



ANNUAL ADMINISTRATION REPORT
OF THE
MADRAS CIVIL VETERINARY
DEPARTMENT

FOR THE YEAR

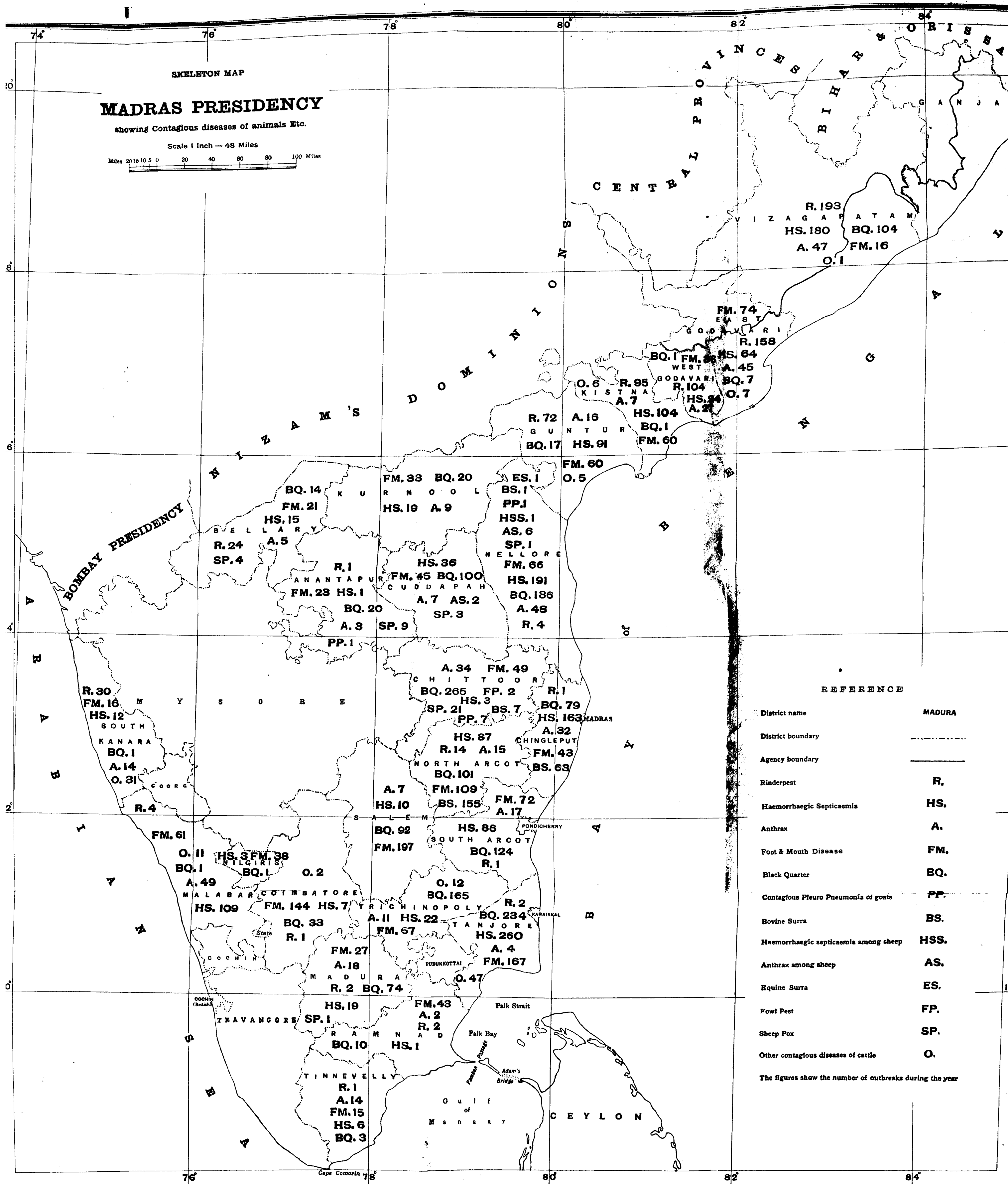
1936-37

MADRAS

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1937



REFERENCE

District name	MADURA
District boundary	-----
Agency boundary	-----
Rinderpest	R.
Haemorrhagic Septicaemia	HS.
Anthrax	A.
Foot & Mouth Disease	FM.
Black Quarter	BQ.
Contagious Pleuro Pneumonia of goats	PP.
Bovine Surra	BS.
Haemorrhagic septicaemia among sheep	HSS.
Anthrax among sheep	AS.
Equine Surra	ES.
Fowl Pest	FP.
Sheep Pox	SP.
Other contagious diseases of cattle	O.
The figures show the number of outbreaks during the year	

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ANNUAL ADMINISTRATION REPORT OF THE MADRAS CIVIL VETERINARY DEPARTMENT FOR THE YEAR 1936-37.

I. STAFF.

(a) Administration.

I continued to be in charge of the Department throughout the year. In the course of my tours during the year, I inspected as usual, all the 12 District Veterinary Offices, the Madras Veterinary College, Serum Institute and the office of the Veterinary Investigation Officer. I inspected 71 Veterinary institutions and 65 touring billets besides 11 Probationary Veterinary Assistant Surgeons, the Rajah's Veterinary hospital at Vizianagram and the Zamin-dar's Veterinary dispensary at Kannivadi (private institutions). I selected sites for constructing permanent buildings for the Veterinary dispensaries at Cannanore and Dindigul and a building for shifting the Veterinary dispensary at Tellicherry. I inspected the permanent buildings for the Veterinary hospital, Bezvada and Dharapuram while under construction. I interviewed the Collector of Kurnool and the District Forest Officer, Kurnool in connexion with the cattle penta work on the Nallamalais. I inspected the Government *Livestock*, viz., Forest elephants at Kargudi, Police horses at Vellore and Agricultural Farm animals at Coimbatore. I conducted a Departmental enquiry into the charges against a Veterinary Assistant Surgeon. I met the Anamalai Planters' Association, advised them on Veterinary matters, attended the cattle show at Valparai and acted as one of the judges at the show. I attended the meetings of the Advisory Board of the Imperial Council of Agricultural Research, both at Simla and Delhi and also the Animal Husbandry Wing meeting held at Madras. I visited the Punjab Veterinary College to acquaint myself with its working. I served as President of the Board of Examiners constituted by Government to conduct both the Refresher Course and the Professional examinations at the Madras Veterinary College.

(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. Mr. T. J. Hurley held the post of Principal, Madras Veterinary College, except for a period of four months and 28 days from 2nd July 1936 when he was on leave with permission to prefix the midsummer vacation from 2nd April 1936 to 30th June 1936 and the holiday on 1st July 1936.

(c) Madras Veterinary Service.

3. M.R.Ry. Rao Sahib K. Kailasam Ayyar Avargal was in charge of the Serum Institute during the year except for the period from 2nd July 1936 to 30th November 1936 when he acted as

Principal, Madras Veterinary College. 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 from 11th July 1936 to 25th August 1936 during which period he was on leave and no substitute was appointed. M.R.Ry. Rao Sahib M. Anantnarayan Rao Avargal held the post of Lecturer in Parasitology, Madras Veterinary College, except for a period from 9th September 1936 to 8th November 1936 during which period he was on leave and no substitute was appointed. Mr. A. Ramachandra Ayyar was in charge of the Madanapalle Circle from 1st April 1936 to 25th May 1936 when he was relieved to proceed to Madura where he held charge of the District Veterinary office till the date of his retirement on 10th February 1937. Mr. K. S. Nair held the post of Lecturer in Surgery, Madras Veterinary College. Mr. W. J. D'Costa was on leave throughout the year preparatory to his retirement on 24th June 1937. Mr. A. K. Mitra acted as Lecturer in Pathology and Bacteriology, Madras Veterinary College, till the forenoon of 26th September 1936 when he was posted to the Madras Circle where he remained in charge till the end of the year. Mr. C. Venkataratnam Chetti held charge of the Bezwada Circle throughout the year except from 1st April 1936 to 7th April 1936 when he was on leave. Mr. G. A. Ajwani remained under suspension during the year. Mr. C. S. Murti was in charge of the Madras Circle from 1st April 1936 to 30th June 1936 when he was relieved to act as Superintendent, Serum Institute. After relief at the Serum Institute, he was in charge of the Rajahmundry Circle from 10th December 1936 till the end of the year. Mr. T. S. Alagappa Pillai held charge of the Nellore Circle throughout the year except during the periods from 15th May 1936 to 14th September 1936 and 9th November 1936 to 3rd December 1936 when he was on leave. Mr. A. L. N. Somayajulu Pantulu continued to work in the Orissa Province. Mr. K. S. Natesa Ayyar held charge of the Coimbatore Circle throughout the year. Mr. K. Seshagiri Rao was in charge of the Bellary Circle from 1st April 1936 to 4th January 1937 when he went on leave for one month and on its expiry, was posted to Madanapalle Circle where he remained in charge from 12th February 1937 to the end of the year. Messrs. H. N. Chelva Ayyangar and M. A. Rangaswami Ayyar continued to hold the posts of Lecturers in Anatomy and Physiology, Madras Veterinary College, respectively, throughout the year. Mr. A. Castelino was in charge of the Calicut Circle throughout the year. Mr. M. Sundaranathan continued to be Lecturer in Pharmacology, Madras Veterinary College, throughout the year. Mr. M. Ponnayya who completed his probation in the Madras Veterinary Service held charge of the Vizagapatam Circle from 1st April 1936 to 17th December 1936 when he was transferred to Trichinopoly Circle and he remained in charge from 27th December 1936 to the end of the year.

4. Mr. E. O. Longley, B.Sc., M.R.C.V.S., who was newly appointed on contract acted as Lecturer in Pathology and Bacteriology at the Madras Veterinary College from the date of his arrival, 26th September 1936, to the end of the year.

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

- (1) Mr. R. Swaminathan.
- (2) „ S. S. Thitharappa Mudaliyar.
- (3) „ L. Kumaraswami Pantulu.
- (4) „ P. I. Chakko.
- (5) „ T. Vinayakam.
- (6) „ T. Raghavan.

Mr. S. S. Thitharappa Mudaliyar was reverted to his substantive appointment as Veterinary Assistant Surgeon in the selection grade from 6th January 1937.

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, Forest Department, throughout the year.

7. *Touring done 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	..	199
„ Rajahmundry	..	204
„ Bezwada	..	194
„ Nellore	..	205
„ Bellary	..	192
„ Madanapalle	..	194
„ Vellore	..	229
„ Coimbatore	..	190
„ Calicut	..	182
„ Madura	..	190
„ Trichinopoly	..	192
„ Madras	..	214

8. *Professional work carried out by District Veterinary Officers.*—41,931 goat virus vaccinations and 15,384 other inoculations were performed by District Veterinary Officers during the year, of which 28,969 and 13,378 were done along with Veterinary Assistant Surgeons. While at headquarters they attended the local veterinary institutions, taking a personal interest in the treatment of cases and helping the Veterinary Assistant Surgeons with clinical diagnosis and microscopical examinations. They inspected the Government livestock and breeding bulls stationed at different places whenever there were opportunities to do so and gave advice regarding exercise, food, etc. They personally attended to some outbreak

reports and treated cases. They visited model villages selected by District Economic Councils and did propaganda work by arranging lectures and demonstrations by the Burdizzo method of castration and explaining to the ryots the methods of improving livestock. They brought to the notice of the rich and influential ryots the appeal of H.E. the Viceroy regarding the improvement of livestock and the importance of the maintenance of good quality breeding bulls in places where none is now kept. Some of the District Veterinary Officers accompanied the motor vans of the department in their tours to some of the villages and assisted the Veterinary Assistant Surgeons in propaganda work and magic lantern demonstrations.

The District Veterinary Officer, Madras, treated 5 ponies and a horse for Surra. The District Veterinary Officers, Calicut and Madras malleined some mules belonging to the Military Department with negative results. The District Veterinary Officer, Madura tested a bull at Government Agricultural Research station, Koilpatti with tuberculin (avian) for Johne's disease with negative results.

Mr. R. Swaminathan, a District Veterinary Officer enquired into the unusual casualties that occurred among the castrated animals at Edamanal village in the Trichinopoly circle and conducted a postmortem on one of the carcasses of the castrated animals and concluded that the deaths were due to Sepsis and Peritonitis resulting from carelessness in post operation attendance. He also successfully treated 2 surra cases in ponies. He made a study of certain deaths in cattle which were being vaguely reported as due to diarrhoea and hoven. He attended three such reports in three different places where the mortality was heavy. The disease was found to be generally very slow and insidious in its onset with initial symptoms of digestive disturbance and very often, a fatal termination. The period of illness was reported to be a week or ten days but a few animals had died within a day or two with nervous symptoms. After a careful study of the clinical symptoms, blood examinations and post-mortem findings, he concluded that the disease was not of contagious nature and that the deaths were solely due to digestive disorders. He further recorded that the offending agent which caused this digestive disturbance was milled paddy bran containing an admixture of paddy husk. A detailed report on this was submitted to this office and a departmental leaflet on 'Feeding of cattle on paddy bran' in English and in the several vernaculars is under issue.

The dog suffering from Hepatazoon canis referred to in the previous year's report is said to have remained healthy and well till Mr. Swaminathan left the Trichinopoly Circle in December last.

The total number of specimens examined microscopically by the District Veterinary Officers was 3,349 as against 2,335 of the previous year.

(d) *Madras Veterinary Subordinate Service.*

9. The strength of the cadre of the Veterinary Assistant Surgeons on 31st March 1937 was 309 including the following temporary posts as against 282 at the end of March 1936:—

Veterinary Assistant Surgeons sanctioned for the	
Serum Institute ..	8
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 to Tuticorin ..	1
Touring billets sanctioned during 1934-35, 1935-36 and 1936-37 ..	42
Veterinary Assistant Surgeon for Veterinary Dispensary, Shiyali ..	1
Veterinary Assistant Surgeon for Veterinary Dispensary, Royapuram ..	1
Veterinary Assistant Surgeon for Veterinary Dispensary, Tiruturaipundi ..	1
Leave reserve posts at 6½ per cent of the temporary posts ..	2
Special Veterinary Assistant Surgeons for pentas duty.	2
Veterinary Assistant Surgeon for propaganda van No. II ..	1
Veterinary Assistant Surgeon sanctioned to the Madras Veterinary College ..	1
Total ..	62

309
62
247

10. The 309 posts were distributed as shown below during the year under report:—

(1) Itinerating	130 (plains).
Do.	3 (agency).
(2) In charge of institutions	110 (plains).
Do.	2 (agency).
(3) Leave reserve	32 (*)
(4) Attached to Head Office	1

(*) This number is made up of 10 permanent leave reserve, 20 temporary leave reserve for the permanent cadre and 2 temporary leave reserve for the temporary cadre. The 10 permanent leave reserve posts include one post held by Veterinary Assistant Surgeon E. R. Nagarajan. Government have been addressed to create a permanent post consequent on the reversion of this Veterinary Assistant Surgeon to this department from 1st April 1936 and their orders are awaited. The 20 temporary leave reserve posts for the permanent cadre include 3 officiating posts in the vacancies caused by the promotion of Messrs. M. A. Rangaswami Ayyar, A Castelino and M. Sundaranathan to the Madras Veterinary Service.

(5) Employed in the Madras Veterinary College.	12	
(6) Do. Serum Institute ..	8	
(7) Do. Agricultural Department ..	3	
(8) Do. 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	
(11) Special Veterinary Assistant Surgeons for pentas duty at Nallamalais ..	2	
(12) Attached to the propaganda van No. II ..	1	
Total ..	309	

In addition to the 309 posts mentioned above, Government have sanctioned two temporary posts of Assistant Lecturers to the Madras Veterinary College consequent on the introduction of the B.V.Sc. Degree Course.

Of the 6 supernumerary posts sanctioned consequent on the transfer of 9 posts to Orissa Province, 3 are held by permanent men of this department.

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 :—

- Mr. T. J. Hurley, Principal and Professor of Medicine.
- „ M. R. V. Panikkar, Lecturer in Hygiene, Resident Veterinary Officer and Personal Assistant to the Principal.
- „ M. Anantnarayan Rao, Lecturer in Parasitology.
- „ K. S. Nair, Lecturer in Surgery.
- „ H. N. Chelva Ayyangar, Lecturer in Anatomy.
- „ M. A. Rangaswami Ayyar, Lecturer in Physiology.
- „ M. Sundaranathan, Lecturer in Pharmacology.
- „ E. O. Longley, Acting Lecturer in Pathology and Bacteriology.

Mr. A. K. Mitra was on duty as acting lecturer in Pathology and Bacteriology till 26th September 1936 forenoon when Mr. E. O. Longley appointed on contract for a period of three years as Lecturer in Pathology and Bacteriology, relieved him and continued to hold the post till the end of the year.

(b) Training.

12. The students had full facilities for obtaining sound practical training in the various subjects included in the courses of instruction. As usual, they were deputed to the Serum Institute, for studying and gaining practical knowledge of the production of Rinderpest virus, anti-Rinderpest serum and Hæmorrhagic Septicæmia serum.

(c) Admission of Students.

13. Government in their Order, No. Press 501, Development, dated 28th March 1936, having sanctioned the introduction of the B.V.Sc. Degree course in the Madras Veterinary College from July 1936, the course was introduced from that date. In G.O. No. 728, Development, dated 8th May 1936, the number of students belonging to this Presidency to be admitted to the Degree and Diploma courses at the Madras Veterinary College was fixed at 30 (15 for the Degree and 15 for the Diploma course). In addition to the above, Government accorded permission to admit outsiders to the maximum number of 20 including students from Burma, both for the Degree and Diploma courses.

14. There was no change in the personnel of the Selection Committee constituted in G.O. No. 434, Development, dated 26th March 1935, for the selection of candidates for admission to the Madras Veterinary College. The same committee selected candidates for the B.V.Sc. course also, in accordance with the Government Memorandum No. 2451-I/36-1, Development, dated 11th June 1936. The committee met at Bezwada on the 26th and at Madras on the 29th June 1936 and selected 24 candidates (6 seats having already been reserved for students of the second-year class transferred to the B.V.Sc. course) both for the Diploma and Degree courses, as shown below :—

	Bezwada.				Madras.				Grand total.
	Graduates.	Intermediate.	School Leaving Certificate.	Total.	Graduates.	Intermediate.	School Leaving Certificate.	Total.	
Diploma course—									
Non-Brahman Hindus	..	..	3	3	..	1	3	4	7
Brahmans	..	..	1	1	..	3	1	4	5
Muhammadians	..	..	..	..	..	..	2	2	3
Anglo-Indians and Indian Christians.	..	..	..	..	..	..	1	1	2
								(Camb. certificate).	
Scheduled classes	..	..	..	..	..	..	..	..	..
	..	..	4	4	..	4	7	11	15
Degree course—									
Non-Brahman Hindus	..	2	..	2	..	2	..	2	4
Brahmans	..	3	..	3	..	..	..	1	3
Muhammadians	..	..	..	..	..	1	..	1	1
Anglo-Indians and Indian Christians.	..	..	..	..	..	1	..	1	1
Scheduled classes	..	..	..	..	..	..	..	..	..
	..	5	..	5	..	4	..	4	9

Two candidates at Bezwada centre and 16 at Madras were placed in the waiting list.

- (i) The four candidates selected at Bezwada and 9 out of 11 selected at Madras for the Diploma course joined college thus leaving 2 seats vacant in the Diploma course.
- (ii) Three of the 5 candidates selected at Bezwada and the 4 selected at Madras for the Degree course joined the college.
- (iii) Of the 6 students of the second-year class transferred to the Degree course, only 5 joined.
- (iv) Of the 20 seats allotted for outsiders both for the Diploma and Degree courses, 7 were filled by students for the Diploma course and 6 by students for the Degree course. Of these 13, 8 were Burman students (5 for Diploma and 3 for the Degree course).

15. All the above unfilled seats out of the total of 50 allotted for both the courses for Presidency and non-Presidency students, were later filled up by Presidency candidates for the Degree course. Thus, at the commencement of the session, there were 50 students in the Diploma and Degree first-year classes. During the course of the year, one of the Burman students admitted to the Degree course was reverted to the Diploma class by reason of his qualification not being recognized by the Madras University. One Christian student admitted to the Diploma course died and the Muhammadan student admitted to the Degree course resigned his seat. Including two failed students of last year in the diploma course, the strength of the first-year class at the end of the year was 50, consisting of 28 Degree course and 22 Diploma course students.

16. The strength of all the three classes at the end of the year was 101 (50 in class A, 27 in class B and 24 in class C) as against 96 of last year, arranged according to the following communities :—

Non-Brahman Hindus	..	..	..	29
Brahmans	..	..	..	32
Anglo-Indians and Indian Christians	..	..	..	14
Muhammadans	..	..	..	4
Burmans, etc.	..	..	..	22
Total ..				101

(d) Scholarships.

17. The 4 scholarships of the first-year class were distributed among 3 members of the backward classes and 1 Christian of the Diploma first-year class.

(e) Professional Examinations.

18. In pursuance of G.O. Ms. No. 1626, Development, dated 20th November 1935, sanctioning the holding of the supplemental examinations for all the three classes of the Madras Veterinary College by a single Board of Examiners consisting of the Director of Veterinary Services, Madras; Principal, Madras Veterinary College, and one senior officer of the Madras Veterinary Service, the supplemental examinations for all the three classes were conducted on the 9th, 10th and 12th to 14th October 1936. Messrs. P. T. Saunders, Director of Veterinary Services, Madras, K. Kailasam Ayyar, Acting Principal, Madras Veterinary College, and M.R.V. Panikkar, Lecturer, Madras Veterinary College, constituted the Board of Examiners. The results of the examination were as follows :—

		Number appeared.	Number passed.
Class A	.. ..	4	4
" B	.. ..	4	4
" C	.. ..	7	6

The Board considered the results, on the whole, to be satisfactory.

19. The Government appointed the following officers to constitute the Board of Examiners for conducting the annual examinations of the Diploma course of the Madras Veterinary College:

President.

(1) Mr. P. T. Saunders, Director of Veterinary Services, Madras.

Members.

- (2) Mr. T. J. Hurley, Principal, Madras Veterinary College.
- (3) M.R.Ry. Rao Sahib K. Kailasam Ayyar, Superintendent, Serum Institute.
- (4) " M. R. V. Panikkar Ayyar, Lecturer in Hygiene, Madras Veterinary College.
- (5) " Rao Sahib M. Anantnarayan Rao Ayyar, Lecturer in Parasitology, Madras Veterinary College.

20. The examinations were held from the 19th to 30th March 1937 excluding the Sundays on 21st and 28th March 1937 and the results are as shown below :—

		Number appeared.	Number passed.
Class A	.. ..	44*	22
" B	.. ..	27	18
" C	.. ..	24	15

* Of the 50 students in class A at the end of the year, 5 students of the second year class transferred to the first year B.V.Sc. course were exempted from appearing for the first professional examination in 1937 which they had passed in March 1936 and one other student did not appear for the examination. The Board considered that the results of the examinations were, on the whole, satisfactory.

(f) Refresher course.

21. Nine students (6 from the Civil Veterinary Department, Madras; 2 from Hyderabad and 1 from the Federated Malay States) underwent the Refresher course this year. Towards the end of the year these students were examined by a Board of Examiners appointed by Government.

(g) Hostel, Health and Athletics.

22. In accordance with the recommendations of the University Commission which inspected this College in the previous year in connexion with the recognition of this College by the University of Madras for the introduction of the Degree of Bachelor of Veterinary Science of the University, the number of students to be accommodated were limited to four in the bigger rooms and two in the smaller ones. On an average, 65 students (including 24 non-Presidency students of this College) resided in the hostel during the year under report. Two messes (vegetarian and non-vegetarian) were run in the hostel under the supervision of the Warden. For the recreation of the residents, facilities were afforded for indoor games and the supply of newspapers, magazines, etc., continued as usual.

The Principal was the President of the Athletic Association and Mr. Sundaranathan, as Sports Secretary, was in charge of the athletic activities of the College, with a representative Committee of ten students to assist him in his work.

The students exhibited great enthusiasm and took part regularly in all the outdoor and indoor games provided for them. They also received physical instruction regularly from the Physical Instructor appointed this year. The discipline and health of the students were most satisfactory.

(ii) Hospital.

23. Mr. K. S. Nair, Lecturer in Surgery was in charge of the College Hospital throughout the year. The cases treated and surgical operations and castrations performed during the last three years are tabulated below :—

TABLE I.
(Cases treated.)

		1934-35.	1935-36.	1936-37.
In-patients—				
Bovines	.. ..	303	484	449
Equines	.. ..	176	197	275
Others	.. ..	317	354	458
Out-patients—				
Bovines	.. ..	1677	2111	2311
Equines	.. ..	165	192	186
Others	.. ..	4245	4106	4998
Grand total	.. ..	6883	7444	8677
Daily average attendance	.. ..	91.83	105.91	123.47

TABLE II.

		Operations.		1936-37.	
		1934-35.	1935-36.	Major operations.	Minor operations.
Bovines	.. ..	44	145	262	283
Equines	.. ..	4	28	7	26
Others	.. ..	32	341	17	412
Total	.. ..	80	514	286	721

TABLE III.

		Castrations.		1936-37.
		1934-35.	1935-36.	
Bovines	.. ..	12	12	16
Equines	.. ..	3	5	6
Others	.. ..	29	22	16
Total	.. ..	44	39	38

From the above figures it will be seen that there has been a considerable increase in the total number of cases treated and operations performed.

24. X-Ray photographs of 5 equines, 25 canines and 1 fowl were taken during the year as against 7 equines, 15 canines and 1 bovine of the previous year. Two X-Rayed cases suspected for fracture of the transverse processes of the vertebrae were confirmed by post-mortem examination. A hound which was positive for spirocerca sanguinolenta was given Barium sulphate emulsion by the mouth and an X-Ray photo was taken, both before and after giving the emulsion, to see if any shadow of the tumour could be observed. No distinct shadow could be observed though there was a calcified tumour on post-mortem examination.

25. The Veterinary dispensary at Rayapuram was moved on 1st September 1936 to a more suitable rented building with residential quarters for the Veterinary Assistant Surgeon in charge and is now located in Tondiarpet. The number of cases treated at the dispensary during the past two years is tabulated below :—

Year.	Equines.	Bovines.	Others.	Total.	Daily average attendance.
1935-36	57	1197	4086	5340	44.33
1936-37	41	1351	3248	4640	45.62

The fall in the number of admissions is presumably due to the moving of the dispensary to a new locality. Sixty-five cases, which number includes 21 cases suspected for rabies, were transferred to

the College Hospital. The number of operations performed in this dispensary was 381 of which three were major and the rest minor. Two hundred and eighty-seven specimens were sent to the College laboratory for microscopical examination.

(iii) *Shoeing forge.*

26. Eight hundred and fifty-six horses were shod and 102 repairs were done in the year as against 1,016 and 51 respectively of the previous year. The profit realized was Rs. 543-6-9 as compared with Rs. 907-11-3 of the previous year. The fall in profit is due to the smaller number of private horses shod and increase in the cost of materials. Further, in respect of City Police horses, the Government have sanctioned the reduction of fee from Rs. 2-10-0 to Rs. 1-8-0 per horse, provided the Police Department supply the shoes required for shoeing the horses. The students had all facilities in receiving practical instruction in shoeing. Government have sanctioned during the year the training of two apprentices in the art of shoeing.

(iv) *Fees.*

27. The number of cases admitted and the fees realized during the years 1934-35 to 1936-37 are given below :—

			Fees realized.	
			RS.	A.
Number of cases admitted.				
1934-35	..	6,883	4,087	9
1935-36	..	7,444	4,021	8
1936-37	..	8,677	5,103	3

The increase in the fees realized is due to the increase in the number of cases admitted during the year.

(v) *Laboratory.*

28. M.R.Ry. Rao Sahib M. Anantnarayan Rao Avargal was in charge of the Parasitology section throughout the year except for a short period when he was on leave.

Mr. A. K. Mitra was in charge of the Pathology and Bacteriology sections till the forenoon of 26th September 1936 when Mr. E. O. Longley relieved him. The latter held charge of the section till the end of the year.

29. (a) *Pathology, Bacteriology and Parasitology sections.*—Specimens received and examined in the laboratory, including the clinical laboratory are tabulated below. These exclude the specimens examined in connexion with post-mortem examinations, biological tests in routine diagnosis, research and class work.

	Pathology and Bacteriology section.	Parasitology section.	Clinical laboratory.	Total.
From the staff of the Civil Veterinary Department	2,260	2,360	..	4,620
From the wards of the Madras Veterinary College hospital	238	..	5,003	5,241
From dairy and other farms	83	..	..	83
„ the Corporation of Madras	10	..	155	165
„ Agricultural Department	18	15	..	33
„ Indian States	1	..	..	1
„ Coorg	27	..	..	27
„ the Forest Department	4	1	..	5
„ the Veterinary Investigation Officer, Madras	46	..	..	46
„ Other sources	..	142	..	142
Total	2,687	2,518	5,158	10,363

30. Of the 2,687 specimens examined in the Pathology section as against 2,081 in the previous year, 927 were confirmed for various diseases suspected, of which 459 were Bacteriological and 468 Pathological conditions.

31. Of the 2,518 specimens examined in the Parasitology section as against 4,271 in the previous year, 1,292 were confirmed for various diseases suspected. The fall in the total number of specimens examined in this section is due to the examination of specimens received from the College ward and Madras Corporation in the Clinical laboratory instead of in this section and to the completion of the work on nasal schistosomiasis and cutaneous myiasis.

Features which deserve special mention.

32. *Pathology and Bacteriology section :*

Johne's disease.—The presence of this disease in 10 cows belonging to the Hosur Cattle Farm and one cow of the Central Jail, Vellore, was confirmed microscopically.

Tuberculosis.—The presence of this disease was established in two dogs, one a patient of the Veterinary dispensary, Rayapuram and the other a patient of the Veterinary hospital, Coimbatore. Tuberculosis of the intestines in a cow belonging to the Agricultural College, Coimbatore, was also recorded.

Contagious abortion.—Five samples of sera from cows of the Hosur Cattle Farm, Agricultural College, Coimbatore, Imperial Dairy Farm, Wellington and Veterinary dispensary, Anakapalli were received for serological test for contagious abortion. These samples of sera were tested against strains of B. Abortus (Bang) with negative results.

Rabies.—The total number of brains of animals suspected for Rabies examined was 109 as tabulated below :—

	Positive.	Inconclusive.
Canine	67	29
Bovine	5	..
Ovine	..	1
Equine	1	2
Feline	..	3
Others	..	1 (Mongoose).
Total ..	73	36

Actinomycosis.—Infection with actinomyces bovis was diagnosed in four instances as detailed below :—

- From the lesions in the gum of a cow.
- From the lesions in the nostrils of a bullock.
- From the lesions in the submaxillary region of a bullock.
- From the lesions in the gum of a she-buffalo.

Rhinospiridiosis.—A growth from the nostrils of a bull revealed Rhinospiridium.

Neoplasms.—A large number of these were examined and the following were of interest among them :—

- Growth in the abdomen of a bullock was round-celled Sarcoma.
- Growth at the posterior end of hard palate of a bitch was round-celled Sarcoma.
- Carcinomatous change was observed round an unidentified encysted parasite (Linguatula) in the buccal mucosa of a bitch.
- Carcinoma of the horn of a bullock was found to contain numerous ova of schistosome in its substance.
- A highly malignant type of carcinoma was recorded from the leg of a rabbit.

In addition to the above, the occurrence of carcinoma was noted in the following infrequent situations :—

- Poultry—Leg and feet.
- Equines—External female genitalia, abdomen and nostrils.
- Bovines—Hip, fetlock, foot and nostrils.

Post-mortems.—Post-mortem examinations conducted on carcasses of animals received from the wards and outside are tabulated below :—

Canines	100
Poultry	21
Felines	9
Equines	8
Bovines	8
Monkey	1
Total ..	147

The above number excludes post-mortems conducted on laboratory animals used for experiments, biological tests, etc.

In an outbreak of "Ship pneumonia" which occurred among horses bound for Poona from Australia, an acute pleuropneumonia was found in three cases at autopsy.

Autogenous vaccines.—Autogenous vaccines were prepared and supplied for 40 animals during the year as against 23 during the previous year. The reports received after treatment are encouraging, 33 having been cured of the infection (82.5 per cent) while no improvement was shown in 7 (12.5) per cent. The vaccine was not used in 5 per cent of the cases as the animals discontinued attendance. Bovine lymphangitis stock vaccine was supplied to 217 bovines with satisfactory results.

Urine Hormone.—One hundred and forty-six ounces of urine hormone from pregnant cows were prepared and supplied for the treatment of 6 bulls and 10 cows. Results of treatment received so far in respect of 4 bulls and 3 cows do not appear to be encouraging, an experience met with in the previous year also.

Biological tests.—Biological tests were conducted with the materials received from cases suspected for Blackquarter, Anthrax, Hæmorrhagic Septicæmia, fowl cholera, etc., whenever the result of examination of smears was inconclusive. The number of such tests conducted is tabulated below :—

	Positive.	Negative.	Total.
Blackquarter	48	29	77
Anthrax	1	30	31
Hæmorrhagic Septicæmia	18	50	68
Fowl cholera	..	11	11
Pseudo-fowl-pest	14	7	21
Total ..	81	127	208

In order to enable the students to obtain clinical knowledge of the more common infectious diseases of cattle met with in the field (Blackquarter, Anthrax and Hæmorrhagic Septicæmia) suitable animals were inoculated with materials obtained from affected animals or from cultures of the causal organisms. The symptoms manifested by these animals while suffering from the disease and the lesions set up in them were demonstrated on autopsy. These demonstrations were in addition to those at the Serum Institute.

During the year 92 specimens in the form of smears and swabs from fowls suspected for cholera were received for examination. It is interesting to record that only four of these were positive for fowl cholera, the rest being negative. Of the 27 specimens received from fowls suspected to have died of pseudo-fowl-pest, ten were positive and the rest negative; out of seven and one specimens received from fowls suspected for fowl typhoid and fowl pox respectively, none was positive for the disease suspected.

This section continued to supply during the year all the media required by the Veterinary Investigation Officer, Madras, on requisition from him.

Parasitology section.

The following findings are of interest :—

- (1) Trypanosomes (T. Evansi) in a blood smear from a tiger belonging to a circus troupe at Cuddalore.
- (2) A combined infection of Trypanosoma theileri and Babesia bigemina in a calf aged 15 days.
- (3) The co-existence of Setaria digitata in the anterior chamber of the eye and the Thelazia rhodesii on the mucous membrane of the eye in the same bullock.
- (4) Oocysts of Eimeria faurei from goats.
- (5) The identification of a species of Leucocytozoon from a fowl sent by Mr. A. R. Kuppuswami, Veterinary Inspector, Federated Malay States, was confirmed.
- (6) A species of microfilaria in the blood of a fowl received from the Federated Malay States was recorded.
- (7) During the year, acute outbreaks of Trypanosomiasis in cattle were met with in North Arcot and Chingleput districts. It is interesting to note that this area was found to be a focus of Trypanosomiasis so far back as 1931 and the fact has now been established by the recent outbreaks of the disease in that area.

The following parasites were added to the museum :—

- (1) Oesophagostomus brumpti (from a macacus monkey).
- (2) Streptophragus species (from a macacus monkey).
- (3) Diphyllbothrium decipiens (from a cat).

33. (b) *Clinical Laboratory*.—Mr. L. S. Parameswara Ayyar was in charge of this Laboratory throughout the year. Smears, fæces, scrapings, etc., received from the different wards of the College hospital and the cattle depots of the Corporation of Madras were examined in this laboratory and reported upon. The students of the Refresher course and of classes B and C in batches were given demonstrations on the actual preparation and examination of materials for laboratory diagnosis and they had ample material for their practical study. The total number of specimens examined in the clinical laboratory was 5,158 as against 5,222 of the previous year.

34. (c) *Biology section*.—Mr. M. Dharmarajan, Assistant Lecturer in Biology was in charge of this section from the beginning of July till the end of the year under the supervision of the Lecturer in Parasitology. Collections of specimens of biological interest from various localities were frequently made. Over 150 specimens have so far been acquired, all of which have been identified and preserved. A novel feature of the museum is the inclusion in it of vertebrate animals which are rendered transparent. This procedure is of immense value in staining bones and facilitating their study *in situ*.

35. (d) *Physiology Laboratory*.—Mr. M. A. Rangaswami Ayyar held charge of this laboratory during the year under report. Seven hundred and thirty specimens were examined during the year as against 374 in the previous year. The specimens received comprised 484 samples of urine, 241 of blood, 4 of milk and 1 of ascitic fluid.

Details of Urine examination—

	Horse.	Cattle.	Dog.	Elephant.	Camel.	Total.
From the college wards.	25	7	419	..	..	451
Do. Corporation	..	..	..	3	1	4
Do. zoo.	..	..	..	..	..	..
Do. mufassal..	3	21	4	1	..	29

The following abnormal constituents were present in 309 specimens of urine examined :—

	Horse.	Cattle.	Dog.	Elephant.	Total.
Album in	..	8	21	206	235
Sugar	..	..	1	..	1
Bile salts	..	..	3	12	16
Bile pigment	..	..	..	23	23
Blood	..	5	19	10	34

Nothing abnormal was found in the milk and ascitic fluid examined.

Chemical analysis of blood was conducted in 241 specimens. Sugar was estimated in 168 specimens (equine 35, bovine 117, canine 16), calcium in 72 specimens (equine 2, bovine 70) and urea in one specimen.

In order to ascertain whether any variation exists in the sugar and calcium contents of the blood at different bleedings, specimens of blood from buffaloes taken at regular intervals were obtained from the Serum Institute and their sugar and calcium contents estimated. The values of these at different bleedings did not show any abnormal variations. The specimens of blood examined are included in the figures furnished above.

36. (e) *Chemistry section*.—Mr. V. Mahadevan, Assistant Lecturer in Chemistry, was in charge of this section from the beginning of July till the end of the year under the supervision of the Lecturer in Physiology. The equipment of this laboratory was increased to provide for the individual practical work for the B.V.Sc. and Diploma students.

37. (f) *Anatomy section*.—Mr. H. N. Chelva Ayyangar was in charge of this section throughout the year.

Fifty-three bovines were destroyed and injected with preservatives during the year for demonstration and dissection purposes.

Seventeen specimens were received for examination by dissection and report. Dissection notes were made and the interesting portions of the specimens were transferred to the Surgical section for mounting them as surgical specimens. The following are some of the interesting findings in the materials examined :—

- 1 Five cases of Osteoporosis in horses.
- 2 Navicular disease—all four feet (horse).

This is the first case in which all the four navicular bones were noticed to have become diseased.

38. (g) *Pharmacology section*.—Mr. M. Sundaranathan was in charge of this section throughout the year. The second-year students were given practical instruction in compounding and dispensing. The total number of prescriptions dispensed in the Pharmacy was 23,795 as against 18,177 of the previous year.

III.—SERUM INSTITUTE.

(a) Staff.

39. M.R.Ry. Rao Sahib K. Kylasam Ayyar Avargal was in charge of the Institute during the year except for the period from 2nd July 1936 to 30th November 1936 when Mr. C. S. Murthi held charge.

(b) Accommodation and equipment.

40. Improvements to the adjacent land are still in progress. A shed for the weigh-bridge is under construction and the machine will be transferred to its new location shortly. Various other minor improvements to the laboratory buildings and cattle sheds were carried out during the year.

(c) Livestock and fodder.

41. The table given below shows the number of animals purchased, the number that died and the number of discontinued animals disposed of during the year :—

	Purchased.	Died.	Disposed of.
Adult he-buffaloes	1,096	120	944
Buffalo-calves	585	289	315
Sheep and goats	290	288	2

Of the discontinued animals, 1 buffalo and 54 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 based on tenders.

(d) Serum section.

Anti-Rinderpest Serum.

42. During the year 829 adult he-buffaloes were used as serum makers and 102 calves as serum testers. The stock of anti-rinderpest serum on hand at the beginning of the year was 3,002 bottles, each bottle containing 50 unit doses of 5 c.c. each. Twenty-seven thousand one hundred and twenty bottles or 1,356,000 doses comprising 33 brews were manufactured and completed during the year as against 1,101,800 unit doses during the previous year. All the brews of serum were of the required potency.

The total quality of anti-rinderpest serum issued including the quantity used in the Institute for testing purposes amounted to 28,064 bottles or 1,403,200 unit doses, the quantity issued during

the previous year being 1,135,800 unit doses. The requirements of the field staff, on account of the increase in the incidence of rinderpest in the Presidency, necessitated a more accelerated production contrary to the forecast made in the last year's report of a probable decline in the demand for serum.

There was no sale of serum on outside demand during the year.

Anti-Hæmorrhagic Septicæmia Serum.

43. The number of adult he-buffaloes used for the manufacture of this serum was 267. The stock of Anti-Hæmorrhagic Septicæmia Serum on hand at the beginning of the year was 1,438 bottles or 28,760 unit doses of 15 c.c. each. Eight thousand and twenty-five bottles or 160,500 unit doses comprising 10 brews were manufactured and completed during the year. Issues during the year amounted to 7,597 bottles or 151,940 doses inclusive of 960 doses used in this Institute.

The potency of Anti-Hæmorrhagic Septicæmia Serum is gauged by its agglutinating titre. The agglutinating titre of all the samples of Anti-Hæmorrhagic Septicæmia Serum both separately at each bleeding and the whole brew combined was observed to be uniformly good. All these samples of anti-hæmorrhagic septicæmia serum were from animals immunized first with killed and then with live cultures of *Pasteurella Bovisepticus* and bled for serum on the ninth day after the live culture, and these samples of serum, with very few exceptions, agglutinated in dilutions from 1-25 to 1-400. In order to ascertain whether there was any difference in the agglutinating titre between the serum so obtained and the serum obtained after the killed culture only, two calves were given 20 c.c. each of killed culture (48 hours growth in broth) and both were bled for serum on the seventh and ninth day and the serum of each of these was separately tested by agglutination in 1-25, 1-50, 1-100, 1-200 and 1-400 dilutions. No agglutination was observed in any of the dilutions with the seventh day serum of both the calves. The ninth day serum of both the calves showed agglutination in 1-25 and 1-50 dilutions only. This is an indication of the quality of serum obtained from animals immunized with live culture as against that drawn after giving killed cultures only.

In order to find out what correlation, if any, there was between the condition of hæmorrhagic septicæmia serum makers and the potency of the serum obtained from them, serum from four animals in good condition, one in poor condition and one in fair condition was drawn and tested separately by agglutination in usual dilutions from 1-25 to 1-400. The serum from animals in good condition showed water clear reaction in all the tubes while that from the animal in poor condition showed water clear reaction in 1-25 and 1-50 dilutions only and the serum from the animal in

fair condition showed water clear reaction in 1-25, 1-50 and 1-100 dilutions. This may be taken to mean that the general condition of serum makers has a direct bearing on the quality of serum produced by them.

On 22nd June 1936, hæmorrhagic septicæmia serum maker No. 96 showed Hæmoglobinuria and rise of temperature after the first bleeding. Blood examination revealed the presence of Plasmodium Bubalis. This animal was exempted from further bleedings to watch the natural course of the disease. But for the rise of temperature and the Hæmoglobinuria, it showed no other discomfort and the colour of the urine cleared up spontaneously on the following day and it was feeding and drinking normally throughout. This animal did not receive any treatment.

(e) *Virus section.*

Bull Virus.

44. As the demand for Anti-Rinderpest Serum increased, so also was there a rise in the demand for bull virus from the staff as compared with the figures for 1935-36. Five hundred and eight calves were used for the production of virus including 99 calves used as controls for the two strains of goat virus dealt with separately below. Out of these 508 calves, one calf, i.e., 0.2 per cent was infected with spirochaetes, 23 calves, i.e., 4.5 per cent revealed the existence of Trypanosomes in them, 53 calves, i.e., 10.4 per cent harboured Microfilaria and 17 were non-reactors. The total mortality among virus producers was 285 or 56 per cent.

The quantity of bull virus issued during the year was 181,450 c.c. as against 151,300 c.c. in the previous year.

Goat Virus.

45. Both the Madras and Muktesar strains were continued and the total number of goats used for both the strains was 292. Up to the end of the year 237 passages of the Madras strain and 182 passages of the Muktesar strain had been completed. There was no appreciable fall or decline in the virulence of the virus either for bovines or ovines. The mortality in goats was 290 or 99 per cent. Of 50 controls (calves) used for the Madras strain, there was a mortality of 13 calves or 26 per cent, and out of the 49 controls for the Muktesar strain, there was a mortality of 10 calves or 24 per cent.

The quantity of goat virus supplied during the year under report was 55,050 c.c. as against 61,450 c.c. of the previous year.

(f) *Laboratory Work (Routine).*

Microscopic Work.

46. The number of specimens examined under the microscope was 16,150 blood smears and 29 faeces, and of these 8,590 proved positive as detailed below:—

Blood smears:—Theileria, 8,230, Trypanosomes, 140, Microfilaria, 140, Spirochaetes, 3, Plasmodium Bubalis, 6, Theileria and Trypanosomes, 2, Theileria and Microfilaria, 6, Trypanosomes and Spirochaetes, 1, Hæmorrhagic Septicæmia organisms, 29, Staphylococci, 5, Theileria and Spirochaetes 1.

Faeces:—Ova of Strongyles, 1, Coccidia and Ova of Ascaris, 2, Coccidia, 24.

47. *Post-mortem*.—Post-mortem examinations were conducted on 667 carcasses of animals that died in the Institute. The following is the detailed list of parasitic infections recorded:—

(1) Paramphistomum	...	...	...	26
(2) Sarcocystis Blanchardi	...	...	...	66
(3) Echinococcal Cysts	...	...	...	8
(4) Fasciolæ	...	...	...	9
(5) Echinococcal Cysts and Fasciolæ	...	...	...	1
(6) Paramphistomum and Sarcocystis Blanchardi	...	...	...	32
(7) Paramphistomum and Echinococcal Cysts	...	...	...	1
(8) Sarcocystis Blanchardi and Echinococcal Cysts	...	...	...	10
(9) Echinococcal Cysts, Sarcocystis Blanchardi and Fasciolæ	...	...	...	1
(10) Sarcocystis Blanchardi, Paramphistomum and Echinococcal Cysts	...	...	...	10
(11) Fasciolæ and Sarcocystis Blanchardi	...	...	...	7
Total				171

(g) *Laboratory Work (Research).*

48. Although considerable progress has been made in this Presidency with goat virus vaccination against rinderpest, it was reported that the virus behaved differently in different localities producing severe reactions in some places and mild ones in others—also drastic reactions in buffaloes and milder reactions in cows and bullocks. This is a matter of some concern as deaths tend to bring the inoculation into disrepute. It is also considered unsatisfactory to use two different forms of inoculations for the same disease. Accordingly experiments were devised as detailed below with a view to produce a product which besides being safe for use in all classes of animals and of sufficient antigenic value to ensure protection against the disease, would be ready for use immediately on receipt by the field worker.

Experiment No. 1.—An emulsion of goat spleen tissue one per cent strong was made with normal saline solution and injected in one c.c. dose into 5 calves; one calf being injected immediately after preparation of the emulsion and the rest injected with emulsion exposed to room temperature for 24, 48, 72 and 96 hours. The calf which received the fresh emulsion showed typical rinderpest reaction and the others did not show any reaction. These reacted subsequently to a test dose of bull virus. It may therefore be assumed that the virus had died within 24 hours.

Experiment No. 2.—Glycerinated emulsion of goat spleen tissue was prepared in one per cent strength and used in one c.c. dose on a batch of 5 calves; the emulsion thus prepared being injected into one calf immediately while for the others the emulsion was exposed to room temperature for 48 and 96 hours, 6 days and 13 days. The calves that received the fresh and 48 hours old emulsion reacted, whereas the others failed to react but reacted subsequently to a dose of bull virus. The keeping quality of the virus under these conditions appears therefore to be limited to 48 hours.

In another batch of 4 calves injected with glycerinated spleen emulsion, those that were given fresh and 24 hours old emulsion reacted, whereas the others that were given 3 days and 5 days old emulsion failed to react but later on reacted to a test dose of bull virus.

To determine the degree of reaction, side by side, in adult serum makers, 6 adult he-buffaloes were selected and divided into three batches of two each. The first pair of animals received spleen emulsion exposed to room temperature for 3 days, the second pair received emulsion exposed to room temperature for 4 days and the third pair 5 days old emulsion. None of them exhibited any reaction except one of the second pair of animals that received the 4 days old emulsion and in this case the reaction was very slight. The other non-reactors were tested with a dose of bull virus and they showed typical rinderpest reaction.

Experiment No. 3 (7 calves).—Injected with spleen tissue glycerinated emulsion in one c.c. dose and in one per cent strength as shown below:—

- (1) Kept in the Refrigerator for 2 days and injected early morning of the 3rd day.
- (2) Kept in the Refrigerator for 2 days and injected at 1–30 p.m. the same day.
- (3) Kept in the Refrigerator for 2 days and injected at 4–30 p.m. the same day.
- (4) Kept in the Refrigerator for 2 days and 2 days at room temperature.
- (5) Kept in the Refrigerator for 2 days and 3 days at room temperature.
- (6) Kept in the Refrigerator for 2 days and 4 days at room temperature.
- (7) Kept in the Refrigerator for 2 days and 5 days at room temperature.

If these 7 calves, the first three that received fresh emulsion reacted and the other four calves showed no reaction but reacted to a dose of bull virus.

Experiment No. 4 (4 calves).—Injected with emulsion that was exposed to room temperature for 2, 3, 4 and 5 days respectively. Of these, the only reactor was the one that was given 5 days old emulsion and it showed only a thermal reaction.

Experiment No. 5 (4 calves).—Injected with spleen tissue emulsion in one per cent strength and one c.c. dose, the emulsion having been exposed to room temperature for 3 days and 6 days respectively. Of the two calves that were injected with a 3-day old emulsion, only one calf reacted and the others failed to react but reacted to a test dose of bull virus subsequently.

Experiment No. 6 (2 calves).—Injected with emulsion which was kept in the cold storage for 25 days, i.e., 7 days at 32° and 18 days at 45°. Both the calves reacted. A test dose of bull virus on the 33rd day failed to provoke any reaction.

Experiment No. 7.—An emulsion with 60 per cent glycerine as vehicle, was made to one per cent strength and exposed to room temperature for 3, 4 and 5 days. The emulsion thus exposed was injected into 6 calves, 2 for each, the first pair being given the emulsion exposed to room temperature for 3 days, the second pair 4 days old emulsion and the third pair 5 days old emulsion. All the calves except one of the pair which received the 5 days old emulsion showed reaction. None of these calves (including the one which showed no reaction) reacted to a test dose of bull virus subsequently.

Experiment No. 8 (6 calves).—Three batches of 2 each received an emulsion of spleen tissue in glycerine of one per cent strength, kept in the cold storage for 14 days and exposed to room temperature for 3, 4 and 6 days before use. There was some thermal reaction in one of the two calves that received the 3 days old emulsion and so also in one of the calves injected with the 4 days old emulsion. All the other calves were re-tested with bull virus and a typical reaction followed.

Experiment No. 9 (6 calves).—Injected with one c.c. of spleen tissue emulsion in 60 per cent glycerine of one per cent strength diluted with 0.5 saline solution, the emulsion having been previously kept in the cold storage for 14 days and exposed to room temperature for 3, 4 and 6 days. Of the 6 calves used, one calf which was given 4 days old emulsion did not react till the 11th day after the original injection and died in an accident. Of the remaining five, one that was given the 4 days old emulsion and both the calves that received the 6 days old emulsion reacted. The remaining 2 calves reacted only to a test dose of bull virus.

Experiment No. 10 (6 calves).—Injected with an emulsion similar to the one described above, but this emulsion was kept in cold storage for 2 days and exposed to room temperature for 4, 5

and 6 days before use. Of these, only two reacted, viz., one that received the emulsion exposed for 4 days and another that received the one exposed for 6 days. The non-reactors subsequently reacted to a test dose of bull virus.

Experiment No. 11 (8 calves).—Injected at intervals with an emulsion of goat spleen tissue, the emulsion having been exposed to room temperature for 4 and 5 days. There was a slight thermal reaction in 3 calves and no reaction in the others. All the 8 calves when re-tested with bull virus reacted to rinderpest.

Experiment No. 12.—A sixty per cent glycerine emulsion made in 2 per cent strength was injected in three batches of 4 calves each on different dates. The emulsion remained in cold storage for 2 days and in room temperature for 4 and 5 days respectively. In each batch of 4 calves, 2 were given the emulsion exposed to room temperature for 4 days and the other two were given the emulsion exposed to room temperature for 5 days; and the reaction set up in all the 12 calves was inconclusive. All the calves reacted to the test with bull virus.

The dilution of the goat spleen tissue emulsion with 0.5 saline solution having failed to give satisfactory results, further experiments were conducted with 60 per cent glycerine alone.

Experiment No. 13.—Four calves were injected with an emulsion kept in cold storage for 7 days and in room temperature for 2 and 3 days. In both the cases there was no reaction, but these calves reacted to a subsequent test dose of bull virus.

Experiment No. 14.—A 5-day old goat spleen tissue emulsion (2 days in the refrigerator and 3 days at room temperature) treated with 0.5 per cent phenol was injected into 2 calves and two other calves were injected with the same untreated with phenol. The emulsion thus injected failed to provoke any reaction, but when the calves were re-injected with bull virus, all of them reacted to rinderpest.

Experiment No. 15.—Emulsions of goat and bull spleen were made separately in 60 per cent glycerine to one per cent strength and kept in cold storage for 7 days and exposed to room temperature for 3 days. At the time of injection, both the emulsions were mixed and injected into 2 calves in one c.c. dose. One of the calves reacted; the other calf did not react also to a subsequent dose of bull virus. Further experiments are in progress.

With a view to find out the difference in reaction, if any, among buffaloes and white cattle following the use of tissue virus and blood virus, emulsion made with 60 per cent glycerine to one per cent strength, has been supplied to some of the District Veterinary Officers for use in the field. The results obtained so far do not admit of any definite conclusions as to the comparative merits of these products. Further trials are being made.

49. *Antimonium Potassium Tartaratum.*—The practice of using antimonium potassium tartaratum on all buffalo-calves intended for virus production to minimize protozoon complications was continued during the year and the table below gives an idea of the incidence :—

Year.	Trypano- somes.	Piroplasma Bigeminum.	Micro- filaria.	Spiro- chaetes.
1935-36	2 per cent.	0.9 per cent.	7.9 per cent.	1.1 per cent.
1936-37	4.5 per cent.	..	10.4 per cent.	0.2 per cent.

(h) *Other sera and vaccines.*

50. The demand for other sera and vaccines was steadily on the increase except under anti-tetanic serum, tuberculin bovine concentrated and anti-distemper serum. It is necessary to mention in this connexion that it was not possible to get adequate supplies from Muktesar of Blackquarter Vaccine for some time during the year.

IV—INVESTIGATION AND RESEARCH.

(a) *Dosage of anti-Rinderpest serum in Serum Simultaneous inoculations.*

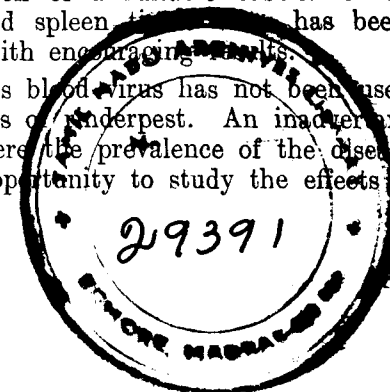
51. The dose of 6 c.c. per 100 lbs. of body weight for cattle and 8 c.c. per 100 lbs. for buffaloes with a minimum of 25 c.c. and 30 c.c. for cattle and buffaloes respectively which during the last year was found to be the suitable minimum dose for use in Serum Simultaneous inoculations was adopted in all circles. In Trichinopoly and Calicut circles, experiments are still being carried on in arriving at a minimum dose. The District Veterinary Officer, Bellary, has tried a further reduction of dose to 5 c.c. per 100 lbs. without untoward results, but an appreciable saving of serum as a result of this reduction is not expected as the number of animals inoculated with the reduced dose is not large.

(b) *Goat's blood virus vaccinations.*

52. The policy of using goat's blood virus in protecting cattle of clean areas in anticipation of outbreaks of the disease with the consent of owners was continued during the year and 62,905 head of cattle were protected as against 61,114 in the year 1935-36. Fifty-four animals, mostly buffaloes, have been reported to have died as a result of severe reaction set up by the virus. As a result of the attempts in the production of a suitable substitute for goat's blood virus, a glycerinated spleen virus has been prepared and tried in the field with encouraging results.

It will be observed that goat's blood virus has not been used in the control of actual outbreaks of rinderpest. An inadvertent use of the virus in a village where the prevalence of the disease was not reported, afforded an opportunity to study the effects of

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goat virus vaccination as a method of control of outbreaks. In this instance, 84 animals were vaccinated with virus in an infected village where the existence of five ailing animals was not reported. Among the vaccinated animals 11 (one heifer and ten buffaloes) showed severe reactions necessitating the use of anti-serum in six of them. Three of the reacting buffaloes were reported to have died. This was the only occasion in which goat virus was used in an affected village during the year.

(c) *Blackquarter vaccinations.*

53. The use of a vaccine against Blackquarter has yielded gratifying results. On a temporary shortage in the supply of Blackquarter serum, it was decided, with the assistance of the District Veterinary Officer and at the insistent demand of the owners for speedy protection of their cattle, to use Blackquarter vaccine alone in the presence of the disease. The vaccine which is at present being obtained from Muktesar confers a lasting immunity in about seven days after vaccination but during this interval the animals are less resistant to a natural attack of the disease. The results of over 2,000 vaccinations thus performed and of careful observations made by the staff showed that the risk of loss through such lowered resistance was infinitesimal while the method had the advantage of obviating the use of costly serum besides the saving of time and labour required for the serum with vaccine method. Eight thousand eight hundred and fifty-four animals have since been protected by this method in the Nellore circle before the close of the year in the face of outbreaks with a loss of only eight animals under circumstances which do not point to the vaccination as the cause. The method was also tried in nine other districts and 24,491 cattle and 59 sheep and goats were protected by the vaccine alone method in actual outbreaks of the disease with a loss of only 31 cattle. Under ordinary circumstances all these animals would have been protected by the serum with vaccine method or the serum alone method. The savings thus effected amount to about Rs. 6,122-8-0.

During the year, 36,815 cattle were inoculated against the disease with serum alone in 187 outbreaks and 81,308 cattle were protected by the serum with vaccine method. In future years, it ought to be possible to effect further economy in the use of Blackquarter serum by resorting to the vaccine alone method even for the suppression of actual outbreaks, though the vaccine alone method does not afford the same degree of safety. Arrangements are, however, being made for a trial of the method in all districts and if the results are as successful as they have been in the past, Government will be addressed for permission to adopt this method.

(d) *Treatment of Nasal Schistosomiasis.*

54. Attempts at devising a suitable and efficient treatment for Nasal Schistosomiasis in cattle were continued during the year. Weekly injections of Potassium Antimony Tartaratum were

adopted by all the staff excepting a few who were instructed to try a shorter course of treatment with daily injections or with other substitutes for Antimony Tartarate. The work done till the end of the year does not permit any definite conclusions to be drawn. Instructions for continuing the experiments have been issued. A careful record of treatment with weekly injections of Antimonium Tartarate carried out in 423 animals in the heavily infected area of the Chittoor district has shown that only 72 animals were cured. The remaining animals were either disposed of by the owners as soon as an appreciable improvement was noticed or withdrawn from treatment because they were required for use in agricultural operations. In order to provide a speedier cure, the drug 'Antimosan' was tried in eight affected animals. The results do not justify conclusions being drawn owing to the small number of animals experimented on. Further attempts are being made in the current year.

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

55. The data collected by the staff on the questionnaire issued by the Imperial Council of Agricultural Research on the subject named above, were furnished to the Council.

(f) *Veterinary diseases investigation.*

56. Mr. G. R. Viswanathan continued to hold charge of the Veterinary Investigation Officer's post throughout the year. He was on tour for 210 days and visited 416 villages during the course of his investigation work.

According to his original programme of work he had to take up investigation into the incidence of sheep and goat diseases together with Blackquarter and Hæmorrhagic Septicæmia among bovines, but the latter two diseases could not receive much attention for want of time. A preliminary enquiry into the incidence of Bovine Trypanosomiasis in North Arcot and Chingleput districts and test for Johne's disease at the Hosur Cattle Farm also engaged his attention during the year.

The diseases dealt with under sheep and goat diseases are as follows:—

- (a) Contagious Pleuro-pneumonia among goats.
- (b) Entero Toxæmia in sheep.
- (c) Sheep-pox.
- (d) Anthrax in sheep.
- (e) Rinderpest in sheep.

Details of the work done by the Veterinary Investigation Officer are embodied in the Veterinary Investigation Officer's report submitted to Government separately.

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

57. (a) *Pathology and Bacteriology section.*—Transmission experiments in connexion with contagious pleuro-pneumonia in goats were continued during the year. Materials from goats actually suffering from the disease, which were delivered alive at the College by the Veterinary Investigation Officer, Madras, were injected into healthy goats. This resulted in two instances in death from a severe pleuro-pneumonia. Work on this is being continued.

(b) *Parasitology section.*—(1) *Rhinosporidiosis.*—Work undertaken last year to study the mode of transmission of Rhinosporidiosis in bovines was continued this year. Attempts were made to transmit the disease by applying the spores and sporangia, obtained from the nasal discharge of the affected animal (got from Tanjore last year) to the nasal mucous membrane of a healthy calf but without success. Trials were also made to cultivate the organisms by implanting pieces of Rhinosporidial growths on various media and it was possible to obtain a certain fungus in cowdung or Sabaroud's medium containing dung juice. A like fungus was obtained on similar media with Rhinosporidial growths from the human being. This species of fungus has been implanted in the nose of the experimental calf and the result is awaited.

A detailed study of the histopathology of Rhinosporidial growths in bovines has been made.

So far Rhinosporidial growths have been seen in the proximity of the punched hole for the nose string and in some animals showing lesions of nasal schistosomiasis. It is therefore surmised that the route of infection is associated with trauma in bovines.

It is interesting to note that in the human being this disease has been found mostly in agriculturists which suggests that there is some correlation between the organism found in bovines and in man. The study of the organisms in sections of lesions from both human and bovine subjects shows so much similarity as to lead to the belief that they are identical.

The disease has so far been discovered in bovines in the following districts, Tanjore, Ramnad, South Arcot, Chingleput and Malabar. It is learnt that the disease is also found in men in these areas.

(2) *Parasitic nodules in the liver and lungs of ponies.*—The work on this was continued in the earlier part of the year and four ponies destroyed for the operative surgery class were examined. The materials collected so far only showed larvæ of nematodes, possibly of strongyle worms, in some of the sections of the nodules and neither could schistosomes nor their ova be detected.

(3) *Spirocercosis in dogs.*—It is interesting to note that there has been a distinct rise in the number of cases of Spirocercosis detected in dogs this year. Experiments are under contemplation to find out ways and means of treatment in this condition. In vitro experiments to ascertain the action of some drugs on the worm were made and it was found that Antimony Tartarate, Fuadin (Bayer) and Emetine were ineffective. It was also found that Thymol in a dilution of 1 in 40,000 killed the worm in about six hours.

A course of Fuadin injections was given to a hound extending over a period of nearly a month without any effect. During this experiment, it was found that the hound which weighed 60 lbs. could tolerate 5 c.c. of the drug given daily intravenously but it could not tolerate 6 c.c. of the drug. It would therefore appear that the safest dose of the drug for dogs is about 1 c.c. for 12 to 15 lbs. body weight. It is hoped to try the efficacy of Thymol in this disease when opportunities occur.

(h) *Anatomical findings.*

58. The following further anatomical deviations and peculiarities were observed in the ox type and studied :—

- (1) Thoraco-dorsal artery supplying the serratus magnus also.
- (2) The pre-humeral artery supplying the shoulder capsule and the deep pectoral muscle in addition to the structures it usually supplies.
- (3) A further peculiar disposition of the branches of the median nerve.
- (4) A further peculiar disposition of the superficial branch of the ulnar nerve.
- (5) Unpaired aortic intercostal arteries.
- (6) The level of the division of the ulnar nerve into its terminal branches.
- (7) The splenic artery giving off a phrenic branch to the diaphragm.
- (8) A branch of the radial nerve supplying the mastoido-humeralis.
- (9) Yet another variation in the disposition of the branches of the radial and median nerves supplying the brachialis anticus.
- (10) Presence of urachus in an adult bullock, ten-year old.
- (11) Another peculiar disposition of the external and internal jugular veins in a subject.
- (12) A further variation in the origin of the " Artery of the cord."
- (13) A peculiar anastomosis of three branches (a small middle sacral and a branch from each of the right and left internal iliac arteries) and the formation of the middle coccygeal artery.

- (14) The anterior femoral artery supplying the tensor vaginae and the middle gluteus also.
 (15) External popliteal nerve supplying an articular branch to the stifle.

The following deviations which had already been noted in some subjects in the previous years were sought for again in some of the dissection subjects during this year also and they were again observed in some more subjects, in support of the previous findings :—

- (1) Absence of the middle sacral artery from the aorta.
- (2) Presence of a slender artery originating from the umbilical artery and supplying the ureter, spermatic cord, vas deferens, epididymis and even the testicle.
- (3) " Artery of the cord " arising from the posterior abdominal artery.
- (4) Origin of the inferior cervical artery being almost next to the common trunk of the dorso-cervical-vertebral arteries.
- (5) Independent origin of three coronary arteries from two of the three sinuses of Valsalva on the left side.

The following which were found as deviations in but few subjects till last year, were carefully watched for in all the dissection subjects this year and they were present in most of the subjects examined. It would therefore seem that, though not in accordance with previous knowledge, they need not be taken as deviations but they may be treated as normal anatomical features :—

- (1) Additional nerve supply to the obturator internus muscle from the obturator nerve.
- (2) Additional nerve supply to the pectineus muscle from the internal saphena nerve.
- (3) The bronchial and oesophageal arteries though originate independently from the posterior aorta, form an anastomosis from which branches issue and supply both the lung and oesophagus.
- (4) Superficial flexor muscle of the fore limb receiving its nerve supply both from the ulnar and median nerves.
- (5) The brachialis anticus muscle receiving its nerve supply both from the median and radial nerves.

V—CONTAGIOUS DISEASES.

(a) Registration of mortality and reporting of outbreaks.

59. During the year under report attempts were made towards expediting the process of registering and reporting of outbreaks of contagious diseases, so as to minimize the mortality and spread of infection through delay in protecting cattle exposed to infection. In their Order No. 1545, Development, dated 5th November 1935,

Government approved a revised system of reporting outbreaks. According to this system, reports of outbreaks should be made direct to the Veterinary Assistant Surgeons concerned by not only the village munsifs but also by such bodies as Village Panchayats, Co-operative Societies, etc. Arrangements have also been made with the postal authorities for the outbreak reports to be delivered to the addressees on payment of ordinary postage in cash. Supplies of forms printed on post cards to be filled up and posted are being arranged for and it is expected that a stricter control over contagious diseases will be possible when the revised system is in working order.

60. An appreciable improvement in the reporting of outbreaks has, however, been noticed during the year, a considerable number of reports having been received by Touring Veterinary Assistant Surgeons directly from village munsifs instead of through the Tahsildars. Inaccuracies in the statistics of mortality as a result of wrong classification consequent on mistaken diagnosis of diseases by village officers continued to occur in the monthly reports received from Collectors. The extent of the variance between the number of outbreaks of contagious diseases of cattle reported by the District Veterinary Officers and by the Revenue Departments will be seen from the following table :—

Disease.			Number of outbreaks as reported by the Revenue Department.	Number of outbreaks as recorded by District Veterinary Officers.
Rinderpest	..	..	699	713
Anthrax	..	..	486	442
Hæmorrhagic Septicæmia		..	1,474	1,722
Blackquarter	..	..	1,470	1,451
Foot and mouth	..	..	1,433	1,456
Total	..		5,562	5,784

61. The diseases of sheep and goats and poultry were recorded and reported for the first time during the year under report. It is expected that with further experience in the identification of diseases of small animals and poultry and with a knowledge of the extent of loss through contagious diseases, an improvement in the reporting of such outbreaks will be noticed.

(b) Mortality.

62. The steady decline in the mortality from contagious diseases of cattle recorded since the year 1929-30 seems to have received a check during the year 1936-37 for an unfavourable rise in the incidence of all the fatal contagious diseases has been

recorded. The total number of outbreaks received and attended by the staff as compared to those of the previous two years were as follows :—

Year.	Number of outbreaks brought forward from previous year.	Number of outbreaks received.	Number attended by staff.	Number pending on the last day of the year.
(1)	(2)	(3)	(4)	(5)
1934-35 ..	..	3,559	3,305	21
1935-36 ..	23	3,696	3,310	43
1936-37 ..	59	5,911	5,470	53

The total mortality among cattle during the year 1936-37 from the more fatal diseases of cattle, i.e., Rinderpest, Anthrax, Hæmorrhagic Septicæmia and Blackquarter, for which preventive methods are applied by the department, was 22,723 in 4,328 outbreaks or 5.2 per outbreak as compared with 6.0 per outbreak in the previous year. This excludes 2,965 head of cattle lost in 1,456 outbreaks of foot and mouth and 7,511 lost in about 339 outbreaks of other unclassified and undiagnosed contagious diseases of cattle for which satisfactory preventive methods are not now known.

(c) *Bovine diseases.*

Rinderpest.

63. An unfavourable rise in the incidence of this disease was recorded during the year 1936-37 showing 713 outbreaks as compared to 443 in the previous year. The outbreaks were, as usual, mostly confined to the districts of this Province bordering on other States and Provinces, viz., Vizagapatam, East and West Godavari, Kistna, Guntur and South Kanara. Six hundred and fifty-eight out of 713 outbreaks occurred in these six districts, those that suffered heavily being Vizagapatam with 193 outbreaks and East Godavari with 158 outbreaks. West Godavari showed 104 outbreaks, while Kistna, Guntur and South Kanara recorded 97, 72 and 34 outbreaks respectively. The remaining 55 outbreaks occurred in the central and southern districts and were easily suppressed. At the close of the year disease had broken out in the western taluks of the Bellary district which had been free from the disease for a long time and is showing a tendency to spread rapidly to the surrounding taluks. The mortality reported during the year from this disease was 5,102 as compared to 2,752 in the previous year. From the records of the past 40 years it has been found that this disease breaks out in regular waves at intervals of 10 years the last peak having been reached in the year 1928-29. If the rise in the incidence now shown is considered to be the beginning of one as compared to a similar period of 1926-27 when the mortality one as compared to a similar period of 1926-27 when the mortality recorded was 23,676.

The seasonal migrations of cattle from and to the grazing areas and the collection of large numbers at cattle fairs have been definitely traced as the cause of dissemination of the disease. The routes and places in each district where different herds mingle have been located and steps are being taken to prevent the spread of the disease through such migrations.

The policy of the department towards rinderpest and its control, viz., serum simultaneous inoculations in the affected villages and their immediate neighbourhood and the use of goat's blood virus in clean areas where the owners have no objection to its use, was continued during the year.

The total number of animals protected against rinderpest by the different methods was as follows :—

	CATTLE.
Serum simultaneous method	136,443
Goat's blood virus	62,905
Serum alone method	3,230
	202,578

The corresponding figures for the year 1935-36 were—

	CATTLE.
Serum simultaneous method	111,610
Goat's blood virus	61,114
Serum alone method	307
	173,031

The large number of 'serum alone' inoculations done during the year under report is a result of the enforcement of the Cattle Disease Act at a cattle fair in the South Kanara district where 2,314 cattle were inoculated by the 'serum alone' method. Out of the number of serum simultaneous inoculations shown above, 32,157 were conducted in areas free from the disease as compared to 67,861 done during the previous year, the fall being due to a wider prevalence of rinderpest and other diseases which engaged the attention of the staff.

A few instances in which unprotected animals contracted infection from animals reacting to the virus injected in villages free from the disease were reported, but the infection did not show a tendency to spread from such animals.

64. *Anthrax*.—The number of outbreaks of this disease was 442 with a mortality of 3,339 as compared with 382 outbreaks and 2,383 deaths in the previous year. Inoculations were undertaken in 79 outbreaks and 13,330 cattle were protected by the 'serum

alone' method. The outbreaks occurred more or less in all districts excepting Coimbatore and the Nilgiris; those which suffered heavily were Malabar—63 outbreaks with 333 deaths, Nellore 48 outbreaks with 340 deaths, Vizagapatam, 47 outbreaks with 484 deaths and East Godavari, 45 outbreaks with 423 deaths.

Hæmorrhagic septicæmia.

65. One thousand seven hundred and twenty-two outbreaks of this disease were recorded during the year causing a loss of 6,353 cattle as compared with 924 outbreaks with 5,664 deaths in the previous year. As usual the incidence was high in the districts of Vizagapatam, Kistna, Nellore, Tanjore, Malabar and Chingleput. The staff undertook 'serum alone' inoculations in 562 villages and conducted 116,037 inoculations. The number of deaths among the inoculated was only 19.

Blackquarter.

66. There were 1,451 outbreaks of this disease, the districts which chiefly contributed to this high figure being Chittoor 265 outbreaks, Tanjore 234, Nellore 136, Trichinopoly 165 and South Arcot 124. The total mortality from this disease was 7,929 as compared with 5,857 in 986 outbreaks during the previous year. In their efforts to control the outbreaks, the staff protected 36,815 cattle by the 'serum alone' method in 187 villages and 81,308 cattle by the 'serum with vaccine' method in 439 villages besides protecting 24,491 cattle in 93 villages with 'vaccine alone'. As mentioned above in section IV supra, this vaccine has been used in certain districts even in affected villages without untoward results. The total number of cattle protected against the disease is 142,614.

Foot and mouth disease.

67. The number of outbreaks of this disease recorded during the year was 1,456 as compared to 933 in the previous year. The mortality was 2,965 as compared to 976 in the previous year. The disease prevailed throughout the province and the districts which suffered most were Salem 197 outbreaks, Tanjore 167 outbreaks and Coimbatore 144 outbreaks.

Other contagious diseases of bovines.

68. Attempts have been made to classify the various diseases of cattle grouped under the headings 'Other diseases' and the following data pertaining to outbreaks not recorded and reported by village munsifs are recorded for future reference.

Bovine Trypanosomiasis.

69. This disease has of recent years engaged the serious attention of the staff as it has shown a curious tendency to assume a virulent form in certain areas where previously it was known to exist without causing any serious loss. Two hundred and twenty-six outbreaks of this disease were reported during this year of

which 155 were recorded in a part of the North Arcot district and 63 in the adjacent area of the Chingleput district. The exact mortality from this disease is not known as the disease is not easily recognizable by reporting officers. The deaths from this disease are therefore shown under 'Other diseases' or wrongly included under 'Anthrax' to which the disease shows some resemblance.

Johne's disease.

70. Eleven cases were detected and confirmed after microscopical examination of material. Treatment in these cases was not undertaken but four animals were handed over to the Mysore Civil Veterinary Department for use in their experiments in the treatment of the disease.

Tuberculosis.

71. One bull in the Madura district, one in Rajahmundry and a cow belonging to the Agricultural College were confirmed for tuberculosis.

Ephemeral fever.

72. Seventy-nine cattle of which 36 were detected in the Madanapalle Circle and 22 in the Trichinopoly Circle were treated successfully with Sodii-Salycilis.

Bovine Lymphangitis.

73. Fifty-four cases confirmed after microscopical examination were treated with a vaccine made at the Madras Veterinary College.

Rabies.

74. Confirmation was obtained in 15 brains from suspected cases of rabies in bovines submitted for examination by the staff of the department and seven were protected with the vaccine obtained from the Pasteur Institute, Coonoor.

Tetanus.

75. A bullock suffering from Tetanus was treated successfully at Coimbatore Veterinary Hospital.

Contagious Otorrhœa.

76. A form of contagious Otorrhœa was widely prevalent in the Rajahmundry and Calicut Circles. The disease was found to be amenable to a simple treatment with anti-septics. Two hundred and fifteen cases of this disease were treated by the staff in the Malabar Circle alone.

(d) *Parasitic diseases of cattle.**Nasal Schistosomiasis.*

77. As recorded in the report for the year 1935-36, this affection is now known to be prevalent in all the districts of the province, the intensity of infection being heaviest in the Chittoor taluk of the Chittoor district and the Kollegal taluk of the Coimbatore district. Two thousand three hundred and sixty-five cases were treated with injections of Antimonium Tartarate as compared with 2,373 in the previous year. Attempts at eradication of the disease by treating the sources of infection, i.e., ponds infested with snails were not undertaken departmentally, but the ryots were advised on the methods of prevention.

Coccidiosis.

78. One hundred and seventeen cases of coccidiosis were confirmed after microscopical examination and were treated.

(e) *Diseases of sheep and goats.*

79. Though arrangements have been made for the recording and reporting of outbreaks of contagious diseases among sheep and goats, the number of outbreak reports received was small, i.e., 8 of anthrax in sheep from the Nellore and Cuddapah districts, one of hæmorrhagic septicæmia; 16 of pleuro-pneumonia and 38 of sheep-pox.

Although no actual outbreak reports had been received the following figures of mortality have been recorded in the districts.

The number of sheep and goats protected are shown against each :—

<i>Deaths.</i>			
Rinderpest	..	249	896 serum simultaneous inoculations.
Hæmorrhagic Septicæmia.		3	Nil.
Blackquarter	..	138	558 'Serum alone' method.
			59 'Vaccine alone'.
Anthrax	..	193	1,164 Serum alone.
Sheep-pox	..	396	7,878 ovinated.

Besides the above, a disease believed to be a form of contagious pleuro-pneumonia was detected by the staff and 1,477 animals were protected as an experimental measure with a vaccine prepared by the Veterinary Investigation Officer.

(f) *Diseases of Poultry.*

80. *Fowl cholera.*—The staff protected 305 fowls by the 'Serum with vaccine' method, 126 with 'vaccine alone' and 100 with 'serum alone.' Thus the total number of fowls protected was 531.

Page 37, paragraph 81, line 2.—For the figure "8,830," substitute "1,830."

82. *Pseudo-fowl pest.*—A vaccine prepared for experimental purposes was used on 149 birds. Treatment with various drugs reputed to be curative is being tried but an efficient remedy has not yet been found.

(g) *Equine diseases.*

83. *Glanders and Farcy.*—An outbreak of Glanders was suspected in the Madura circle and 19 animals were tested with mallein. The results were negative. The number of equines put through the mallein test as a routine measure was 201 in all, of which 155 were tested in the City of Madras.

84. *Surra.*—The total mortality among equines from this disease as reported in the statements received from Collectors is 21, but the number of cases which were dealt with by the staff according to the provisions of the Glanders and Farcy Act was 29. Of these, 9 were treated, 12 were destroyed under the Act with compensation and 8 died before action could be taken.

85. *Strangles.*—Six outbreaks were recorded and 131 equines were treated in three districts of the province.

86. *Rabies.*—Two cases of rabies in equines were confirmed and 44 animals were protected against the disease with anti-rabic vaccine.

(h) *Diseases of dogs.*

87. *Tuberculosis.*—Two cases were recorded in which material from dogs revealed organisms indistinguishable from *B. tuberculosis*.

88. *Rabies.*—The number of brains from suspected cases confirmed for rabies during the year was 227. Two hundred and forty-one dogs were protected with anti-rabic vaccine.

Non-contagious diseases.

89. *Luxation of Patella.*—Treatment of this condition with injections of Solution of Iodine has been carried out in 1,328 cases. The number of cures by this method have not been recorded, but the increasing popularity of the treatment among the ryots seems to indicate a large percentage of cures.

VI. HOSPITALS AND DISPENSARIES.

90. The total number of Veterinary Institutions at the end of the year was 111 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, Sivaganga and Kannivadi as against 113 of the previous year. The Veterinary Institutions at Jeypore, Russellkonda

and Berhampur and the private institution at Parlakimedi were transferred from this Presidency on account of the formation of the Orissa Province. A Veterinary dispensary was opened at Tiruturaipundi during the year. The Zamindar of Kannivadi opened a private Veterinary dispensary at Kannivadi.

91. The total number of in-and out-patients treated in the several institutions in the Presidency during the year increased from 253,230 to 262,774. The number of cases supplied with medicine but not brought to the institutions was 6,261 as against 4,582 of the previous year.

92. Permanent buildings for the Veterinary dispensary, Dharapuram, were completed during the year and those for the Veterinary dispensary, Bezwada, are in progress.

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

Name of institution.	Number of cases treated.
(1) Veterinary College hospital ..	8,677
(2) Veterinary Hospital, Coimbatore ..	7,503
(3) Do. Trichinopoly ..	4,946
(4) Do. Rajahmundry ..	4,903
(5) Veterinary Dispensary, Rayapuram ..	4,640
(6) Veterinary Hospital, Saidapet ..	4,508
(7) Do. Conjeeveram ..	4,508
(8) Veterinary Dispensary, Madura ..	4,485
(9) Veterinary Hospital, Salem ..	4,372
(10) Do. Calicut ..	4,358
(11) Veterinary Dispensary, Bezwada ..	4,023
(12) Veterinary Hospital, Palghat ..	3,616

VII. ITINERATING STAFF.

94. Government sanctioned the creation of 30 touring billets during the year. Six touring posts have been eliminated from this Presidency on account of the formation of Orissa Province from 1st April 1936, the total number of such posts at the end of the year being 133 as against 109 of the previous year.

The total number of cases treated by the itinerating staff during the year was 137,454 as against 115,316 of the previous year. Of these, 64,097 were contagious cases and 73,357 non-contagious.

VIII. CASTRATIONS.

95. A larger number of castrations was performed during the year than in the previous year, the figures for the two years being 72,862 and 70,576, respectively. Most of the castrations were done by Burdizzo method which is becoming more and more popular among the ryots. The largest number of castrations performed was in the districts of Coimbatore, Chittoor and East Godavari, the figures for these districts being 7,460, 5,736 and 4,570, respectively.

IX. MISCELLANEOUS.

96. *Criminal poisoning and malicious injury.*—The Chemical Examiner to Government examined the viscera of 66 animals during the year and poison was detected in 12 cases. Eleven cases of criminal poisoning were prosecuted resulting in 9 convictions and 2 acquittals. One hundred and eighty-six cases were examined by the staff of this department for malicious injury during the year and necessary certificates were issued to the Police.

97. *Society for the Prevention of Cruelty to Animals.*—The total number of convictions obtained under the Prevention of Cruelty to Animals Act in the Presidency was 12,418 as against 12,551 of the previous year, Trichinopoly and Coimbatore recording the largest number of convictions, the figures for these districts being 3,163 and 2,035. Out of the total number of cases in which the accused were convicted, the animals in 2,786 cases were remanded to the Veterinary Institutions declared as infirmaries under the Act for treatment as against 3,780 so remanded in the previous year.

98. *Forest grazing—Protection of bison from rinderpest.*—The compulsory inoculation of cattle entering bison areas of reserved forests in Coimbatore district was in force during the year.

99. *Forest livestock.*—The general health of the forest livestock throughout the year is reported to be satisfactory. The total number of livestock which were under the Inspector of Livestock on 31st March 1937 was as follows :—

Elephants	...	...	...	...	...	100
Bullocks	...	...	...	...	...	4
Buffaloes	...	...	...	...	...	4

There was no outbreak of contagious disease amongst the livestock during the year except a suspected case of foot-and-mouth disease in one of the bullocks of Sigur Range. Three hundred and seventy-three cases of non-contagious diseases were treated during the year as against 444 of the previous year. The decrease may be attributed to the routine treatment for worms and wounds given for a lesser number of cases than in the previous year. During the year there were no capturing operations. There was only one death, i.e., an elephant. In the opinion of the Inspector of Livestock, the cause of death of this elephant was exhaustion as a result of diarrhoea following acute gastritis. Under instructions from me, the Inspector tested the elephant 'Devamaji' with tuberculin with negative result.

100. *Cattle pentas.*—Government in their Order No. 1426, Mis. Development, dated 21st August 1936, sanctioned the appointment of two Veterinary Assistant Surgeons with a peon attached to each for a period of one year from 1st September 1936 in order to continue the survey of the cattle pentas of the Nallamalai hills of the Kurnool and Cuddapah districts. The Veterinary Assistant Surgeons have been instructed to make a detailed inspection of the

cattle pentas in the areas allotted to them and in the surrounding villages and to submit at the end of the period of special duty a detailed report on the conditions of cattle with special reference to infectious and contagious diseases prevailing there and suggest the future action to be taken to reduce the mortality and to improve the existing herds.

101. *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 while in a few cases, the municipalities ceased to utilize the services of the local Veterinary Assistant Surgeons for this purpose. The Tirunelveli municipality appointed a Veterinary Assistant Surgeon of its own for meat inspection work. In some cases, difficulty arose over the remuneration to be paid for this work. The services of the Veterinary Assistant Surgeon in charge, Veterinary dispensary, Karur, were utilized for a part of the year, the Veterinary Assistant Surgeon in charge of the Veterinary dispensary, Guruzala, was doing meat inspection work free of remuneration and the Veterinary Assistant Surgeon in charge of the Veterinary dispensary, Mayavaram, ceased from doing meat inspection work.

102. *Lethal chambers.*—Most of the lethal chambers for the destruction of stray dogs maintained by local bodies in the Presidency were periodically inspected by the staff of this department.

103. *Propaganda.*—As in the previous years propaganda work continued by the staff of this department in the course of their ordinary duties by distributing the departmental leaflets on the several important disease conditions, by participating in the health and baby week celebrations and other exhibitions, by exhibiting various items of popular and scientific interest and by demonstrating the Burdizzo method of castration. Opportunities were also availed of the several cattle fairs and exhibitions to deliver lectures and conduct magic lantern demonstrations to educate the ryots on veterinary matters. The District Economic Councils were made use of to push the activities of the department and the model villages selected by these councils were visited by the staff of the department to educate the ryots on veterinary matters and rural uplift work. The first motor van of this department toured in the districts and carried out extensive propaganda work. The work turned out by the van enabled the ryots to realize the usefulness of the department. The second motor van sanctioned by Government was sent to Trichinopoly district, in March last after construction and complete equipment. The motor exhibition vans of the Agricultural department were also made use of as usual for propaganda work. A set of magic lantern slides on hæmorrhagic septicæmia was prepared at the Madras Veterinary College and supplied to all the District Veterinary Officers during the year.

104. *Fairs and Shows.*—The cattle shows held at Valparai (Pollachi taluk) and Vallacheri (Saidapet taluk) and cattle fair and pony show at Tiruppur were attended by the Veterinary Assistant

Surgeons and the District Veterinary Officers concerned. The cattle shows held at Mahanandi and Ahobilam in Kurnool district were attended by the concerned Veterinary Assistant Surgeons and the former by the District Veterinary Officer also. Several annual and weekly cattle fairs were held during the year and were attended by the staff of this department. The provisions of the Cattle Disease Act were enforced in many of the fairs.

105. *Horse breeding.*—The Coimbatore District Board purchased one stallion from the Pattagar of Palayakottai and it is housed at the Veterinary hospital, Coimbatore. The old stallion is kept at the Veterinary hospital, Tiruppur.

106. *Visiting Committees.*—The Visiting Committees attached to certain Veterinary Institutions continued to function satisfactorily while in other cases, the members of the Committees have not taken an active part. A visiting committee for the Veterinary dispensary, Srivilliputtur, was formed during the year.

107. *Levy of fees in veterinary institutions.*—Fees were introduced during the year in the Veterinary Institutions at Dindigul and Periyakulam. The system of levy of fees continued to work satisfactorily except in a few cases which is attributed to general economic depression.

108. *Inspection of animals intended for export to Ceylon.*—The Veterinary Assistant Surgeon placed on special duty at Tuticorin attended to the inspection of sheep and goats intended for export to Ceylon and to the issue of certificates to healthy animals before shipment. The total number of sheep and goats certified for export during the year was 27,662 as against 32,341 of the previous year. The fall is due to the fact that from 1st February 1936, the number of animals to be exported was restricted by the Ceylon Government to 1,988 per mensem. A fee of annas two 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. 3,457-12-0 while the expenditure was only Rs. 2,072-3-6, thus leaving a credit balance of Rs. 1,385-8-6.

X. FINANCE.

109. A statement showing the receipts and charges of this department for the year under report is appended. (Appendix V.) It will be observed from the statement that the total expenditure including that incurred in connexion with Veterinary Investigation Scheme was Rs. 10,12,616-0-5 as against Rs. 9,79,271-10-5, incurred during the previous year. There was an increase in expenditure under all the sub-heads except under 'Circle Officers,' the actual expenditure under this head being Rs. 1,14,434-0-8 as against Rs. 1,20,484-15-7 of the previous year. The decrease under this head is due to reduced expenditure under "Pay of Officers and Establishments" on account of the retirement of Mr. R. Narasinga Rao, transfer of Mr. A. L. N. Somayajulu Pantulu to Orissa Government, transfer of Mr. C. S. Murti in the leave arrangement of Mr. T. J. Hurley, suspension of Mr. G. A. Ajwani and posting

of junior officers in the above arrangements and transfer of senior clerks from certain District Veterinary offices to other departments. The receipts of the department amounted to Rs. 54,009-15-11 as against Rs. 49,829-5-9 of the previous year.

The total expenditure incurred by the Public Works Department (Original Works and repairs) on buildings of the Civil Veterinary Department during the year 1936-37 as reported by the Accountant-General, Madras, was Rs. 62,252-11-1.

XI. FUTURE PROGRAMME OF WORK.

110. *Education*—(a) *Instruction*.—The three years' diploma course and the B.V.Sc. degree course will continue to be held and the Refresher course for the Veterinary Assistant Surgeons will be held for a period of nine months from July 1937.

(b) *Model Dairy*.—The scheme for the model dairy is still under the consideration of Government.

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

The Veterinary Investigation Officer, Madras, will continue his investigations.

111. *Serum Institute*.—The manufacture of anti-rinderpest and hæmorrhagic septicæmia sera and rinderpest virus will be continued at the institute and further trials in the development of a tissue vaccine for rinderpest will be conducted.

Proposals for the manufacture of anti Black Quarter serum, Black Quarter vaccine and Hæmorrhagic Septicæmia vaccine at the institute are under the consideration of Government.

112. *Contagious and non-contagious cases*.—Proposals for the opening of additional touring billets for the normal expansion of the department will be sent up to Government as part II schemes for 1938-39.

113. *Propaganda*.—Propaganda work on existing lines will be continued.

With the existing two vans it will be possible to do propaganda work in each district for one month only. In order to carry out effective propaganda work in all the areas of the Presidency where they are most needed and in order to bring home to the public the good work done by this department and render veterinary aid at short notice in outlying places, at least two more vans are quite necessary and proposals in this regard have already been submitted by me to Government for their consideration.

MADRAS,
1st July 1937.

P. T. SAUNDERS,
Director of Veterinary Services.

APPENDIX I.
Statement showing the number of deaths from contagious diseases among animals during the year 1936-37 (as furnished by Collectors).

Districts.	Bovine.													Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
Vizagapatam ..	1,160	484	1,030	1,169	496	1,800	6,139				1		1	
Godavari, East ..	927	423	312	35	137	169	2,003							
Godavari, West ..	821	396	215	30	76	198	1,736							
Kistna ..	865	107	649	36	6	160	1,823							
Guntur ..	610	116	717	172	6	434	2,055							
Kurnool ..	15	85	145	179	17	36	477							
Bellary ..	133	68	108	82	30	100	521							
Anantapur ..	8	57	3	36	4	123	231							
Chittoor ..	11	139	7	1,204	38	97	1,496							
Cuddapah ..	8	91	183	385	8	84	759							
Nellore ..	19	340	772	752	404	854	3,141							
Chingleput ..	37	251	302	276	127	609	1,602							
South Arcot ..	23	68	150	377	58	252	928							
North Arcot ..	115	53	527	540	128	1,036	2,399							
Salem ..	4	101	34	558	136	692	1,525							
Trichinopoly ..	6	38	187	1,240	137	98	1,706							
Tanjore ..	44	21	46	117	985	161	1,374							
Madura ..	17	70	152	563	14	47	863							
Rannad ..	32	13	36	43	17	151	292							
Tinnevely ..	17	34	20	9	1	22	103							
Combatore ..	6	13	30	113	100	101	363							
The Nilgiris ..	3	333	27	7	7	45	82							
Malabar ..	25	35	623	78	6	139	456							
South Kanara ..	195	1	78	6	3	2	10							
Madras City ..	1	3	..	..	4	..	..							
Total ..	5,102	3,339	6,353	7,929	2,985	7,511	33,199							

Summary of Results of Preventive Inoculation in the Province of Madras during the year 1936-1937.

Place	2	2	10,700	10	Total
Madras City					
Vizagapatam					
Godavari, East					
Godavari, West					
Kistna					
Guntur					
Kurnool					
Bellary	2	2	10,000	10	
Cuddapah					
Nellore					
Chingleput					
South Arcot			700		
North Arcot					
Salem					
Chittoor					
Anantapur					
Coimbatore					
The Nilgiris					
Trichinopoly					
Tanjore					
Madura					
Rannad					
Tinnevely					
Malabar					
South Kanara					
Total	2	2	10,700	10	62,905
Smallpox virus vaccinations.					
Binderpest.					
Goat virus vaccinations.					
S.I. Madras					
11,847					
3,021					
4,911					
602					
1,069					
869					
2,710					
338					
2,247					
201					
2,855					
1,752					
8,183					
5,532					
3,286					
185					
12					
1,898					
4,406					
6,204					
680					
107					
62,905	2	2	54		
802					
28					
4					
5					
54					
20					
3					
2,314					
3,230					
8					
8					

Summary of Results of Preventive Inoculation in the Province of Madras during the year 1936-1937—cont.

District.	(1) Name of disease against which inoculation was undertaken.	(2) Method of inoculation.	(3) Source of product.	Number of animals un inoculated in course of outbreaks.					Number of animals inoculated.					Number of inoculated animals which died of the disease.	
				(4) Number of villages affected in these outbreaks.	(5) Bovine population of affected village.	(6) Bovines.	(7) Rhines.	(8) Others.	(9) Bovines.	(10) Rhines.	(11) Others.	(12) Bovines.	(13) Rhines.		(14) Others.
Hemorrhagic Septicemia.															
Vizagapatam	..	..	S.I., Madras	5	5	1,843	33	..	3	900	..	..	..	..	..
Godavari, East	..	..	Do.	17	54	11,000	252	..	..	4,087	..	..	..	..	..
Godavari, West	..	..	Do.	19	22	20,293	145	..	..	6,082	..	..	..	..	..
Kistna	..	..	Do.	21	21	38,980	241	..	..	8,848	..	..	..	..	..
Guntur	..	..	Do.	11	11	17,178	167	..	..	3,417	..	..	..	..	..
Kurnool	..	..	..	18	18	3,000	146	..	..	1,516	..	..	..	..	..
Bellary	..	..	S.I., Madras	3	3	1,600	18	..	..	753	..	..	..	..	..
Cuddapah	..	..	Do.	26	29	6,677	323	..	..	4,252	..	..	2	..	..
Nellore	..	..	Do.	131	144	101,432	1,486	..	..	35,017	..	..	1	..	..
Chingleput	..	..	Do.	56	62	23,550	404	..	..	10,150	..	..	2	..	..
South Arcot	..	..	Do.	13	16	7,780	118	..	..	6,081	..	..	1	..	..
North Arcot	..	..	Do.	39	39	15,745	411	..	..	4,969	..	..	1	..	..
Salem	..	..	Muktesar	1	1	470	2	..	..	310	..	..	..	..	..
Coimbatore	..	..	Do.	4	6	500	53	..	..	758	..	..	..	..	..
The Nilgiris	..	..	S.I., Madras	3	6	8,500	40	..	..	534	..	..	..	..	..
Trichinopoly	..	..	..	11	11	..	108	..	..	3,355	..	..	..	..	..
Tanjore	..	..	..	113	113	..	702	..	..	16,058	..	..	..	..	..
Madura	..	..	..	12	12	..	134	..	..	3,003	..	..	..	..	..
Rannad	..	..	..	1	1	..	25	..	..	205	..	..	..	..	..
Tinnevelly	..	..	..	2	2	..	20	..	..	204	..	..	..	..	..
Malabar	..	..	Muktesar and S.I., Madras.	53	56	68,396	491	..	..	5,038	..	..	12	..	..
South Kanara	..	..	S.I., Madras	3	3	2,742	15	..	..	500	..	..	..	..	..
Total	..	..	..	562	635	329,636	5,334	..	3	116,037	..	..	19	..	..

NOTE.—S.I. = Serum Institute.

Note.—S.I. = Serum Institute.

Black quarter.															
Bellary	..	..	Muktesar	1	1	1,000	9	..	..	606	..	..	..	..	..
Kurnool	..	..	Do.	3	3	2,000	5	..	..	763	..	..	..	..	..
Cuddapah	..	..	Do.	11	11	3,786	63	..	..	2,804	..	..	..	..	..
Nellore	..	..	Do.	23	23	9,669	130	..	138	558	..	..	..	..	..
Chingleput	..	..	Do.	16	16	7,026	79	..	..	4,146	..	..	..	..	..
South Arcot	..	..	Do.	16	16	6,410	132	..	..	2,844	..	..	2	..	..
North Arcot	..	..	Do.	51	53	23,469	313	..	..	7,032	..	..	2	..	..
Salem	..	..	Do.	19	19	22,454	142	..	..	3,667	..	..	2	..	..
Chittoor	..	..	Muktesar	15	15	9,500	92	..	..	2,746	..	..	7	..	..
Coimbatore	..	..	Do.	2	2	8,700	2	..	..	1,291	..	..	2	..	..
Trichinopoly	..	..	..	10	10	..	85	..	..	1,707	..	..	..	..	..
Tanjore	..	..	..	5	5	..	42	..	..	1,926	..	..	2	..	..
Madura	..	..	Muktesar	11	11	6,250	74	..	..	2,227	..	..	..	..	..
Rannad	..	..	Do.	1	1	500	5	..	..	426	..	..	..	..	..
Tinnevely	..	..	Do.	2	2	200	10	..	..	180	..	..	..	..	..
Malabar	..	..	Do.	1	1	..	7	..	..	96	..	..	..	..	..
Total	..	..	..	187	189	100,964	1,190	..	138	36,815	..	558	17	..	..

Total

Vaccine alone.															
Kurnool	..	..	Muktesar	..	..	600	..	..	..	424	..	..	..	..	..
Cuddapah	..	..	Do.	..	..	12,963	172	..	..	7,158	..	..	..	..	..
Nellore	..	..	Do.	..	..	2,625	27	..	..	1,696	..	..	..	..	..
Chingleput	..	..	Do.	..	..	..	..	..	..	690	..	..	..	..	..
North Arcot	..	..	Do.	..	..	7,541	113	..	..	1,981	..	..	..	..	..
Salem	..	..	Do.	..	..	5,465	19	..	..	2,077	..	..	2	..	..
Chittoor	..	..	Do.	..	..	11,150	115	..	..	6,200	..	..	18	..	..
Anantapur	..	..	Do.	..	..	400	..	..	..	150	..	..	..	..	..
Coimbatore	..	..	Do.	..	..	..	9	..	..	2,632	..	..	..	..	..
Trichinopoly	..	..	..	..	..	..	46	..	..	278	..	..	..	..	..
Tanjore	..	..	..	..	..	..	..	..	..	494	..	..	..	..	..
Madura	..	..	Muktesar	..	..	..	30	..	..	569	..	..	..	..	..
Rannad	..	..	Do.	..	..	200	1	..	..	142	..	..	..	..	..
Total	..	..	..	..	..	40,944	532	..	..	24,491	..	558	31	..	..

Total

Summary of Results of Preventive Inoculation in the Province of Madras during the year 1936-1937—cont.

District.	(1) Name of disease against which inoculation was undertaken.	(2) Method of inoculation.	(3) Source of product.	(4) Number of outbreaks in which inoculation was undertaken.	(5) Number of villages affected in these outbreaks.	(6) Bovine population of affected villages.	Number of animals un inoculated in course of outbreaks.			Number of animals inoculated.			Number of animals which died of the disease.	
							Bovines.	Equines.	Others.	Bovines.	Equines.	Others.	Bovines.	Equines.
Vizagapatam	Black quarter.	Sero vaccine.	Muktesar S.I. M.	9	4	1,180	27	..	..	613	..	..	..	..
Kurnool	..	..	Muktesar	3	3	3,000	28	..	..	1,751	..	..	..	..
Bellary	..	..	Muktesar	29	39	1,000	136	..	..	5,322	..	..	..	..
Cuddapah	..	..	Muktesar	60	62	9,240	432	..	..	5,669	..	..	..	..
Nellore	..	..	Do.	28	28	28,322	148	..	..	12,464	..	..	..	..
Chingleput	..	..	Do.	24	24	11,020	158	..	..	4,106	..	..	..	..
South Arcot	..	..	Do.	8	8	9,500	36	..	..	4,959	..	..	..	..
North Arcot	..	..	Do.	12	12	8,081	98	..	..	1,754	..	..	..	..
Salem	..	..	Do.	92	92	12,508	526	..	..	2,681	..	..	..	..
Chittoor	..	..	Do.	9	9	65,750	73	..	..	16,209	..	..	..	..
Anantapur	..	..	Do.	16	15	3,700	79	..	..	1,494	..	..	..	..
Coimbatore	..	..	Muktesar and S.I. M.	77	28	4,200	615	..	..	8,021	..	..	..	..
Trichinopoly	..	..	..	41	40	..	264	..	..	11,543	..	..	..	..
Tanjore	..	..	..	26	26	..	236	..	..	3,738	..	..	..	..
Madura	..	..	Muktesar	1	1	..	7	..	..	5,721	..	..	..	..
Rannad	..	..	Do.	439	400	157,501	2,366	..	..	63	..	..	..	..
Total	..	..	..	..	..	..	..	..	..	81,308	..	..	..	..
Madras City	..	..	Muktesar	3	6	..	4	..	..	286	..	..	..	..
Godavari, West	..	..	Do.	1	1	7,000	34	..	..	1,503	..	..	..	..
Guntur	..	..	Do.	1	1	..	68	..	..	345	..	..	..	..
Bellary	..	..	Do.	1	1	250	2	..	..	198	..	..	..	..
Cuddapah	..	..	Do.	6	7	1,500	19	..	28	1,171	..	322	..	..
Total	..	..	..	..	..	..	643 goats.	..	..	..	..	..	..	..

Nellore	..	..	Do.	23	23	9,669	130	..	138	4,354	..	588	..	..
Chingleput	..	..	Do.	3	3	650	21	..	..	414	..	..	..	..
South Arcot	..	..	Do.	1	1	53	..	..	..	19	..	..	..	..
North Arcot	..	..	Muktesar	2	2	400	2	..	10	52	..	50	..	..
Anantapur	..	..	..	1	1	..	9	..	17	241	..	204	..	..
Trichinopoly	..	..	..	2	2	..	10	..	..	200	..	..	..	..
Madura	..	..	..	2	2	300	10	..	..	186	..	..	..	..
Tinnevely	..	..	Muktesar	22	22	71,762	173	..	..	3,834	..	..	2	..
Malabar	..	..	Do.	7	7	4,163	39	..	..	527	..	..	..	..
South Kanara	..	..	..	79	77	96,390	511	..	193	13,330	..	1,164	6	..
Total	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Bellary	..	..	..	1	1	300	..	..	50	..	..	147	..	..
North Arcot	..	..	..	7	7	..	..	..	71	..	..	1,174	..	..
Cuddapah	..	..	..	1	1	400	..	..	28	..	..	160	..	..
Chittoor	..	..	Local	9	9	9,420	..	..	135	..	..	4,092	..	148
Anantapur	..	..	Do.	1	1	500	..	..	20	..	..	305	..	1
Trichinopoly	..	..	Do.	2	2	..	..	..	11	..	..	357	..	10
Tanjore	..	..	Do.	1	1	..	..	..	20	..	..	6	..	..
Madura	..	..	Do.	1	1	..	..	..	61	..	..	38	..	..
Chingleput	..	..	..	1	1	..	..	..	9	..	..	82	..	..
South Arcot	..	..	..	4	4	..	..	..	195	..	..	1,517	..	..
Total	..	..	..	28	28	10,620	..	..	600	7,878	..	..	159	..
Vizagapatam	..	..	..	1	1	..	..	..	..	..	..	155	..	..
Guntur	..	..	Muktesar	..	..	..	..	..	223	..	..	24	..	..
Madura	..	..	Do.	..	..	..	..	..	..	..	..	77	..	..
Rannad	..	..	Do.	..	..	..	..	..	..	..	..	40	..	..
Tanjore	..	..	..	1	1	..	..	..	16	..	..	9	..	1
Total	..	..	..	2	2	..	..	..	239	..	..	305	..	1
North Arcot	..	..	..	1	1	..	..	..	..	..	..	80	..	..
Madura	..	..	..	..	..	..	..	..	..	..	..	46	..	..
Total	..	..	..	1	1	..	..	..	..	..	..	126	..	..

Summary of Results of Preventive Inoculation in the Province of Madras during the year 1936-1937—*cont.*

District.	(1)	Name of disease against which inoculation was undertaken.	(2)	(3)	Source of product.	(4)	(5)	Number of villages affected in these outbreaks.	(7)	Number of animals which died uninoculated in course of outbreaks.			Number of animals inoculated.			Number of inoculated animals which died of the disease.		
										(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Trichinopoly		Fowl cholera.	Serum alone.	1	1	..	1	1	..	..	..	100	..	..	..	..	..	
Total				1	1	..	1	1	..	2	..	100	..	..	..	..	..	
Vizagapatam		Fowl pox.	Vaccination.	..	..	Muktesar	..	..	..	..	..	435	..	..	..	..	13	
Godavari, East		Do.	Do.	..	..	Do.	..	..	..	..	..	168	..	..	..	..	..	
North Arcot		Do.	Do.	..	..	Do.	..	..	..	..	..	756	..	..	..	..	..	
Salem		Do.	Do.	..	..	Do.	..	..	..	..	..	7,403	..	..	..	..	..	
Malabar		Do.	Do.	..	..	Do.	..	..	..	..	..	68	..	..	..	..	..	
Total				..	..	..	..	..	..	..	..	8,830	..	..	..	..	13	
Guntur		Contagious Pleuropneumonia.	Vaccine.	1	1	Local	1	1	..	60	..	136	..	..	..	..	35	
Godavari, East		Do.	Do.	1	1	Do.	1	1	..	4	..	453	..	..	..	..	1	
Chittoor		Do.	Do.	2	2	Do.	2	2	..	99	..	408	..	..	..	..	..	
Anantapur		Do.	Do.	..	..	Local	1	1	..	29	..	480	..	..	..	..	24	
Chingleput		Do.	Do.	1	1	Local	1	1	..	..	..	..	..	..	..	..	..	
Total				5	5	..	5	5	..	192	..	1,477	..	..	..	..	60	

[illegible][illegible]

Page 51.—Under Fowlpox vaccination, for the figure "8,830," substitute "1,830"; for "21,794" under total, substitute "14,794" and for "496,353" against grand total, substitute "489,353."

APPENDIX III.

Statement showing the number of animals treated and castrated on tour during the year 1936-37.

Districts	Castrations performed.				Treated for contagious diseases.				Treated for non-contagious diseases.				Total number of castrations performed and cases treated.				
	Number of Veterinary Assistants employed.	Number of Villages visited.	Equines.		Bovines.		Others.		Total.	Equines.		Bovines.		Others.		Total.	
			Equines.	Bovines.	Equines.	Bovines.	Others.	Total.		Equines.	Bovines.	Others.		Total.			
Vizagapatam Circle— Vizagapatam ..	11	1,787	5	2,459	81	2,545	..	1,948	170	2,118	53	6,923	215	7,191	11,854		
Rajahmundry Circle— East Godavari (Agency) Do. (Plains) West Godavari ..	3 5 4	417 510 440	3 2 ..	943 1,865 898	34 7 23	980 1,374 921	..	2,058 877 2,288	41 877 17	2,099 877 2,305	10 39 27	919 2,403 1,826	57 87 36	986 2,509 1,889	4,065 4,760 6,115		
Beavada Circle— Kistna .. Gunur ..	8 5	802 753	11 3	1,771 789	107 199	1,889 991	..	3,946 3,608	33 47	3,979 3,655	28 45	2,633 3,079	114 104	2,775 3,228	8,643 7,874		
Nellore Circle— Nellore .. Cuddapah ..	10 7	1,566 877	.. 1	1,659 725	335 434	1,994 1,160	46	4,664 2,237	60 204	4,770 2,441	22 6	5,031 1,895	312 28	5,365 1,929	12,129 5,580		
Bellary Circle— Bellary .. Kurnool ..	6 8	440 545	12 8	1,686 1,019	710 627	2,408 1,654	..	720 3,024	27 80	747 3,104	25 70	1,934 4,302	33 101	1,992 4,473	5,147 9,231		
Madanapalle Circle— Chittoor .. Anantapur ..	6 6	1,181 639	7 9	3,543 1,410	1,115 2,082	4,665 3,601	24	2,526 1,892	35 41	2,561 1,957	29 71	3,943 2,411	166 93	4,138 2,575	11,364 8,033		
Vellore Circle— North Arcot .. Salem ..	6 5	756 710	.. 3	1,708 1,018	82 441	1,785 1,462	..	1,372 4,321	7 839	1,379 5,161	19 36	1,675 1,748	181 175	1,875 1,959	5,039 8,582		
Coimbatore Circle— Coimbatore .. The Nilgiris ..	8 3	1,184 317	7 ..	2,786 377	2,270 178	5,013 555	..	13,636 1,408	227 53	13,863 1,461	81 55	4,950 996	199 483	5,230 1,534	24,106 3,550		
Calicut Circle— Malabar .. South Kanara ..	6 5	566 505	.. ..	2,032 1,843	75 141	2,107 1,984	1	1,558 427	41 1	1,900 428	6 5	2,022 2,394	271 157	2,299 2,556	6,306 4,968		
Madura Circle— Madura .. Ramanad .. Tinnevely ..	4 4 5	586 671 601	.. .. ..	1,056 735 1,602	243 465 132	1,299 1,200 1,734	..	1,822 1,081 128	26 68 38	1,348 1,149 166	37 11 1	2,683 2,807 2,604	136 228 91	2,856 3,046 2,696	5,503 5,395 4,596		
Trichinopoly Circle— Trichinopoly .. Tanjore ..	5 5	676 1,040	.. 1	742 1,735	240 315	982 2,051	..	1,195 1,666	105 ..	1,300 1,667	11 12	1,491 2,342	62 74	1,564 2,428	3,846 6,146		
Madras Circle— South Arcot .. Chingleput ..	4 4	484 686	.. ..	2,617 1,200	138 21	2,755 1,221	..	2,318 1,116	52 71	2,370 1,292	54 13	2,623 3,236	272 66	2,949 3,315	8,074 5,828		
Total ..	143	18,742	72	37,663	10,495	48,230	178	61,636	2,283	64,097	766	68,870	3,721	73,357	1,85,684		

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—										
Vizagapatam ..	6	6	6	94	57	157	439	6,888	3,161	10,488
Rajahmundry Circle—										
East Godavari ..	9	9	68	553	33	654	1,052	12,514	5,239	18,805
West Godavari ..	3	3	15	230	18	263	278	4,040	1,878	6,196
Bezwada Circle—										
Kistna ..	7	7	1	189	6	196	475	9,763	3,886	14,124
Guntur ..	5	5	12	216	17	245	317	5,760	2,600	8,677
Nellore Circle—										
Nellore ..	3	3	19	210	24	253	1,200	3,280	1,077	5,557
Cuddapah ..	4	4	2	16	1	19	119	4,971	927	6,017
Bellary Circle—										
Bellary ..	4	4	15	72	23	110	455	4,089	1,854	6,398
Kurnool ..	4	4	13	219	5	237	876	4,529	2,145	7,550
Madanapalle Circle—										
Chittoor ..	2	2	1	277	14	292	126	4,603	1,364	6,093
Anantapur ..	3	3	27	318	17	362	426	2,965	1,198	4,589
Vellore Circle—										
North Arcot ..	3	3	16	232	43	291	451	5,395	1,579	7,425
Salem ..	5	5	67	1,442	462	1,971	1,098	5,643	2,863	9,604
Coimbatore Circle—										
Coimbatore ..	9	11	122	2,087	207	2,416	908	15,534	8,279	24,721
The Nilgiris ..	2	2	13	32	258	303	162	1,234	3,949	5,345
Calicut Circle—										
Malabar ..	4	4	18	204	73	295	182	4,488	6,958	11,623
South Kanara ..	2	2	1	22	9	32	51	2,666	1,942	4,659
Madura Circle—										
Madura ..	5	5	138	207	42	387	477	6,579	4,072	11,128
Ramnad ..	5	5	1	87	26	114	123	5,180	2,157	7,459
Tinnevely ..	2	2	15	527	20	562	98	2,663	1,306	4,067
Trichinopoly Circle—										
Trichinopoly ..	4	5	14	201	61	276	215	8,405	2,357	10,977
Tanjore ..	9	9	6	296	26	328	304	16,096	4,107	20,477
Madras Circle—										
South Arcot ..	4	4	13	203	37	253	323	7,723	1,297	9,343
Chingleput ..	5	7	34	252	111	397	455	9,798	3,644	13,897
Madras City ..	2	5	275	449	458	1,182	227	3,662	8,246	12,135
Total ..	111	119	912	8,635	2,048	11,595	10,837	158,433	78,085	247,355
Private Institutions—										
Vizianagram ..	1	1	190	420	10	620	406	1,888	910	3,204
Pithapuram ..										
Sivaganga ..										
Kannivadi ..										
Total ..	1	1	190	420	10	620	406	1,888	910	3,204
Grand total ..	112	120	1,102	9,055	2,058	12,215	11,243	160,321	78,995	250,559

Figures not

DIX IV.

Veterinary Hospitals and Dispensaries during the year 1936-37.

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.	Rs.	A.	P.	Rs.	A.	P.
(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
10,645	271	5	1,631	19	1,655	1,354	1	0	13,913	4	0
19,459	665	4	2,191	21	2,216	604	5	0	23,476	12	11
6,459	219	3	708	11	722	140	8	0	8,221	14	9
14,320	137	6	1,063	33	1,102	784	5	0	18,136	10	6
8,922	123	6	442	120	568	573	5	0	11,923	2	10
5,810	71	3	300	16	319	211	15	0	7,655	6	3
6,036	45	..	1,019	724	1,743	189	14	0	9,276	15	5
6,508	143	6	622	267	895	150	12	0	9,027	15	4
7,787	81	1	463	408	872	82	13	0	9,813	15	1
6,885	79	..	957	114	1,071	97	2	0	5,501	4	2
4,951	48	8	282	181	471	302	11	3	7,717	0	11
7,716	128	11	813	75	888	121	6	0	7,452	2	6
11,575	252	..	358	352	721	224	1	0	12,905	2	4
27,137	476	21	1,723	703	2,447	1,508	5	0	23,613	0	8
5,648	106	6	66	38	110	2,077	6	0	7,963	14	8
11,918	137	1	633	85	719	590	8	0	11,512	11	1
4,691	123	..	475	215	690	275	4	6	5,820	10	7
11,515	50	4	954	370	1,328	806	3	0	14,860	4	11
7,574	71	1	891	327	719	77	5	0	11,727	9	0
4,629	25	1	149	48	198	113	12	0	6,379	12	0
11,253	168	2	904	387	1,293	617	7	0	11,791	13	0
20,805	1,904	7	1,264	658	1,929	2,028	12	0	24,526	6	7
9,596	395	..	784	56	840	174	3	0	10,236	12	11
14,294	104	4	813	105	922	1,067	15	0	16,743	2	11
13,317	..	6	16	19	41	5,103	3	0	18,894	10	5
258,950	5,831	108	19,021	5,352	24,479	19,277	5	9	3,09,092	7	9
3,824	430	30	82	41	153	312	8	0	2,897	9	0
available.									1,260	0	0
3,824	430	30	82	41	153	312	8	0	6,781	8	7
262,774	6,261	136	19,103	5,393	24,632	19,589	18	9	3,15,824	0	4

APPENDIX V.

STATEMENT SHOWING THE RECEIPTS AND CHARGES OF THE CIVIL
VETERINARY DEPARTMENT FOR 1936-37.*Receipts.*

	RS.	A.	P.
XXIV. b. Agriculture—Veterinary receipts—			
College receipts	29,788	13	0
Rents on buildings	3,380	8	0
Contribution from local bodies	2,120	0	0
Sale of used animals in the Serum Institute	4,689	0	0
Other receipts	14,031	10	11
Total—Veterinary Receipts	54,009	15	11

Recoveries of Overpayments—

Veterinary	166	1	3
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Collection of payments for services rendered—

Veterinary			
Contribution towards leave salary	642	9	0
Other receipts			
Deduct refunds—Veterinary	846	10	0

Charges.

34. b. Agriculture—Veterinary—

A. Direction—

Non-voted—

Pay of officers	26,400	0	0
Allowances	4,079	4	0

Total—Non-voted 30,479 4 0

Voted—

Pay of Establishments	19,908	7	0
Allowances	2,947	6	2

Other charges—

Books and periodicals	1,533	15	3
Service postage and telegrams	1,902	4	3
Other contingencies	4,081	14	8
Apparatus and materials	3,926	5	0
Customs duty	106	4	0

Total—Voted 34,406 8 4

Total—Direction 64,885 12 4

Charges—cont.

34. b. Agriculture—Veterinary—cont.

B. Circle Officers—

Non-voted—

Other charges—

	RS.	A.	P.
Rates and taxes	222	13	0
Voted—			
Pay of officers	54,954	15	0
Pay of establishments	26,956	7	0
Allowances	20,215	10	0

Other charges—

Rents	1,728	0	0
Service postage and telegrams	6,340	0	3
Other contingencies	3,597	11	5
Grants-in-aid (horse breeding operations)	300	0	0
Compensations under the Glanders and Farcy Act	118	8	0

Total—Voted 1,14,211 3 8

Total—Circle Officers 1,14,434 0 8

C. Touring Establishments—

Agency—Voted—

Pay of establishments	3,950	4	0
Travelling allowance	1,413	6	0
Contingencies	639	4	3

Total—Agency 6,002 14 3

Touring Establishments—Transferred—

Voted—

Pay of establishments	1,59,476	1	0
Allowances	47,972	9	0
Contingencies			
Tour charges	13,305	10	3
Service postage and telegrams	4,859	14	3
Other contingencies	10,787	10	6
Purchase of sera including freight	83,907	9	3

Total—Transferred 3,20,309 6 3

Total—Touring Establishments 3,26,312 4 6

D. Hospitals and dispensaries—Agency—Voted—

Pay and Travelling allowance of Establishments	3,607	3	0
Other charges	1,343	5	8

Total—Agency 4,950 8 8

Charges—cont.

34. b. Agriculture—Veterinary—cont.

	RS.	A.	P.
D. Hospitals and Dispensaries—			
Transferred—Non-voted—			
Other charges—Rates and taxes	857	9	10
Voted—			
Pay of establishments	1,77,574	3	0
Other charges—			
Allowances and honoraria	5,282	14	0
Pay of menials	39,853	14	6
Rents	12,897	5	7
Petty construction and repairs	6,486	12	0
Office expenses	7,806	5	10
Service postage and telegrams	4,442	11	3
Other contingencies	3,546	9	10
Supplies and services	27,520	4	9
Total—Transferred—Voted	2,85,411	0	9
Total—Transferred	2,86,268	10	7
Total—Hospitals and dispensaries	2,91,219	3	3

E. Veterinary College—

Non-voted—

Pay of officers	5,215	0	0
Allowances and honoraria	1,535	10	0
Contingencies—Rates and taxes	7,501	15	0
Total—Non-voted	14,252	9	0

Voted—

Pay of officers	42,444	8	0
Pay of establishments	32,600	6	0
Allowances and honoraria	5,618	2	0

Contingencies—

Pay of menials	2,509	4	0
Electric current and telephone charges	1,837	14	7
Office expenses and cleaning charges	2,009	8	9
Other contingencies	2,587	11	3

Supplies and services—

Scholarships	1,542	2	0
Apparatus and materials	10,031	13	10
Feed and upkeep of sick animals	2,835	4	7
Maintenance of shoeing forge	1,640	8	0
Other supplies and services	716	4	4

Total—Voted .. 1,06,373 7 4

Total—Veterinary College .. 1,20,626 0 4

Charges—cont.

34. b. Agriculture—Veterinary—cont.

F. Serum Institute—

	RS.	A.	P.
Non-voted—			
Other charges—Rates and taxes	2,708	14	0
Voted—			
Pay of officers	7,683	1	0
Pay of establishments	15,783	11	0
Travelling and other compensatory allowance	1,012	15	0
Electric current and telephone charges	2,351	8	6
Pay of menials	5,865	4	0
Livestock	26,398	10	0
Maintenance charges	19,047	7	6
Service postage and telegrams	1,571	7	6
Other contingencies	9,257	12	7
Apparatus and materials	2,961	9	3
Total—Voted	91,933	6	4
Total—Serum Institute	94,642	4	4

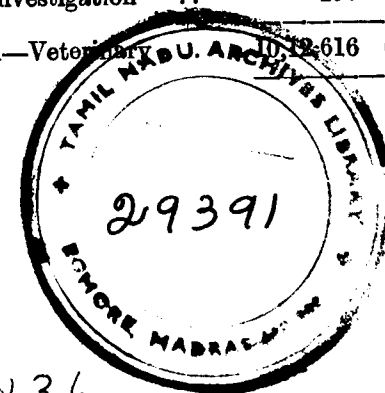
G. Veterinary Investigation—

Voted—

Pay of staff and other charges—			
Veterinary Investigation Officer	6,107	0	0
Veterinary Assistant Surgeon, clerk and peon	1,891	0	0
Travelling Allowance and other compensatory allowance	3,517	1	0
Other contingencies	647	8	8
Apparatus and materials	496	7	0
Deduct charges recoverable from Government, departments, etc.	— 12,162	9	8

Total—Veterinary Investigation .. 496 7 0

Total—Veterinary .. 10,12,616 0 5



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Government of Madras

DEVELOPMENT DEPARTMENT

G.O. No. 1907, 19th August 1937

Veterinary—Administration Report—1936-37—Recorded.

READ—the following paper :—

From the Director of Veterinary Services, dated 22nd July 1937,
No. R.O.C. 671-A/37.

Order—No. 1907, Development, dated 19th August 1937.

Recorded.

2. A new officer was recruited on contract for the post of lecturer in Pathology and Bacteriology in the Madras Veterinary College. The strength of the subordinate staff was increased by nearly 30 appointments, chiefly for augmenting the touring staff. The number of hospitals was increased by one during the year. In accordance with the recommendation of the Retrenchment Committee, the Government have decided to augment the touring staff rather than hospitals and to open veterinary institutions only where there is local support forthcoming.

3. The year witnessed the inauguration of the degree course in the Madras Veterinary College. The strength of the College showed a small increase and the first year class had in it 28 degree course students and 22 diploma course students. The nine months' refresher course was held during the year. There was a considerable increase in the total number of cases treated and operations performed at the College hospital. A number of very interesting experiments was carried out in the Pathology, Bacteriology and Parasitology sections of the College laboratory. Among them may be mentioned :—

- (1) an enquiry into the efficient method of treatment of Nasal Schistosomiasis;
- (2) Rhinosporidiosis and its mode of infection;
- (3) Malignant tumour of the horns of cattle; and
- (4) contagious pleuro pneumonia among goats.

The number of specimens examined in the Pathology section increased, while that in the Parasitology section decreased in the year.

4. The Serum Institute opened in April 1932 completed its fifth year of existence. The manufacture of anti-rinderpest serum, anti-hæmorrhagic septicæmia serum and rinderpest virus was continued. The activities of the institute have been expanded by the undertaking of manufacture of anti-hæmorrhagic septicæmia serum and 160,500 unit doses of 15 c.c. were produced. 1,356,000 doses of 5 c.c. of anti-rinderpest serum were manufactured during the year under review as against 1,101,800 doses manufactured during the previous year. The total quantity of anti-rinderpest serum actually issued from the institute also rose owing to an increase in the incidence of rinderpest in the Presidency. Corresponding to the increase in demand for anti-rinderpest serum, there was also a rise in the demand for virus, the quantity of which issued during the year exceeded that of last year by 30,150 c.c. Goat virus was also continued to be supplied during the year but only in smaller quantities. A feature of the year's work was the conduct of experiments with spleen tissue vaccine intended to replace goat blood virus alone method. The result of these experiments will be watched with interest. Experiments to ascertain the minimum effective dose in anti-rinderpest inoculations have yielded definite results in most parts of the Presidency. Apart from the control of actual outbreaks of rinderpest, the department continued the protection of cattle in anticipation of outbreaks of the disease. An interesting experiment was made in the use of vaccine against blackquarter which had hitherto been treated by serum inoculation. Nearly 24,500 animals were protected by vaccine alone method and the results have been reported to be satisfactory. Thirty-six thousand eight hundred and fifteen animals were protected by serum alone method and 81,308 by the sero-vaccine method. No definite conclusions have yet been arrived at in regard to a suitable and efficient treatment for nasal schistosomiasis in cattle.

5. The Special Veterinary Investigation Officer continued his work throughout the year. The incidence of sheep and goat diseases was investigated and he conducted a preliminary enquiry into bovine trypanosomiasis in two districts and conducted a test for Johne's disease at the Hosur Cattle Farm. The study of distribution of rhinosporidiosis in bovines suggests that the disease exists in the same localities in human beings also. The work and life-history and treatment of spirocæra sanguinolenta in dogs has been taken up.

6. During the year attempts were made to minimise delay in attending to outbreaks by expediting registration of outbreaks of contagious diseases and despatch of reports of such outbreaks to veterinary staff. The village headmen have been directed to send reports of outbreaks direct to the Veterinary Assistant Surgeons. The assistance of village panchayats, co-operative societies, etc., has also been enlisted in the matter. The diseases of sheep and goats and poultry were for the first time recorded during the year.

7. The steady decline of mortality among cattle has received a set back during the year owing to an increase of mortality from all the contagious diseases. Rinderpest which reached the lowest point last year has again claimed a heavier toll. There was a recrudescence of hæmorrhagic septicæmia and blackquarter in several districts, resulting in comparatively heavy mortality. There were nearly 1,000 deaths in excess from anthrax and nearly 2,000 deaths from blackquarter and foot-and-mouth diseases. The exact reasons for this sudden increase are not ascertainable. Eleven cases of Johne's diseases and three cases of tuberculosis were confirmed during the year.

8. The total number of patients treated in the veterinary institutions increased by over 9,000 and the number of cases treated by itinerating staff by nearly 22,000. The number of castrations performed also increased. Most of the castrations were performed by Burdizzo method which is becoming more popular. The compulsory inoculation of cattle entering the bison areas of reserved forests in the Coimbatore district continued during the year. Two Veterinary Assistant Surgeons have been sanctioned with a view to conducting a survey of the cattle pentas of the Nallamalai hills in the Kurnool and Cuddapah districts. The propaganda work consisted in the distribution of leaflets on popular diseases, participation in exhibitions and shows, lectures at cattle fairs and holding of magic lantern lectures and demonstrations. Extensive work was also done through the medium of motor vans.

9. The expenditure of the department increased from a little over Rs. 9.79 lakhs in 1935-36 to Rs. 10.13 lakhs during the year under review.

(By order of His Excellency the Governor)

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, Land Revenue and Settlement.
 „ 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.

DEVELOPMENT DEPARTMENT.

NOTES CONNECTED WITH G.O. No. 1907, DEVELOPMENT, DATED 19TH AUGUST 1937.

[*SUBJECT.—Civil Veterinary Department—Administration report for 1936-37.*]

The Director of Veterinary Services has submitted the annual administration report of the Civil Veterinary Department for the year ending 31st March 1937.

2. *Touring of officers.*—Mr. P. T. Saunders was in charge of the Department throughout the year. The touring done by the District Veterinary Officer during the year as compared with those of the previous two years is as below :—

Designation. District Veterinary Officers.	Number of days toured.		
	1934-35.	1935-36	1936-37.
Vizagapatam ..	188	237	199
Rajahmundry ..	241	183	204
Bezwada ..	191	193	194
Nellore	165	197	205
Bellary	169	182	192
Madanapalle ..	164	182	194
Vellore	214	200	229
Coimbatore ..	181	205	190
Calicut	191	182	182
Madura	198	180	190
Trichinopoly ..	182	193	192
Madras	202	172	214

The standard for the touring of officers is six months in a year. From the statement above, it is clear that all the officers have done the minimum touring, and that the District Veterinary Officers, Madras and Vellore have done the largest touring.

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3. *Extent of Veterinary aid.*—The following statement shows the total number of Veterinary Assistant Surgeons, hospitals and dispensaries and touring billets at the end of the year and at the end of the last two years :—

Veterinary Assistant Surgeons.	1934-35.	1935-36.	1936-37.
Including temporary posts.	274	282	309
Only permanent posts.	257	257	247
Hospitals and Dispensaries.	112	113	111
Touring billets ..	103	109	133

The fall in the number of Veterinary hospitals and dispensaries is due to certain institutions being transferred to Orissa. Thirty additional posts of touring Veterinary Assistant Surgeons were sanctioned by Government during the year.

4. *Contagious Diseases.*—The number of deaths from the more fatal and contagious diseases during the year was 22,723. The following are the details :—

	1934-35.	1935-36.	1936-37.
Rinderpest	3,243	2,752	5,102
Anthrax	2,300	2,383	3,339
Hæmorrhagic septi-cæmia	6,825	5,664	6,353
Blackquarter	6,416	5,857	7,929
Foot-and-mouth disease	1,720	976	2,965

It would appear from the above, that cattle mortality has increased during the year to a large extent and a rise in all diseases is apparent. Rinderpest, which was the lowest on record during 1935-36, has again shown an unfavourable rise during 1936-37. It has been found that this disease breaks out in regular waves at intervals of ten years, the last peak having been reached in the year 1928-29. The Director Veterinary Services states that if the present rise in the incidence of the disease is considered to be the beginning of the next wave, the position may be considered to be a satisfactory one, as compared to a similar period of 1926-27, when the mortality recorded was 23,676. The total number of animals protected against rinderpest by the different methods was as follows :—

			Cattle.
Serum simultaneous method	..	..	136,443
Goats blood virus	..	..	62,905
Serum-alone method	..	..	3,230
	Total	..	202,578

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5. *Touring Staff.*—The strength of the touring staff during the year was increased by thirty. The total number of cases treated by the itinerating staff during the year was 137,454 as against 115,316 of the previous year. Of these 64,097 were contagious cases and 73,357 were non-contagious.

6. *Hospitals and dispensaries.*—The following statement compares the work done during the year with those of the previous years :—

	1934-35.	1935-36.	1936-37.
Number of cases treated.	242,860	253,230	262,774
Number of cases supplied with medicine ..	8,149	4,582	6,261
Number of castrations performed	21,179	24,068	24,479

7. *Prevention of Cruelty to Animals Act.*—The number of convictions under the Act and the number of animals sent to infirmaries, excluding those for the Madras City are compared below with those of previous years :—

		Number of convictions.	Number sent to infirmaries
1932-33	..	10,299	2,620
1933-34	..	9,595	3,283
1934-35	..	11,408	3,454
1935-36	..	12,551	3,780
1936-37	..	12,418	2,786

Trichinopoly and Coimbatore districts have recorded as usual, the largest number of convictions, the figures for these two districts being 3,163 and 2,035 respectively.

8. *Veterinary College.*—The total number of students in the College at the end of the year and those that were awarded diploma are compared with those of previous years :—

		Strength.	Number awarded diplomas.
On 31st March 1932	..	125	39
" 1933	..	118	22
" 1934	..	117	26
" 1935	..	107	30
" 1936	..	96	24
" 1937	..	101	15

The Board considered that the results of the examinations were on the whole satisfactory. Nine students underwent the Refresher course this year.

9. *Research.*—As usual, research work was continued at the Madras Veterinary College laboratory. The number of specimens received and examined in the different sections of the laboratory including the clinical laboratory was 10,363. Interesting specimens which were examined and which deserve special mention are detailed in paragraphs 32-33 at pages 13-16 of the report.

10. *Serum institute*.—During the year, 1,356,000 unit doses of anti-rinderpest serum were manufactured, as against 1,101,800 unit doses during the previous year. The increased output was due to the increase in the incidence of rinderpest in the Presidency. The stock of anti-hæmorrhagic septicæmia serum on hand, at the beginning of the year was 28,760 unit doses of 15 c.c. each and 160,500 unit doses were manufactured and completed during the year. As the demand for anti-rinderpest serum increased there was also a rise in the demand for bull virus. The quantity of bull virus issued during the year was 181,450 c.c. as against 151,300 c.c. in the previous year. The quantity of goat virus supplied during the year was 55,050 c.c. as against 61,450 c.c. in the previous year.

11. The Superintendent, Government Press, has been asked to publish the report in advance of the review.

The section of the report dealing with Research work in the laboratory is highly technical and gives too many details which may well be relegated to a separate scientific report.

The year witnessed the inauguration of the Degree course and the college was able to attract 28 students for the course the qualification for admission to which being higher than that to the Diploma course.

Some of the experiments in the Serum Institute and in the College Laboratory are of very great interest, e.g., preparation of goat spleen tissue to replace goat blood virus alone method of vaccinations, the use of vaccine against Blackquarter in place of Blackquarter Serum, attempts to find an efficient treatment for Nasal Schistosomiasis in cattle, study of the mode of infection of Rhinopsporidiosis in bovines—a disease discovered both in bovines and human beings in the same localities, treatment of cases of spirocercosis in dogs, etc.

The minimum safe and effective dose of anti-rinderpest serum has practically been settled.

Contagious diseases have been more virulent and the toll they claimed was greater. Number of outbreak reports received by the staff and the number attended by it increased by 2,200 and 2,360 respectively.

Inoculations against rinderpest increased by 29,547.

Anthrax occurred in almost all districts.

H. Septicæmia was severe in Vizagapatam, Kistna, Nellore, Tanjore, Malabar and Chingleput.

Blackquarter was on the increase in Chittoor, Tanjore, Nellore, Trichinopoly and South Arcot.

Foot-and-mouth disease prevailed throughout the Presidency and the worst districts were Salem, Tanjore and Coimbatore.

I submit a draft review for approval.

R. RAMASWAMI AYYANGAR—8-8-37.

The Administration report of the Madras Veterinary Department for the year 1936-37 is submitted for perusal. The draft review on it placed below is for approval.

C. J. PAUL—11-8-37.

V. I. M[UNISWAMI PILLAI]—13-8-37.

E[RSKINE]—17-8-37.

Issue to Director of Veterinary Services in manuscript and then send to Press.

C.J.P.—18-8-37.

[G.O. No. 1907, Development, dated 19th August 1937.]