	..	..
The Nilgiris	..	..	5	..	14	..	..	2,496	..	5	..	..
Trichinopoly	..	..	..	..	..	..	..	3,303	..	..	..	..
Tanjore	..	..	7	..	47	..	..	3,213	..	..	..	..
Madura	..	..	1	..	2	..	..	2,378	..	..	..	..
Ramnad	..	..	2	..	..	..	..	4,157	..	..	..	..
Tinnevely	..	..	..	..	..	..	..	2,693	..	..	..	..
Malabar	..	..	20	..	188	..	..	4,317	..	18	..	..
South Kanara	..	..	..	..	..	..	..	..	..	11	..	..
Total	..	..	315	..	2,732	20	..	1,11,610	52	41	..	..
Ganjam	Rinderpest.	Goat's blood virus.	..	..	..	..	..	3,538	..	..	..	..
Vizagapatam	..	..	..	..	..	..	..	9,476	..	..	..	..
Godavari, East	..	..	..	..	..	..	..	3,033	..	5	..	..
Godavari, West	..	..	..	..	..	..	..	6,887	..	3	..	..
Kistna	..	..	..	..	..	..	..	1,340	..	..	..	..
Guntur	..	..	..	..	..	..	..	206	..	..	..	..
Kurnool	..	..	..	..	..	..	..	686	..	..	..	..
Bellary	..	..	..	..	..	..	..	1,763	..	5	..	..
Cuddapah	..	..	..	..	..	..	..	382	..	..	..	..
Nellore	..	..	..	..	..	..	..	429	..	..	..	..
Chingleput	..	..	..	..	..	..	..	907	..	..	..	..
South Arcot	..	..	..	..	..	..	..	1,757	..	..	..	..
North Arcot	..	..	..	..	..	..	..	3,092	..	..	..	..
Chittoor	..	..	..	..	..	..	..	7,190	..	14	..	..
Anantapur	..	..	..	..	..	..	..	3,987	..	10	..	..
Salem	..	..	..	..	..	..	..	4,479	..	2	..	..
Coimbatore	..	..	..	..	..	..	..	3,894	..	..	..	..
Trichinopoly	..	..	..	..	..	..	..	479	..	12	..	..
Tanjore	..	..	..	..	..	..	..	1,511	..	3	..	..
Madura	..	..	..	..	..	..	..	1,097	..	14	..	..
Ramnad	..	..	..	..	..	..	..	1,470	..	2	..	..
Tinnevely	..	..	..	..	..	..	..	3,028	..	2	..	..
The Nilgiris	..	..	..	..	..	..	..	59	..	3	..	..
Malabar	..	..	..	..	..	..	..	286	..	13	..	..
South Kanara	..	..	..	..	..	..	..	138	..	..	..	..
Total	..	..	..	..	..	..	..	61,114	..	88	..	..

Statement showing results of preventive inoculation during the year 1935-36—cont.

Districts.	Name of disease against which inoculation was carried out.	Method of inoculation followed.	Number of outbreaks in which inoculation was undertaken.	Number of animals which died uninoculated in course of outbreak.			Number of animals inoculated.			Number of animals which died after inoculation.		
				Equines.	Bovines.	Others.	Equines.	Bovines.	Others.	Equines.	Bovines.	Others.
Vizagapatam	Haemorrhagic Septicemia.	Serum alone method.	10	..	53	..	..	1,950	..	..	..	..
Godavari, East	..	..	19	..	118	..	..	3,612	..	..	..	..
Godavari, West	..	..	7	..	65	..	..	1,997	..	..	..	..
Kistna	..	..	12	..	126	..	..	4,362	..	..	..	..
Guntur	..	..	7	..	105	..	..	1,563	..	..	..	..
Kurnool	..	..	13	..	200	..	..	4,378	..	..	..	..
Bellary	..	..	1	..	23	..	..	320	..	..	..	..
Cuddapah	..	..	15	..	197	..	..	1,751	..	..	..	..
Nellore	..	..	91	..	928	..	..	25,175	..	29	..	..
Chingleput	..	..	6	..	47	..	..	1,384	..	..	..	..
North Arcot	..	..	30	..	213	..	..	4,573	..	..	..	..
Chittoor	..	..	21	..	94	..	..	2,871	..	..	..	..
Anantapur	..	..	1	..	11	..	..	84	..	..	..	..
Coimbatore	..	..	2	..	29	..	..	614	..	..	..	..
Tanjore	..	..	4	..	22	..	..	1,344	..	..	..	..
Madura	..	..	49	..	359	..	..	7,809	..	9	..	..
Tinnevely	..	..	4	..	109	..	..	1,205	..	1	..	..
The Nilgiris	..	..	1	..	16	..	..	222	..	..	..	..
Malabar	..	..	6	..	32	..	..	642	..	..	..	..
Total	..	..	75	..	587	..	..	6,599	..	..	6	..
Madras City	..	..	373	..	3,334	7	..	72,601	..	..	47	..
Ganjam	..	..	6	2	5	..	18	443	..	..	..	..
Vizagapatam	..	..	1	..	1	..	..	3	..	..	..	..
Godavari, East	..	..	1	..	..	..	..	..	72	..	..	..
Godavari, West	..	..	1	..	..	..	..	213	..	..	..	..
Cuddapah	..	..	2	..	..	..	..	167	..	..	..	..
Nellore	..	..	2	..	11	..	..	291	480	..	..	..
Chingleput	..	..	18	..	95	..	..	3,999	41	..	7	..
South Arcot	..	..	3	..	51	129	..	1,036	1,223	..	11	..
Chittoor	..	..	2	..	10	..	..	232	327	..	..	..
Anantapur	..	..	5	..	50	..	..	854	..	5	..	..
Malabar	..	..	1	..	..	..	..	239	120	..	..	..
South Kanara	..	..	3	..	..	..	..	348	2	..	..	..
Total	..	..	54	2	288	173	18	7,825	2,265	..	12	13
Guntur	..	..	1	..	19	..	..	475	..	..	..	..
Nellore	..	..	37	..	269	..	..	10,427	..	..	38	..
Cuddapah	..	..	12	..	46	..	..	1,779	..	..	..	..
Kurnool	..	..	5	..	52	..	..	1,073	..	..	..	..
Chittoor	..	..	2	..	13	..	..	519	..	..	..	..
North Arcot	..	..	15	..	74	..	..	1,529	..	..	2	..
Salem	..	..	2	..	11	..	..	1,020	..	..	..	..
Chingleput	..	..	30	..	202	..	..	7,132	..	..	16	..
South Arcot	..	..	7	..	56	..	..	2,452	..	..	1	..
Trichinopoly	..	..	3	..	58	..	..	2,018	..	..	..	..
Tanjore	..	..	9	..	61	..	..	1,757	..	..	2	..
Madura	..	..	29	..	256	..	..	5,005	..	..	..	..
Ramnad	..	..	1	..	4	..	..	212	..	..	..	..
Tinnevely	..	..	1	..	11	..	..	140	..	..	..	..
Coimbatore	..	..	6	..	63	..	..	2,481	..	..	..	..
Malabar	..	..	6	..	73	..	..	886	..	..	..	..
Total	..	..	171	..	1,273	8	..	38,905	..	..	59	..
Godavari, East	..	..	..	..	..	..	..	226	..	..	..	..
Cuddapah	..	..	..	..	16	..	..	1,350	..	..	..	..
Kurnool	..	..	..	..	62	..	..	2,359	..	..	..	..
Anantapur	..	..	..	..	..	..	..	250	..	..	..	..
Chittoor	..	..	..	..	6	..	..	253	..	..	..	..
Salem	..	..	..	..	83	..	..	2,332	..	..	..	..
Chingleput	..	..	..	..	89	..	..	3,898	..	..	..	..
Trichinopoly	..	..	..	..	4	..	..	182	..	..	1	..
Coimbatore	..	..	..	..	44	..	..	966	..	..	..	..
Total	..	..	37	..	284	..	..	11,816	..	..	1	..

* Muktesar Serum.

† Madras Serum.

Statement showing results of preventive inoculation during the year 1935-36—cont.

Districts.	Name of disease against which inoculation was carried out.	Method of inoculation followed.	Number of outbreaks in which inoculation was undertaken.	Number of animals which died uninoculated in course of outbreak.			Number of animals inoculated.			Number of animals which died after inoculation.		
				Equines.	Bovines.	Others.	Equines.	Bovines.	Others.	Equines.	Bovines.	Others.
Nellore	Black quarter.	Sero vaccine.	40	..	242	..	..	11,456	..	..	23	..
Cuddapah	..	..	28	..	114	..	..	4,839	..	..	..	..
Bellary	..	..	5	..	41	..	..	761	..	..	..	..
Kurnool	..	..	10	..	106	..	..	1,545	..	..	..	..
Anantapur	..	..	5	..	14	..	..	1,424	..	..	..	..
Chittoor	..	..	21	..	151	..	..	3,846	..	..	..	..
North Arcot	..	..	14	..	51	..	..	1,020	..	..	..	..
Salem	..	..	52	..	412	..	..	9,007	..	..	..	..
Chingleput	..	..	12	..	107	..	..	1,692	..	..	..	..
South Arcot	..	..	9	..	152	..	..	2,983	..	..	..	..
Trichinopoly	..	..	38	..	527	..	..	9,499	..	..	..	..
Tanjore	..	..	6	..	27	..	..	783	..	..	..	..
Coimbatore	..	..	48	..	296	..	..	17,789	..	..	..	..
The Nilgiris	..	..	1	..	1	..	..	20	..	..	..	..
Total	..	..	289	..	2,241	..	..	67,564	..	..	86	..
Godavari, East	Fowl cholera.	Serum alone.	1	..	..	..	..	..	60	..	..	..
Chittoor	..	..	1	..	..	17	..	..	98	..	..	..
Total	..	..	2	..	..	17	..	..	158	..	..	..
Madura	Fowl cholera.	Vaccine alone.	..	..	..	..	..	..	63	..	..	4
Vizagapatam	Fowl cholera.	Sero vaccine	..	..	..	..	..	..	211	..	..	..
Godavari, East	Fowl pest.	Vaccine alone.	1	..	..	..	..	..	98	..	..	..
Vizagapatam	Fowl pox.	Vaccination.	..	..	..	..	..	..	256	..	..	..
Coimbatore	Sheep pox.	Ovination.	1	..	..	12	..	..	3	..	..	..

APPENDIX III.

Statement showing the number of animals treated and castrated on tour during the year 1935-36.

Districts.	Number of Veterinary Surgeons employed.	Number of villages visited.	Castrations performed.			Treated for contagious diseases.			Treated for non-contagious diseases.			Total number of castrations performed and cases treated.
			Equines.	Bovines.	Others.	Equines.	Bovines.	Others.	Equines.	Bovines.	Others.	
Vizagapatam Circle—	..	..	..	..	..	..	..	..	..	..	..	..
Agency tracts	8	446	1	827	38	..	..	..	..	..	..	4,983
Ganjam	5	646	1	1,877	21	..	..	..	..	..	..	10,201
Vizagapatam	5	842	1	1,187	53	..	..	..	..	..	..	6,725
Rajahmundry Circle—	..	..	..	..	..	..	..	..	..	..	..	..
East Godavari (Agency Do.)	2	262	1	1,013	8	..	..	..	..	..	..	2,575
West Godavari	3	507	3	1,153	12	..	..	..	..	..	..	3,782
Bezawada Circle—	3	490	..	646	3	..	..	..	..	..	..	4,421
Kistna	6	637	8	1,298	115	..	..	..	..	..	..	5,685
Guntur	4	430	1	248	30	..	..	..	..	..	..	5,697
Nellore Circle—	9	1,506	3	2,032	273	..	..	..	..	..	..	12,517
Nellore	6	811	1	491	403	..	..	..	..	..	..	5,671
Cuddapah	7	376	10	1,674	844	..	..	..	..	..	..	5,176
Bellary	4	801	13	1,160	598	..	..	..	..	..	..	13,416
Kurnool	7	801	7	2,347	1,199	..	..	..	..	..	..	9,091
Madanapalle Circle—	5	552	17	950	2,658	..	..	..	..	..	..	7,743
Anantapur	5	562	2	1,853	89	..	..	..	..	..	..	3,664
North Arcot	5	666	6	1,083	377	..	..	..	..	..	..	4,424
Salem	7	992	12	2,792	1,524	..	..	..	..	..	..	14,426
Coimbatore	2	291	..	373	159	..	..	..	..	..	..	2,122
Calicut Circle—	6	612	..	2,339	105	..	..	..	..	..	..	5,510
Malabar	4	574	..	2,214	186	..	..	..	..	..	..	7,658
South Kanara	3	409	..	784	209	..	..	..	..	..	..	1,029
Madura	4	623	..	575	480	..	..	..	..	..	..	3,457
Tinnevely	4	577	..	1,519	88	..	..	..	..	..	..	3,094
Trichinopoly Circle—	3	408	..	757	79	..	..	..	..	..	..	3,932
Trichinopoly	4	719	..	1,471	256	..	..	..	..	..	..	2,481
Tanjore	4	894	3	2,204	117	..	..	..	..	..	..	3,855
Madras Circle—	5	523	..	1,555	129	..	..	..	..	..	..	4,693
South Arcot	..	..	..	..	..	..	..	..	..	..	..	3,915
Chingleput	..	..	..	..	..	..	..	..	..	..	..	..
Total	123	16,431	93	38,422	9,993	..	..	..	747	69,159	3,556	73,462

APPEN

Statement showing the number of animals treated and castrated at

Districts.	Number of veterinary institutions.	Number of Veterinary Assistant Surgeons employed.	Number of in-patients treated during the year.				Number of out-patients treated during the year.			
			Equines.	Bovines.	Others.	Total.	Equines.	Bovines.	Others.	Total.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Vizagapatam Circle—										
Ganjam ..	4	4	4	108	7	119	529	4,760	1,335	6,624
Vizagapatam ..	5	5	2	93	80	175	426	5,859	2,631	8,916
Rajahmundry Circle—										
East Godavari ..	9	9	62	527	57	646	1,030	9,807	4,811	15,648
West Godavari ..	3	3	14	201	8	223	252	4,038	1,527	5,817
Bezwada Circle—										
Kistna ..	7	7	..	186	18	204	501	9,927	3,608	14,036
Guntur ..	5	5	17	182	6	205	371	6,270	2,304	8,945
Nellore Circle—										
Nellore ..	3	3	38	228	46	310	1,163	3,100	942	5,205
Cuddapah ..	4	4	..	11	..	11	171	4,792	950	5,913
Bellary Circle—										
Bellary ..	4	4	11	52	16	79	445	3,967	1,856	6,268
Kurnool ..	4	4	22	193	10	225	863	4,693	2,230	7,756
Madanapalle Circle—										
Chittoor ..	2	2	1	255	17	273	151	4,240	1,306	5,697
Anantapur ..	3	3	23	320	29	372	406	2,848	1,379	4,633
Vellore Circle—										
North Arcot ..	3	3	18	247	40	305	461	5,093	1,616	7,170
Salem ..	5	5	31	1,098	265	1,394	1,176	5,621	2,660	9,457
Coimbatore Circle—										
Coimbatore ..	9	11	134	2,000	321	2,545	932	14,375	6,540	21,847
The Nilgiris ..	2	2	17	48	201	266	159	1,254	3,768	5,181
Calicut Circle—										
Malabar ..	4	4	27	195	63	285	187	4,265	6,566	11,018
South Kanara ..	2	2	8	32	20	60	78	2,822	2,062	4,962
Madura Circle—										
Madura ..	5	5	151	379	45	575	521	6,043	4,701	11,265
Ramnad ..	5	5	1	112	9	122	111	4,936	2,028	7,075
Tinnevely ..	2	2	18	559	26	603	167	2,518	1,262	3,947
Trichinopoly Circle—										
Trichinopoly ..	4	5	11	114	51	176	238	6,930	2,282	9,450
Tanjore ..	8	8	8	166	16	190	466	12,678	3,688	16,832
Madras Circle—										
South Arcot ..	4	4	15	249	41	305	234	6,063	1,273	7,570
Chingleput ..	5	7	48	182	173	403	508	9,369	3,768	13,645
Madras City ..	2	5	197	484	354	1,035	249	3,308	8,192	11,749
Total ..	113	121	878	8,309	1,919	11,106	11,795	149,576	75,285	236,656
Private Institutions—										
Parlakimedi ..	1	1	2	19	4	25	264	1,083	298	1,645
Vizianagaram ..	1	1	150	567	18	735	448	1,859	756	3,063
Pithapuram ..										
Sivaganga ..										
Total ..	2	2	152	586	22	760	712	2,942	1,054	4,708
Grand total ..	115	123	1,030	8,895	1,941	11,866	12,507	152,518	76,339	241,364

DIX IV.

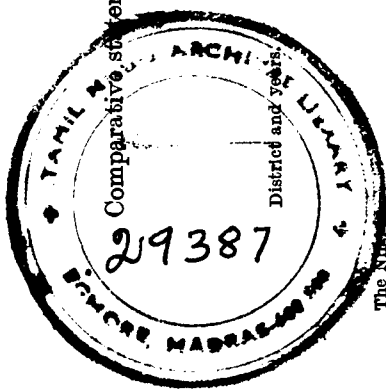
Veterinary Hospitals and Dispensaries during the year 1935-36.

Grand total of in- and out-patients treated during the year.	Total number of cases supplied with medicine but not brought to institutions.	Castrations performed.				Receipts.	Expenditure.
		Equines.	Bovines.	Others.	Total.		
(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
						RS. A. P.	RS. A. P.
6,743	251	3	2,837	64	2,904	209 10 3	9,143 7 3
9,091	279	4	675	19	698	1,549 1 0	11,605 4 0
16,294	1,019	9	2,203	20	2,232	831 15 6	21,595 0 10
6,040	179	2	650	2	654	363 1 0	8,382 3 4
14,240	142	4	1,028	41	1,073	710 15 9	17,438 0 9
9,150	108	11	389	108	508	504 14 0	11,523 2 5
5,515	66	2	306	10	318	264 5 10	7,022 9 10
5,924	137	..	913	529	1,442	154 4 0	8,455 2 8
6,347	55	9	413	272	694	198 6 0	8,527 5 4
8,011	111	4	474	420	808	84 4 0	9,531 15 7
5,970	41	..	709	162	871	72 10 0	4,891 14 6
5,005	93	2	243	334	579	335 2 0	6,702 2 4
7,475	33	2	597	43	642	185 3 0	6,993 8 6
10,851	121	10	363	317	690	203 7 0	12,505 14 3
24,392	246	24	1,350	630	2,004	1,304 12 0	23,056 11 11
5,447	34	8	66	62	136	1,576 12 0	7,366 11 10
11,303	352	3	547	53	603	603 8 0	11,564 3 7
5,022	210	..	370	184	554	340 10 0	5,302 0 6
11,840	101	2	854	343	1,199	679 1 0	14,410 2 2
7,197	117	1	327	248	576	64 8 0	11,470 7 11
4,550	23	2	73	84	159	119 14 0	6,584 9 10
9,626	104	3	683	204	800	782 11 0	11,117 0 10
17,022	119	8	1,240	573	1,821	946 3 0	20,430 10 9
7,875	197	2	700	62	764	217 14 0	10,447 13 1
14,048	76	2	539	88	629	1,612 1 0	16,370 8 7
12,784	..	5	12	27	44	4,021 8 0	18,422 0 6
247,762	4,214	122	18,561	4,899	23,582	17,936 9 4	3,01,460 13 1
1,670	100	..	330	6	336	2 8 0	1,678 6 0
3,798	268	23	103	24	150	123 0 0	1,760 3 9
available.							1,200 0 0
5,468	368	23	433	30	486	125 8 0	4,644 9 8
353,230	4,582	145	18,994	4,929	24,068	18,062 1 4	3,06,105 6 10

Comparative statement showing the number of outbreaks and deaths from cattle diseases in each district of the Presidency (as furnished by the Revenue Department).

District and years.		I.												Total.		
		Rinderpest.			Anthrax.		Hæmorrhagic septicæmia.		Black quarter.		Foot and mouth.		Others.			
		Number of out- breaks.	Mortality.	(3)	Number of out- breaks.	Mortality.	Number of out- breaks.	Mortality.	Number of out- breaks.	Mortality.	Number of out- breaks.	Mortality.	Number of out- breaks.		Mortality.	
(1)																
Ganjam--	1933-34	43	244	16	94	53	383	17	256	45	306	..	1,482	174	306	2,745
	1934-35	82	1,026	10	61	63	380	6	191	146	330	..	1,674	807	348	3,662
	1935-36	48	341	14	47	27	117	5	90	156	153	..	997	248	174	1,745
Vizagapatam--	1933-34	24	..	18	14	68	864	25	479	18	188	..	971	153	188	2,516
	1934-35	11	..	15	..	20	530	26	473	179	446	..	1,068	251	446	2,517
	1935-36	85	207	26	95	50	568	21	368	56	231	..	590	242	242	2,059
Godavari, East--	1933-34	149	528	36	538	22	260	3	81	21	46	..	96	231	231	1,599
	1934-35	22	218	19	214	43	346	13	134	232	329	..	363	329	329	1,470
	1935-36	66	377	17	206	42	222	4	43	20	4	..	74	151	151	826
Godavari, West--	1933-34	48	423	39	336	4	85	..	19	4	7	..	217	95	95	1,087
	1934-35	57	355	31	401	8	89	..	22	11	23	..	231	136	136	1,331
	1935-36	86	419	39	335	19	197	..	25	11	23	..	109	155	155	1,111
Kistna--	1933-34	7	297	..	78	9	953	..	156	9	3	..	102	25	25	1,589
	1934-35	11	404	3	106	8	322	1	29	30	7	..	179	57	57	1,247
	1935-36	75	357	6	84	67	409	2	42	50	4	..	122	199	199	1,018
Guntur--	1933-34	..	63	..	133	..	804	..	368	2	163	..	91	2	2	1,622
	1934-35	..	54	2	112	8	786	..	224	22	54	..	115	41	41	1,345
	1935-36	6	392	6	87	66	519	14	145	105	30	..	58	197	197	1,231
Nellore--	1933-34	77	809	31	492	134	659	71	415	80	60	..	959	393	393	3,424
	1934-35	6	111	43	287	185	1,309	79	460	38	16	..	492	351	351	2,675
	1935-36	4	30	51	316	149	855	182	1,146	107	71	..	494	496	496	2,912
Cuddappah--	1933-34	70	806	13	147	30	299	18	76	27	4	..	78	158	158	1,410
	1934-35	13	195	5	137	30	141	25	104	35	10	..	27	108	108	1,548
	1935-36	..	..	5	137	27	122	58	153	69	16	..	22	159	159	450
Bellary--	1933-34	28	277	5	72	11	122	18	144	12	34	..	172	74	74	821
	1934-35	NH.	3	13	104	3	64	6	49	105	22	..	109	127	127	361
	1935-36	6	27	26	80	22	27	23	57	26	22	..	152	103	103	402

1833-34	132	245	22	252	20	189	93	272	87	160	1,177
1834-35	81	183	19	236	29	235	35	99	93	99	1,235
1835-36	7	142	42	372	68	427	144	92	85	288	1,012
Anantapur—											1,085
1833-34	109	5	2	18	97	633	13	41	170	128	1,164
1834-35	47	1	2	49	58	433	74	86	455	143	1,073
1835-36	8	30	2	19	7	33	43	8	1,073	64	1,270
Chittoor—											1,578
1833-34	27	72	12	72	268	859	3	110	180	292	1,577
1834-35	30	122	17	17	210	1,004	9	77	23	239	1,577
1835-36	188	54	2	6	65	240	10	13	91	104	1,065
North Arcot—											1,948
1833-34	3	107	19	112	91	519	12	16	308	145	1,948
1834-35	13	46	22	187	32	218	4	34	150	192	1,831
1835-36	50	124	42	261	47	261	2	3	152	135	2,109
Salem—											1,364
1833-34	1	95	7	77	198	1,263	32	120	554	243	1,189
1834-35	1	6	8	72	117	683	17	23	601	114	1,738
1835-36	1	50	1	5	92	503	6	7	134	220	1,305
Chingleput—											1,464
1833-34	366	74	94	654	121	472	7	35	137	274	1,738
1834-35	165	74	127	687	33	235	20	30	134	220	1,305
1835-36	31	173	103	497	71	438	3	133	192	213	1,560
South Arcot—											350
1833-34	180	53	14	475	120	646	9	24	182	143	407
1834-35	55	13	6	91	31	151	7	7	60	65	480
1835-36	24	57	35	63	47	206	1	7	50	95	466
Trichinopoly—											874
1833-34	44	44	14	122	36	204	3	30	36	60	874
1834-35	29	50	20	82	35	235	6	11	45	66	452
1835-36	8	23	8	71	100	716	..	20	36	110	874
Tanjore—											674
1833-34	35	77	54	532	2	15	9	..	15	73	674
1834-35	57	41	72	592	11	19	6	2	32	97	786
1835-36	28	9	110	559	38	102	3	8	80	151	735
Madura—											639
1833-34	76	180	33	196	41	241	8	19	73	100	735
1834-35	47	69	30	214	36	199	2	33	86	91	648
1835-36	78	37	9	74	63	367	19	21	62	109	639
Ramnad—											111
1833-34	37	19	7	10	6	12	10	..	33	35	111
1834-35	16	64	11	32	16	56	13	..	53	44	223
1835-36	40	40	2	15	2	7	..	5	28	26	135
Tinnevely—											516
1833-34	317	39	15	111	3	11	13	16	22	74	516
1834-35	118	25	10	82	2	11	5	20	62	33	318
1835-36	7	22	4	49	1	12	..	26	35	8	151
Colombatore—											818
1833-34	12	56	21	130	64	410	57	78	132	144	818
1834-35	22	29	5	59	171	1,027	23	104	73	207	1,814
1835-36	..	6	6	13	66	364	33	40	47	106	460



Comparative statement showing the number of outbreaks and deaths from cattle diseases in each district of the Presidency (as furnished by the Revenue Department)—*cont.*

District and year	Rinderpest.		Anthrax.		Hemorrhagic septicaemia.		Black quarter.		Foot and mouth.		Others.		Total.	
	Number of outbreaks.	Mortality.	Number of outbreaks.	Mortality.	Number of outbreaks.	Mortality.	Number of outbreaks.	Mortality.	Number of outbreaks.	Mortality.	Number of outbreaks.	Mortality.	Number of outbreaks.	Mortality.
The Nilgiris	1	6	1	1	9	211	1	81	15	8	47	25	263	210
1933-34	1	6	1	1	9	211	1	81	15	8	47	25	263	210
1934-35	4	20	11	11	2	13	7	23	1	3	144	23	389	389
1935-36														
Malabar														
1933-34	1	25	44	601	46	101	4	75	39	8	121	133	931	931
1934-35	1	8	13	174	41	275	21	196	18	15	112	96	690	690
1935-36	2		12	177	79	501	6	93	6		112	105	883	883
South Kanara														
1933-34	51	389	11	3	3	24	3	7	18	1	62	86	496	496
1934-35	9	82	1	43	2	51		5	39	10	46	51	140	140
1935-36	22	240	11		5		4		46		34	85	382	382
Madras City														
1933-34	1		2	2			1		13	1		6	16	1
1934-35			2	4					3			16	26	3
1935-36														4
Total	606	5,209	358	3,612	703	7,536	1,216	7,550	563	1,590	8,277	3,446	31,774	31,774
1933-34	283	3,283	284	2,800	751	6,825	970	6,416	1,138	1,720	6,229	3,444	26,733	26,733
1934-35			382	2,383	924	5,664	986	5,557	833	976	5,582	3,496	23,214	23,214
1935-36														

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Government of Madras

DEVELOPMENT DEPARTMENT

G.O. No. 1504, 31st August 1936

Veterinary—Administration Report—1935-36—Recorded.

READ—the following papers :—

I

Letter from P. T. SAUNDERS, Esq., O.B.E., M.R.C.V.S., I.V.S.,
Director of Veterinary Services, to the Secretary to
Government, Development Department, dated Madras, the
25th July 1936, R.O.C. No. 1439-A/36.

I have the honour to forward herewith in duplicate the
Administration Report of the Civil Veterinary Department, Madras,
for the year 1935-36.

2. Two copies of the map of the Madras Presidency, showing
the incidence of contagious diseases of cattle to be inserted at the
beginning of the report are also enclosed.

II

Letter from P. T. SAUNDERS, Esq., O.B.E., M.R.C.V.S., I.V.S.,
Director of Veterinary Services, to the Secretary to
Government, Development Department, through the
Accountant-General, dated Madras, the 29th July 1936,
C. No. 2999-B/36.

I have the honour to submit herewith a statement showing the
receipts and charges of the Civil Veterinary Department, including
the Madras Veterinary College, for the year 1935-36.

2. A sum of Rs. 1-2-0 has been adjusted under " 34. b. Agri-
culture—Veterinary—Transferred—D. Hospitals and Dispensaries
—Supplies and Services—Voted—Medicines and other hospital
necessaries " in March 1936 supplemental accounts. This has not
been included in the present statement since the supplemental
accounts have not yet been closed.

ENCLOSURE

Receipts and charges statement of the Civil Veterinary
Department for 1935-36.

RECEIPTS.

	RS.	A.	P.
XXIV. b. Agriculture—Veterinary Receipts—			
College receipts	26,033	7	0
Rents on buildings	3,438	5	0
Contribution from local bodies	1,160	0	0
Sale of used animals in the Serum Institute	2,735	4	0
Other receipts	16,462	5	9
Total—Veterinary Receipts	49,829	5	9

Recoveries of overpayments—			
Veterinary	186	0	7
Collection of payments for services rendered—			
Veterinary—			
Contribution towards leave salary	130	1	0
Other receipts	334	10	6
Deduct—Refunds—Veterinary	495	2	0

CHARGES.

34. b. Agriculture—Veterinary—			
A. Direction—			
Non-voted—			
Pay of officers	24,006	15	0
Allowances	3,293	14	0
Total—Non voted	27,300	13	0
Voted—			
Pay of establishments	18,965	9	0
Allowances	1,762	12	0
Other charges—			
Books and periodicals	1,504	3	5
Service postage and telegrams	1,998	15	3
Other contingencies	3,065	5	7
Apparatus and materials	4,696	0	0
Customs duty	160	13	0

Total—Voted .. 32,153 10 3

Total—Direction .. 59,454 7 3

B. Circle officers—			
Non-voted—Other charges—Rates and taxes	197	4	0

Voted—			
Pay of officers	62,657	7	0
Pay of establishments	27,433	10	0
Allowances	19,210	14	0

B. Circle officers—cont.

Voted—cont.

Other charges—

Rents	1,338	14	0
Service postage and telegrams	6,085	9	0
Other contingencies	3,200	5	7
Grants-in-aid (horse breeding operations)	300	0	0
Compensations under the Glanders and Farcy Act	61	0	0

Total—Voted .. 1,20,287 11 7

Total—Circle officers .. 1,20,484 15 7

C. Touring establishments—

Reserved Agency—Voted—

Pay of establishments	6,878	14	0
Travelling allowance	2,610	3	0
Contingencies	1,046	9	4

Total—Reserved .. 10,535 10 4

Transferred—

Non-voted—

Contingencies—

Rates and taxes	54	0	0
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Voted—

Pay of establishments	1,55,555	14	0
Allowances	42,191	14	0
Contingencies—			
Tour charges	11,387	6	9
Service postage and telegrams	3,975	11	9
Other contingencies	6,599	1	9
Purchase of sera including freight	94,855	6	0

Total—Transferred—Voted .. 3,14,565 6 3

Total—Transferred .. 3,14,619 6 3

Total—Touring establishments .. 3,25,155 0 7

D. Hospitals and dispensaries—

Reserved Agency—Voted—

Pay and travelling allowance of establishments.	5,418	15	0
Other supplies	2,196	0	2

Total—Reserved .. 7,614 15 2

Transferred—

Non-voted—

Other charges—

Rates and taxes	671	6	10
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Voted—

Pay of establishments	1,76,601	1	0
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D. Hospitals and dispensaries—*cont.*Transferred—*cont.*Voted—*cont.*

	RS.	A.	P.
Other charges—			
Allowances and honoraria	4,693	13	9
Pay of menials	39,045	6	3
Rents	12,989	10	9
Petty construction and repairs	1,317	13	0
Office expenses	7,117	6	8
Service postage and telegrams	4,066	14	9
Other contingencies	3,327	15	5
Supplies and services	26,411	4	0
Total—Transferred—Voted	2,75,601	5	7

Total—Transferred .. 2,76,272 12 5

Total—Hospitals and dispensaries .. 2,83,887 11 7

E. Veterinary College—

Non-voted—

Pay of officers	5,745	1	0
Allowances and honoraria	2,739	1	0
Contingencies—Rates and taxes	6,923	15	0

Total—Non-voted .. 15,408 1 0

Voted—

Pay of officers	35,098	12	0
Pay of establishments	29,746	15	0
Allowances and honoraria	5,157	9	0
Contingencies—			
Pay of menials	2,355	11	0
Electric current and telephone charges	1,655	9	6
Customs duty			
Office expenses and cleaning charges	1,774	8	6
Other contingencies	2,403	15	6
Supplies and services—			
Scholarships	1,475	5	0
Apparatus and materials	10,791	11	8
Feed and upkeep of sick animals	2,388	12	10
Maintenance of shoeing forge	1,640	12	0
Other supplies and services	661	11	6

Total—Voted .. 95,151 5 6

Total—Veterinary College .. 1,10,559 6 6

F. Serum Institute—

Non-voted—

Other charges—Rates and taxes	1,852	10	0
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Voted—

Pay of officers	9,938	6	0
Pay of establishments	14,653	10	0
Travelling and other compensatory allowances	1,078	4	0
Electric current and telephone charges	2,212	4	9
Pay of menials	4,831	0	0

F. Serum Institute—*cont.*Voted—*cont.*

	RS.	A.	P.
Livestock	16,769	12	0
Maintenance charges	14,566	15	0
Service postage and telegrams	1,430	0	0
Other contingencies	7,117	2	5
Apparatus and materials	4,246	6	9

Total—Voted .. 76,843 12 11

Total—Serum Institute .. 78,696 6 11

G. Veterinary Investigation—

Voted—

Pay of staff and other charges—

Veterinary Investigation Officer	2,718	0	0
Veterinary Assistant Surgeon, clerk and peon	1,784	8	0
Travelling and other compensatory allowances	3,324	9	0
Other contingencies	753	0	11
Apparatus and materials	1,033	10	0
Deduct—Charges recoverable from Governments, departments, etc.	—8,580	1	11

Total—Veterinary Investigation .. 1,033 10 0

Total—Veterinary .. 9,79,271 10 5

III

Endorsement of the Accountant-General, Madras,

No. T. 10/Bk.-209, dated 4th August 1936.

Forwarded.

2. The figures in the statement are up to the end of March 1936 (final) only and agree with those recorded in the books of this office.

T. S. SUBRAMANIA IYER,
Deputy Accountant-General.

To the Secretary to Government, Development Department.

IV

Letter from the Accountant-General (W.M. Section), to the Secretary to Government, Development Department, dated the 18/19th August 1936, No. W.M.-54.

[Expenditure incurred by the Public Works Department on the Civil Veterinary Buildings during the year 1935-36.]

With reference to Government Memorandum No. 3304-I/36-2. dated the 29th July 1936, on the subject indicated above, I have the honour to state that the total expenditure incurred by the Public Works Department (original works and repairs) on buildings of the Civil Veterinary Department during 1935-36 was Rs. 23,597-0-4.

Order—No. 1504, Development, dated 31st August 1936.

Recorded.

2. There was a small increase in the strength of veterinary assistant surgeons from 274 on 31st March 1935 to 282 at the end of March 1936, of whom 109 were touring assistants and 114 in charge of hospitals and dispensaries. The policy of the department is to have one veterinary assistant for each taluk in the Presidency and this ideal will gradually be reached as funds become available. Since the close of the year the Government have sanctioned 12 additional touring veterinary assistants.

3. The number of admissions to the Madras Veterinary College from this Presidency continued to be limited to thirty, ten seats being reserved for candidates from outside, including Burma. The term of office of the members of the two committees constituted for the selection of candidates for admission to the College at Bezwada and Madras having expired, a new committee common to both the centres was constituted during the year.

An X-Ray apparatus was added to the equipment of the College hospital. During the year the Syndicate of the University accorded recognition to the Madras Veterinary College as a constituent College qualified to impart instruction for the degree of Bachelor of Veterinary Science and the degree course has been introduced with effect from the current academic year. In addition to the routine work of examination of specimens in the different sections of the laboratory, the research staff was engaged in very interesting experiments in connexion with Haemorrhagic Septicæmia and rinderpest. Investigations were continued in regard to the reduction of dosage of serum in inoculation, in the use of goat-virus vaccination, in standardizing the method of treatment in nasal schistosomiasis. The number of specimens received and examined in the different sections of the laboratory, including the clinical laboratory, was 11,574, excluding the specimens examined in connexion with post-mortems research and class work. The Special Veterinary Investigation Officer continued to work during the year.

4. Several improvements were effected during the year to the Serum Institute and to the laboratory buildings with a view to enhancing their efficiency. The present accommodation is far from sufficient for the growing needs of the Institute. With a view to providing for future expansion the adjoining land under the control of the Labour Department was transferred to the Institute and necessary improvements are being carried out. One million one hundred and one thousand eight hundred unit doses of anti-rinderpest serum were manufactured in the Institute during the year as compared with one million three hundred and thirty-five thousand two hundred and fifty doses during the previous year. The quantity issued from the Institute during the year amounted to 1,135,800 unit doses against 1,206,900 doses during the previous year. The reduction is due to a fall in the incidence of rinderpest and to the facts that a smaller dose is now considered sufficient for

an inoculation and that goat-virus vaccination is being used in clean areas in place of serum-simultaneous inoculations. As a result of the investigations conducted by the Special Rinderpest Officer, the dosage of serum was reduced from 10 c.c. per 100 lb. body weight to 6 c.c. for cattle and 8 c.c. per 100 lb. for buffaloes. The reduced dosage resulted in a saving of 296,403 doses of 5 c.c. during the year. Experiments in connexion with the manufacture of anti-hæmorrhagic septicæmia serum were undertaken in the Institute. One thousand nine hundred and sixty unit doses of 15 c.c. each were manufactured and tested both in the laboratory and in the field. The results were reported to be very favourable. There was also a fall in the demand during the year for bull-virus but the demand for goat-virus increased considerably, the quantity of goat-virus supplied during the year being 61,450 c.c. as against 39,800 c.c. in the previous year. The number of animals protected with goat blood-virus alone during the year amounted to 61,114 against 32,911 during the previous year.

5. There was a further decline in the total mortality from contagious diseases, the deaths during the past quinquennium having fallen from 56,634 in 1931-32 to 23,214 in 1935-36; deaths from rinderpest were 28,412 in 1931-32 and 2,752 in the last year, this number being the lowest on record in the last forty-five years. It has also been reported that several cases which were reported to have died of rinderpest by the village officers were subsequently found by the veterinary assistants to be due to ordinary non-contagious diseases. Rinderpest is the dreaded scourge and was responsible for thousands of deaths in the past. It is gratifying to note that the disease has of late shown no great virulence and it will not be too much to claim that this satisfactory state is due not a little to the labours of the department. The figures of mortality from other diseases except from Anthrax have all shown a decline. The increase under Anthrax is negligible. On the whole, the condition of cattle was more satisfactory than in the previous year.

6. Propaganda work was continued on the usual lines by the departmental staff. The motor exhibition van obtained from the Public Health Department was able to tour only in a few districts but the results are reported to be satisfactory. Since the close of the year the Government have agreed to place another van at the disposal of the Veterinary Department, and it is hoped that the department will thereby be enabled to do more propaganda work.

7. The work of the touring staff and in the hospitals and dispensaries continued to be satisfactory. There has been an appreciable increase during the year in the total number of cases treated in the several veterinary institutions in the Presidency. The cases treated were 168,270 in 1930-31, while they increased to 253,230 in the year under review. Though there was an appreciable increase in the number of cases treated there was a decrease in the amount of fees realized owing to the admission of a large number of free cases into veterinary institutions. The touring staff treated 115,316

cases in 1935-36 against 56,541 in 1930-31. This increasing use during a period of comparative freedom from virulence of diseases affords ample evidence of the growing appreciation of the ryots in the efficacy of modern methods of treatment provided by the State through the Veterinary Department and the State expenditure on provision of veterinary relief will be more than repaid if this recognition grows further and larger use is made of the facilities placed at the ryot's disposal. District Veterinary Officers also continued to conduct inoculations against cattle disease independently of the touring staff. During the year under review 41,058 goat-virus inoculations and 6,657 other inoculations were performed by them.

8. At the instance of the Imperial Council of Agricultural Research a revised form of cattle mortality return has been introduced in the Presidency. Presidents of forest panchayats, village panchayats and irrigation boards have been requested to report cases of outbreak of cattle disease within five miles of their own villages. Cattle dealers have also been requested to report outbreaks that may come to their knowledge. It is hoped that as a result of these and of the increased zeal evinced by village officers, cattle mortality returns will be more accurate in future.

9. One important method of improvement of local breed of cattle consists in the selection of good bulls for stud purposes. It is difficult to ensure that only good bulls are used, especially when no legislative sanction is available to prohibit the use of effete bulls. The department has been successful in achieving some measure of success in persuading ryots to get their bulls castrated. The number of castrations has appreciably increased from 23,487 in 1930-31 to 70,576 in 1935-36. The Government hope that the ryots will realize the advantages of castration and get all but their stud bulls castrated especially now that the castrations are performed by the Burdizzo method which causes very little pain to the animals.

(By order of the Governor in Council)

C. J. PAUL,
Secretary to Government.

To the Director of Veterinary Services.
 „ the Director of Agriculture.
 „ the Accountant-General.
 „ all Collectors.
 „ the Board of Revenue.
 „ the Surgeon-General, through Education and Public Health Department.
 „ the Revenue Department.
 „ the Public Works Department.
 „ the Government of India, Department of Education, Health and Lands (with C.L.).
 „ the Secretary, Imperial Council of Agricultural Research (with C.L.).
 „ the Director, Imperial Institute of Veterinary Research (with C.L.).
 Press.