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ANNUAL ADMINISTRATION REPORT  
OF THE  
MADRAS CIVIL VETERINARY  
DEPARTMENT

FOR THE YEAR  
1940-41

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# ANNUAL ADMINISTRATION REPORT OF THE MADRAS CIVIL VETERINARY DEPARTMENT FOR THE YEAR 1940-41

## I. STAFF.

### (1) ADMINISTRATION.

I continued to be in charge of the department throughout the year under report.

During the period, I toured for 130 days and inspected 11 District Veterinary offices, 66 Veterinary institutions and 80 touring billets. I also inspected the offices of the Principal, Madras Veterinary College, the Livestock Development Officer, the Superintendent, Serum Institute, the Inspector of Livestock and the Veterinary Investigation Officer and the farm animals stationed at the Livestock Research stations, Hosur and Guntur. During one of my tours, I inspected one of the motor exhibition vans of this department, visited Sugali Metta and attended the Mahanandi Cattle Show. An interior tour in the Coimbatore district was performed, during which over 50 breeding bulls of the District Board and Premium Schemes were inspected. I inspected the Vanniankulam Estate Dairy, Melacheval, Tinnevely district, and the Pollipalli Ramabrahmam Dairy and Cattle Farm at Proddatur. I attended the meetings of the Advisory Board of the Imperial Council of Agricultural Research at New Delhi, the Animal Husbandry Wing of the Board of Agriculture and Animal Husbandry at Izatnagar and the Provincial Marketing Board at Madras. I also visited the Pasteur Institute and Nutrition Laboratory at Coonoor, the Agricultural College, Coimbatore, and the American Arcot Mission Agricultural Institute and Egg Marketing Centre at Katpadi. I served as President of the Board of Examiners for conducting the Supplemental Examinations held at the Madras Veterinary College in October 1940 and for the Refresher Course and Professional Examinations held in March 1941 and also as an University Examiner for the B.V.Sc. Final Examinations held during the year. I interviewed candidates for the selection of Veterinary Assistant Surgeons for recruitment along with the members of the Madras Public Service Commission.

### (2) INDIAN VETERINARY SERVICE.

2. There was only one Indian Veterinary Service Officer in the department during the year under report.

### (3) INDIAN AGRICULTURAL SERVICE.

3. Mr. R. W. Littlewood, the only officer of the Indian Agricultural Service employed in this department, continued to hold charge of the post of Livestock Development Officer during the

year under report. He held also additional charge of the post of the Superintendent, Livestock Research Station, Hosur Cattle Farm, from 14th to 28th February 1941, both days inclusive.

#### (4) MADRAS VETERINARY SERVICE.

4. Sri M. R. V. Panikkar continued to hold charge of the post of officiating Principal and Lecturer in Medicine, Madras Veterinary College during the year except for the period from 26th July to 24th August 1940, when he was on leave. Sri Rao Sahib M. Anantanarayana Rao held the post of Lecturer in Parasitology, Personal Assistant to the Principal, Resident Veterinary Officer and Warden of the Hostel throughout the year and also officiated as Principal, Madras Veterinary College, in addition to his own duties from 2nd to 24th August 1940. Sri K. S. Nayar continued as Superintendent, Serum Institute, during the year except for the period from 3rd September to 22nd November 1940, when he was on leave. Sri A. K. Mitra held charge of the post of District Veterinary Officer, Trichinopoly, from the beginning of the year till 13th July 1940 when he was posted as acting Lecturer in Hygiene, Madras Veterinary College. He took charge of the latter post on 19th July 1940 and continued in it till the end of the year. Sri C. Venkataratnam Chetti held charge of the Vizagapatam Circle from 1st April to 19th June 1940. He went on leave on average pay for four months from 20th June 1940 and retired from service on superannuation pension from 20th October 1940. Sri G. A. Ajwani continued to be in charge of the Madras Circle during the year except during the periods from 13th September to 2nd October 1940 and from 18th March 1941 to the end of the year, when he was on leave. Sri Rao Sahib C. S. Murti continued to be on leave till 31st May 1940 and retired from service on superannuation pension from 1st June 1940. Sri T. S. Alagappa Pillai held charge of the Vellore Circle till 30th September 1940 and retired from service on superannuation pension from 1st October 1940. Sri A. L. N. Somayajulu continued to be on leave throughout the year. Sri K. Seshagiri Rao was in charge of the Rajahmundry Circle till the 3rd of October 1940. He was on leave from 4th to 15th October 1940 and retired from service on superannuation pension from 16th October 1940. Sri Rao Sahib H. N. Chelva Ayyangar continued as Lecturer in Anatomy at the Madras Veterinary College. He held additional charge of the post of Lecturer in Hygiene from 21st May to 19th July 1940, both days inclusive. Sri M. A. Rangaswami Ayyar continued as Lecturer in Physiology during the year except for the period from 12th August to 19th September 1940 when he was on leave. During his absence his assistant Sri K. N. Govindan Nayar officiated as Lecturer in Physiology under rule 4 (a) (i) of the General Rules for Provincial Services. Sri M. Sundaranathan continued to be Lecturer in Pharmacology, Madras Veterinary College, during the year. Sri M. Ponnayya continued to be in charge of Coimbatore Circle throughout the year. Sri R. Swaminathan continued



as Lecturer in Surgery, Madras Veterinary College, during the year. In addition, he carried on the current duties of the post of District Veterinary Officer, Madras, from 18th to 26th March 1941, both days inclusive. On the expiry of his leave, Sri L. Kumaraswami took charge of the Vizagapatam Circle on the 20th July 1940 and continued to be in charge of this Circle till 6th December 1940. He went on leave for two months from 7th February 1941. Sri T. Vinayaka Mudaliyar, after completing his training at the Imperial Dairy Institute, Bangalore, was posted as District Veterinary Officer, Trichinopoly. He took charge on the 16th August 1940 and continued in the post until 23rd February 1941 when he was posted as Superintendent, Livestock Research station, Hosur Cattle Farm, on the reversion of Sri T. Budhavidheya Rao Nayudu, a member of the Madras Agricultural Service, to the Agricultural Department. Sri T. Vinayaka Mudaliyar took charge at Hosur Cattle Farm on 1st March 1941 and remained there till the end of the year. M. Noor Ahmed Sahib Bahadur was in charge of Bezwada Circle throughout the year except for the period from 26th August to 30th November 1940 inclusive of transit, when he was posted to act as Superintendent, Serum Institute, Madras, during the absence of Sri K. S. Nayar on leave. He was declared to be a full member of the service in Category 5 of Class I with effect from 1st April 1938. Sri M. Y. Mangrulkar continued as Lecturer in Pathology and Bacteriology, Madras Veterinary College, during the year and he was appointed as a full member of the service in Category 4 of Class I with effect from 25th August 1939. Sri T. Raghavan continued to hold charge of the Madanapalle Circle throughout the year. He was appointed to be a full member of the service in Category 5 of Class I with effect from 1st June 1940. Sri S. N. Tammayya continued as District Veterinary Officer, Calicut, till 1st October 1940 when he was transferred as District Veterinary Officer, Vellore. He took charge of the latter post on 2nd October 1940 and continued in it till the end of the year. He was appointed to be a full member of the service in Category 5 of Class I with effect from 20th October 1940. Sri P. A. Parthasarathi Nayudu acted as Superintendent, Livestock Research station, Hosur Cattle Farm, till the 20th April 1940 when he was posted as District Veterinary Officer, Nellore. He took charge of the latter post on 27th April 1940 and continued in it till the close of the year. He was appointed to be a full member of the service in Category 5 of Class I with effect from 1st October 1940.

5. The following probationers held acting appointments in the service throughout the year:—

- (i) Sri P. K. Devanayakam,
- (ii) „ K. Samirasimha Rao,
- (iii) „ V. Janakirama Ayyar;

the following officers held appointments in the Madras Veterinary Service for different periods during the year:—

- (i) Sri H. Viswanath.
- (ii) „ B. V. Seshadri.
- (iii) „ N. R. Rajaratnam. (His probation in Category 4 of the Madras Veterinary Service was terminated from 21st May 1940.)
- (iv) Mr. Bertie A. D'Souza.
- (v) Sri K. V. Raghavachari.
- (vi) „ L. Audinarayana Sarma.
- (vii) „ K. Sukumara Rao.

6. Sri G. R. Viswanathan continued to hold the post of Veterinary Investigation Officer throughout the year.

7. Sri S. D. Devadoss Pillai, who proceeded on leave last year, died on 25th September 1940. Mr. P. G. Rozario acted as Inspector of Livestock under rule 4 (a) (i) of the General Rules for Provincial Services from 1st October 1940 to 30th November 1940, both days inclusive.

8. In the place of Sri T. Murari, whose reversion to the Agricultural Department was ordered during the year and who proceeded on military duty, Sri T. Budhavidheya Rao Nayudu of the Madras Agricultural Service was posted as Superintendent, Livestock Research Station, Hosur Cattle Farm, and he took charge of the post on 20th April 1940. He continued in this post till 14th February 1941 when he was reverted to the Agricultural Department as Headquarters Deputy Director of Agriculture, Madras.

9. Sri M. R. Subramania Sastri, a member of Madras Veterinary Subordinate Service, was appointed on the 19th July 1940 as Veterinary Research Officer in connexion with the scheme of the Imperial Council of Agricultural Research for research into indigenous drugs of India used in Veterinary practice with special reference to their toxicology.

#### (5) MADRAS VETERINARY SUBORDINATE SERVICE.

10. The strength of the cadre of Veterinary Assistant Surgeons (Madras Veterinary Subordinate Service, Class I) on 31st March 1941 was 352 including the following 107 temporary posts as against 344 at the end of March 1940:—

Veterinary Assistant Surgeons, Serum Institute .. .. .	11
Assistant to the Veterinary Investigation Officer, Madras.	1
Assistant Lecturer in Animal Hygiene, Agricultural College, Coimbatore .. .. .	1
Special Veterinary Assistant Surgeon on export duty at Tuticorin .. .. .	1
Veterinary Assistant Surgeons for touring billets sanctioned from time to time .. .. .	61
Veterinary Assistant Surgeons for Veterinary dispensaries sanctioned from time to time .. .. .	11
Leave reserve at 6½ per cent of the temporary posts .. .. .	6

Special Veterinary Assistant Surgeons for penta duty ..	2
Veterinary Assistant Surgeons for propaganda vans ..	3
Veterinary Assistant Surgeons for the Madras Veterinary College ..	2
Veterinary Assistant Surgeons for Livestock work ..	4
Veterinary Assistant Surgeon for Helminthiasis Scheme ..	1
Veterinary Assistant Surgeon for Milk Recording Scheme (held in abeyance) ..	1
Veterinary Assistant Surgeon for Toxicology Scheme ..	1
Veterinary Assistant Surgeon for the Director's office ..	1
	107

11. The 352 posts were distributed as shown below during the year 1940-41 :—

Itinerating—Plains .. .. .	149
Agency .. .. .	3
In charge of institutions—Plains .. .. .	119
Agency .. .. .	2
Leave reserve for permanent section .. .. .	29
Leave reserve for temporary section .. .. .	6
Attached to Director's office .. .. .	2
Employed in the Madras Veterinary College .. .. .	13
Employed in the Serum Institute .. .. .	11
Employed in the Agricultural department .. .. .	2
Employed in the Forest department .. .. .	2
Employed under Veterinary Investigation Officer .. .. .	1
Special Veterinary Assistant Surgeon on export duty at Tuticorin .. .. .	1
Special Veterinary Assistant Surgeons on penta duty at Nallamalais .. .. .	2
Attached to propaganda vans .. .. .	3
Attached to Livestock section .. .. .	4
Employed under the Helminthiasis Scheme .. .. .	1
Employed under the Toxicology Scheme .. .. .	1
Vacant (Milk Recording Scheme—held in abeyance) .. .. .	1
	352

## II. EDUCATION—MADRAS VETERINARY COLLEGE.

### (1) COURSES OF STUDY.

12. The third-year class under the new regulations was started in July 1940. The courses of instruction of the old curriculum of studies of three years diploma and ten terms degree were continued during the year along with the new course of four years diploma and five years degree. There were a few failed students belonging to the old regulations in the second and third year classes, but all the students in the first year class belonged to the new regulations.

## (2) ADMISSION OF STUDENTS.

13. The number of students laid down for admission is 40 from the Madras Presidency and 10 from places outside, including Coorg. The committee selected 39 candidates for the combined diploma and degree course and one for the diploma course. The same official and non-official members as last year constituted the selection committee this year also. The committee met at Bezwada on the 21st June 1940 and at Madras on the 24th June 1940. All the selected candidates were Intermediates in Arts and Science except the one S.S.L.C. candidate, selected for the diploma course. The following table shows the representation of the different communities among the selected candidates:—

	Bezwada.	Madras.	Total.
Brahmans .. ..	8	13	21
Non-Brahmans .. ..	5	10	15
Muhammadans .. ..	2	..	2
Anglo-Indians and Christians.	..	2	2
Scheduled castes .. ..	..	..	..
<b>Total ..</b>	<b>15</b>	<b>25</b>	<b>40</b>

Eight candidates belonging to places outside the Presidency were admitted, six for the degree course and two for the diploma course. After filling in the vacancies which occurred among the candidates selected for admission, the strength of the first-year class, including failed students who joined the college in October 1940 was 42. Of these, two students later resigned. At the end of the year, the number of students on the rolls in all the three classes was 120 (40 in the I year class, 47 in the II year class and 33 in the III year class) as against 128 in the previous year. The communal representation was as follows:—

	Number.
Brahmans .. ..	50
Non-Brahmans .. ..	52
Muhammadans .. ..	6
Anglo-Indians and Christians	10
Scheduled castes .. ..	..
Sikh .. ..	1
Buddhist .. ..	1
<b>Total ..</b>	<b>120</b>

## (3) TRAINING.

14. In addition to the lectures in the class room and instructions during practical classes in the laboratories, the students had ample opportunities to study the various diseases of animals treated in the hospital sections attached to the college. The final year students received practical instruction in the technique of the manufacture of biological products in the Serum Institute and they

were deputed as usual to the Hosur Cattle Farm for a period of six weeks during the summer vacation of 1940 for practical training in dairying and livestock work.

#### (4) SCHOLARSHIPS.

15. Of the four scholarships sanctioned for the first-year class, only three could be awarded, namely, one scholarship to a Muhammadan student and two scholarships to Non-Brahman backward class students. The fourth lapsed, as there was no deserving student of the Indian Christian community. At the end of the year, the scholarship holders in the different classes were as follows:—

	Non-Brahmans backward.	Muhammadans.	Indian Christians.
First-year class ..	2	1	..
Second-year class ..	2	1	1
Third-year class ..	2	..	1

#### (5) PROFESSIONAL EXAMINATIONS.

16. The supplementary diploma examinations for the failed students of the third-year class and for those provisionally promoted to the second and third-year classes on the result of the examinations in March 1940, were held between the 7th and 12th October 1940, with the following results:—

	Number appeared.	Number passed.
First-year examination (four-year course).	11	11
Second-year examination ( do. ).	6	6
Second-year examination (three-year course).	2	2
Third-year examination ( do. ).	10	8

The annual diploma examinations were conducted from the 19th March 1941 to the 29th March 1941 excluding Sunday, the 23rd March. The results were as shown below:—

	Number appeared.	Number passed.
First-year class ( four-year course) ..	39	17
Second-year class ( do. ) ..	37	17
Do. (three-year course) ..	7	..
Third-year class ( four-year course) ..	22	11
Do. (three-year course) ..	11	8

With the exception of the results in the second-year class of the three-year course, the Board of Examiners considered the results on the whole to be satisfactory.

The results of the University (B.V.Sc.) examinations held during the year were as follows :—

	Number appeared		Passed completely.	Passed by parts.
	whole.	for parts.		
May 1940—				
Preliminary (New regulations) .. .. .	35	..	27	..
Intermediate, Part I (New regulations) ..	20	..	10	..
Intermediate (Old regulations) .. .. .	7	4	2	4
October 1940—				
Preliminary (New regulations) .. .. .	..	5	..	5
Intermediate, Part I (New regulations) ..	9	6	3	6
Intermediate (Old regulations) .. .. .	1	6	..	3
Final (Old regulations) .. .. .	13	5	3	1
January 1941—				
Final (Old regulations) .. .. .	9	10	1	4

Eight University graduates of the college took their B.V.Sc. degree at the convocation held in August 1940 and one at the supplemental convocation held in February 1941.

#### (6) REFRESHER COURSE.

17. The Refresher Course was held as usual from July 1940 to March 1941. Seven students, i.e., six from the Civil Veterinary Department, Madras, and one from the Veterinary Department, Hyderabad State (Deccan) underwent the course.

#### (7) STOCKMEN'S COURSE.

18. This course was not conducted during the year.

#### (8) HOSTEL, HEALTH AND ATHLETICS.

19. The hostel attached to the college was fully occupied. The medical inspection of the students of the college was conducted this year by Dr. M. Chakrapani Menon, M.B., B.S., D.G.O., Madras. The health and discipline of the students on the whole were satisfactory. Sri M. Sundaranathan, Lecturer in Pharmacology, was in charge of the athletic activities of the college throughout the year with the Principal as President and ten students forming the sports committee. Sri M. Sundaranathan and Sri P. M. Thillanayagam, Assistant to the Lecturer in Medicine, represented the college in the Madras Collegiate Athletic Association. The students took a keen interest in the out-door games, football, hockey, cricket, tennis and volley-ball. Out of ten friendly matches played, they won eight. They also took part in the inter-collegiate tournaments with a fair amount of success. In the Loyola College volley-ball tournament, they were the runners-up. The tennis cup (singles) of the Annamalai University was won by a college student. In addition to the ordinary games, the students of all classes are taken by turns for physical drill every morning by the Physical Instructor. The College Day annual sports were held on the 19th of February 1941 under the presidentship of H. M. Hood, Esq., C.S.I., C.I.E., I.C.S., Adviser to His Excellency the Governor of Madras. Mrs. H. M. Hood gave away the prizes to the winners.

Under the auspices of the Madras Veterinary College Medical Association, seven meetings were held during the year and the inaugural address of the association was delivered by Captain Vaidyaratna G. Srinivasamurthi, B.A., B.L., M.B. & C.M., Principal of the Indian Medical School, Madras.

## (9) HOSPITAL.

20. The subjoined tables show the cases treated and surgical operations and castrations performed during the three years ending 1940-41:—

Table I (Cases treated).

	1938-39.	1939-40.	1940-41.
<b>In-patients—</b>			
Bovines .. .. .	385	271	509
Equines .. .. .	218	199	208
Others .. .. .	611	525	547
<b>Out-patients—</b>			
Bovines .. .. .	2,584	2,693	2,814
Equines .. .. .	276	364	282
Others .. .. .	5,377	5,947	6,039
<b>Total .. .. .</b>	<b>9,451</b>	<b>9,999</b>	<b>10,399</b>
Daily average attendance ..	128.95	123.43	130.87

Table II (Operations).

	1938-39.		1939-40.		1940-41.	
	Major	Minor.	Major.	Minor.	Major.	Minor.
Bovines .. .. .	200	145	124	166	164	244
Equines .. .. .	17	27	4	19	14	27
Others .. .. .	36	421	31	262	9	241
<b>Total .. .. .</b>	<b>253</b>	<b>593</b>	<b>159</b>	<b>447</b>	<b>187</b>	<b>512</b>

Table III (Castrations).

	1938-39.	1939-40.	1940-41.
Bovines .. .. .	24	15	13
Equines .. .. .	6	2	6
Others .. .. .	13	14	20
<b>Total .. .. .</b>	<b>43</b>	<b>31</b>	<b>39</b>

The medical and surgical cases treated in the different wards of the hospital during the year were as shown below:—

*Medical cases.*

	Bovines.	Equines.	Others.
Contagious diseases (including rabies) .. .. .	24	3	233
Protozoan diseases .. .. .	58	1	14
Respiratory diseases .. .. .	151	7	144
Digestive .. .. .	1,003	49	2,645
Circulatory .. .. .	6	..	46
Urinary .. .. .	2	1	38
Nervous .. .. .	5	3	170
Generative .. .. .	358	..	41
Locomotor .. .. .	46	5	53
Skin (parasitic) .. .. .	4	2	10
Skin (non-parasitic) .. .. .	19	71	934
Miscellaneous .. .. .	196	24	720

*Surgical cases.*

	Bovines.	Equines.	Others.
Abscesses, wounds, etc. . . . .	798	160	420
Tumours, cysts, etc. . . . .	20	36	88
Hernia, prolapse, etc. . . . .	19	1	7
Diseases of bones . . . . .	82	7	55
" articulation . . . . .	169	13	79
" muscles, tendons, etc. . . . .	15	26	2
" blood vessels and nerves . . . . .	..	2	18
" glands . . . . .	179	1	53
" foot . . . . .	33	26	60
" eyes, nose, throat, mouth, ear, etc. . . . .	91	18	437
" Uro-genital system . . . . .	12	8	114
Miscellaneous . . . . .	13	26	*196

\* Represents docking tails 107 and destruction 89.

Seventy-one cases of skin disease in the horse were admitted during the year and in two of them, the histo-pathological examination of the skin revealed micro-filaria, but the species of the filaria could not be identified.

Izukka's test was applied to eighteen horses and three of them proved positive. Two of the positive cases were going lame fairly frequently in the fore limbs. They were given calcium salts internally with a reduction in wheat bran and an increase of lucerne. After a period of six weeks, they improved and are still under observation.

One pony, suspected for rabies, was admitted and kept under observation. It died during the period of observation and the examination of its brain proved positive for rabies.

The application of ' Urea ' to extensive wounds was tried with successful results.

A case of equine piroplasmosis (*Babesia equi*) was successfully treated with Quinine Hydrobromide.

## (10) VETERINARY DISPENSARY, RAYAPURAM.

21. The number of cases treated in the Veterinary Dispensary at Rayapuram during the three years 1938-39 to 1940-41 is shown below :—

	1938-39.	1939-40.	1940-41.
Bovines . . . . .	1,707	1,572	1,477
Equines . . . . .	79	99	56
Others . . . . .	2,516	2,726	2,578
<b>Total . . . . .</b>	<b>4,302</b>	<b>4,397</b>	<b>4,111</b>
Daily average attendance . . . . .	46.8	48.2	44.4

In all, 42 major operations and 163 minor operations and 4 castrations were performed in this dispensary during the year. Twenty cases were transferred from this institution to the Madras Veterinary College Hospital for further treatment.

## (11) RADIOLOGY.

22. Thirty-five radiographs for diagnostic purposes were taken during the year as against forty last year.



## (12) SHOING FORGE.

23. Eight hundred and thirty-nine horses were shod during the year and the feet of 52 horses were repaired as against 884 and 144, respectively, during the previous year.

The profit during the year was Rs. 415-8-0 whereas the profit during the previous year amounted to Rs. 764-4-0. The fall in the profit is due to the fall in the number of horses shod and to the increase in the cost of materials. The students were given as usual full facilities for receiving practical instruction in the art of shoeing.

## (13) FEES.

24. The number of cases admitted into the Madras Veterinary College Hospital and the fees realized during the three years ending 1940-41 are given below :—

Years.	Number of cases admitted.	Fees realized.		
		RS.	A.	P.
1938-39 .. .. .	9,451	6,391	3	0
1939-40 .. .. .	9,999	5,867	12	0
1940-41 .. .. .	10,399	6,797	2	0

## (14) LABORATORY.

## (I) (a) Pathology and Bacteriology section.

## (i) Specimens examined.

25. The number of specimens examined was 3,620 as against 2,944 of last year. The following are the details :—

	Number.
1 From the staff of the Civil Veterinary Department ..	2,634
2 From the wards of the Madras Veterinary College Hospital, Veterinary Dispensary, Rayapuram, Helminthology Research section and Parasitology section .. .. .	242
3 From the Hosur Cattle Farm .. .. .	570
4 From the Veterinary Investigation Officer, Madras ..	94
5 From the Corporation of Madras .. .. .	28
6 From Coorg .. .. .	15
7 From the Agricultural College, Coimbatore .. .. .	18
8 From private bodies .. .. .	5
9 From Pudukkottai State .. .. .	3
10 From Forest department .. .. .	9
11 From Veterinary Investigation Officer, Karachi .. .. .	2
<b>Total .. .. .</b>	<b>3,620</b>

The above number is exclusive of the various specimens examined in connexion with the post-mortem examinations conducted either on requisition from the different wards of the College Hospital or on small animals in connexion with Biological tests in routine diagnosis and class work.

26. The following table shows the results of examination of the more important specimens:—

Bacteriology—		Pathology—cont.	
Hæmorrhagic Septicæmia ..	106	Adenoma .. ..	13
Specific bovine lymphangitis ..	64	Round-celled sarcoma .. ..	40
Anthrax .. ..	57	Melanoma .. ..	14
Blackquarter .. ..	40	Squamous-celled carcinoma ..	210
John's disease .. ..	19	Adeno-carcinoma .. ..	1
Tuberculosis .. ..	7	Basal-cell carcinoma .. ..	1
Bovine contagious abortion	5	Endothelioma .. ..	2
(Agglutination test).		Lymphocytoma .. ..	3
Strangles .. ..	3	'Actinomycotic' Granuloma.	6
Streptococcal mastitis (smears).	2	Rhinosporeidiosis (Bovine and	
Streptothricosis .. ..	1	Equine) .. ..	5
'Actinomycosis' .. ..	1	Nasal Schistosomiasis .. ..	1
		Cutaneous microfilariasis	
		(Equine) .. ..	1
		Dermatitis due to Demodex	
		(Bovine) .. ..	1
		Fluke cirrhosis .. ..	2
		Miliary tuberculosis (Avian	
		liver) .. ..	1
		Enteritis (Non-specific) .. ..	45
		Caprine Pleuro-Pneumonia ..	6
		Capillaria nodules in the	
		oesophagus of a fowl .. ..	1
		Parabronema tumours in an	
		elephant's stomach .. ..	1
Pathology—			
Inflammatory fibrous tissue ..	138		
Fibroma .. ..	14		
Myxo-fibroma .. ..	1		
Fibromyoma .. ..	1		
Leiomyoma .. ..	1		
Fibro-sarcoma .. ..	2		
Neuro-fibroma .. ..	3		
Lipoma .. ..	2		
Chondroma .. ..	1		
Haemangioma .. ..	1		
Papilloma .. ..	31		

27. The total number of brains examined for rabies was 112 as against 104 of last year; the details of examination being as follows:—

	Positive.	Inconclusive.	Total.
Canines .. ..	71	26	97
Bovines .. ..	6	1	7
Equines .. ..	1	..	1
Cat .. ..	2	1	3
Others—			
(a) She-goat .. ..	3	..	3
(b) Ram .. ..	1	..	1
<b>Total .. ..</b>	<b>84</b>	<b>28</b>	<b>112</b>

(ii) Post mortem examinations.

28. One hundred and fourteen autopsies were conducted as against 156 of the last year, the details of which are given below:—

Canines .. ..	85
Bovines .. ..	11
Poultry .. ..	8
Equines .. ..	3
Cats .. ..	4
Monkey .. ..	1
Rabbits .. ..	2
<b>Total .. ..</b>	<b>114</b>

This number does not include the number of autopsies conducted on laboratory animals used for experimental purposes and biological tests. Among the post-mortems conducted the following results are of interest :—

- (1) Streptothricosis in 2 dogs.
- (2) Tuberculosis in 1 dog.
- (3) Nephrolithiasis in 1 horse
- (4) Nephrolithiasis and urinary calculi in 1 dog.
- (5) Perforating verminous aneurism of the posterior aorta, due to spirocerca sanguinolenta—two cases.

(iii) Urine Hormone.

29. 16.06 litres of urine hormone for the treatment of 83 cases of physiological sterility were supplied to the staff as against 14.6 litres during the previous year. The reports so far received in respect of 67 cases indicate beneficial results in 10 cows, 8 bulls, 8 she-buffaloes and one dog.

(iv) Autogenous vaccines.

30. Seventy-six autogenous vaccines were prepared and supplied during the year as against 70 of last year. The results of the treatment as reported show that 61.8 per cent of the cases were cured and 14.7 per cent improved. Stock vaccine against Bovine Lymphangitis was supplied for 106 cases, and reports received indicate uniformly satisfactory results. The preparation and issue of Bovine Lymphangitis vaccine was transferred to the Serum Institute, Madras, on the 1st January 1941.

(v) Biological tests.

31. These were conducted with materials suspected for Blackquarter, Hæmorrhagic Septicæmia, Anthrax, Fowl Cholera and Doyle's disease, as detailed below :—

	Positive.	Negative.	Total.
Blackquarter .. .. .	12	35	47
Hæmorrhagic Septicæmia ..	12	34	46
Anthrax .. .. .	2	44	46
Fowl Cholera .. .. .	..	2	2
Doyle's disease .. .. .	..	11	11
Total .. .. .	26	126	152

(b) *Parasitology section.*  
Specimens examined.

32. The materials for examination were received from the following sources:—

	From.	Number.
1	Staff of the Civil Veterinary Department, Madras .. .. .	6,000
2	Livestock Section of the Civil Veterinary Department .. .. .	55
3	Private sources .. .. .	9
4	Forest Department .. .. .	16
5	Coorg .. .. .	8
6	The Veterinary Investigation Officer, Madras.	4
7	Veterinary Investigation Officer, Hyderabad (Deccan) .. .. .	1
8	Other sections of the College .. .. .	50
	Total .. .. .	<u>6,143</u>

33. The following is a comparative table of the number of specimens examined during the last three years:—

	1938-39.	1939-40.	1940-41.	
1	Staff of the Civil Veterinary Department, Madras .. .. .	3,612	3,904	6,000
2	Other sources .. .. .	43	66	143
	Total .. .. .	<u>3,655</u>	<u>3,970</u>	<u>6,143</u>

34. The following are the details of specimens examined:—

Blood smears—	Faeces—	
Babesia Eigemina .. .. .	Ova of oxyuris sp. .. .. .	2
Babesia mutans .. .. .	ascaris sp. .. .. .	76
Babesia canis .. .. .	strongyles sp. .. .. .	322
Babesia gibsoni .. .. .	anchylostomes .. .. .	106
Babesia caballi .. .. .	trichuris sp. .. .. .	11
Babesia sergenti .. .. .	capillaria sp. .. .. .	1
Trypanosoma evansi—	spirocerca .. .. .	14
Equines .. .. .	tape worms .. .. .	43
Bovines .. .. .	trematodes except-	
Canine .. .. .	ing schistosomes .. .. .	73
Elephant .. .. .	schistosoma spin-	
Trypanosoma theileri (in	dalis .. .. .	6
tissue juice) .. .. .	schistosoma indicum	1
Hepatozoon canis .. .. .	schistosoma suis .. .. .	1
Microfilaria in blood .. .. .	Oocysts of coccidia eimeria	
“ in skin sections .. .. .	sp. .. .. .	193
Spirochaetes .. .. .	Oocysts coccidia isospora sp.	1
Anæmic changes .. .. .	Cysts of ciliates .. .. .	2
Negative .. .. .	Negative .. .. .	1,149
Total .. .. .	Total .. .. .	<u>2,001</u>

Scrapings from skin—				Nasal washings—			
Sarcoptes sp.	..	..	122	Ova of schistosoma nasalis..			363
Psoroptes sp.	..	..	17	Sporangia of rhinosporidium.			3
Cnemidocoptes sp.	..	..	9	Negative .. .. .			190
Demodex sp.	..	..	37				
Trichophyton sp.	..	..	151	Total ..			<u>556</u>
Aspergillus sp.	..	..	2	Horn growths, other growths,			
Larval ticks .. .. .			11	etc. .. .. .			35
Negative .. .. .			828	Helminths .. .. .			145
				Ecto-parasites .. .. .			49
				Miscellaneous .. .. .			22
Total ..			<u>1,177</u>	Grand total ..			<u>6,143</u>

## (c) Clinical laboratory.

35. This laboratory works in conjunction with the hospital and the following specimens were examined:—

Specimens examined.	1939-40.	1940-41.
1 From Corporation .. .. .	97	183
2 From Madras Hunt Club .. .. .	8	25
3 From Wards and Veterinary Dispensary, Rayapuram .. .. .	4,749	4,769
4 Pinjrapole .. .. .	4	..
Total ..	<u>4,858</u>	<u>4,977</u>

36. The results of examination are detailed as follows:—

Smears—				Scrapings—			
Babesia canis .. .. .			51	Sarcoptes .. .. .			16
„ gibsoni .. .. .			8	Cnemidocoptes .. .. .			1
Hepatozoon canis .. .. .			20	Demodex .. .. .			58
Babesia bigemina .. .. .			14	Negative .. .. .			421
„ mutans .. .. .			33				
„ equi .. .. .			5	Total ..			<u>496</u>
Bacillus tuberculosis .. .. .			11	Nasal washings—			
Microfilaria .. .. .			1	Schistosoma nasalis .. .. .			32
Anthrax .. .. .			1	Negative .. .. .			15
Miscellaneous .. .. .			5				
Negative .. .. .			1,999	Total ..			<u>47</u>
Total ..			<u>2,148</u>	Ectoparasites .. .. .			4
Faeces—				Helminths .. .. .			7
Anchylostomes .. .. .			537	Growths .. .. .			7
Spirocerca .. .. .			57	Others .. .. .			5
Strongyles .. .. .			146				
Ascaris .. .. .			102				
Trichuris .. .. .			4				
Trematodes .. .. .			14				
Cestodes .. .. .			3				
Eimeria .. .. .			35				
Taenia species .. .. .			8				
Dypilidium caninum .. .. .			14				
Negative .. .. .			1,343				
Total ..			<u>2,263</u>				

*(d) Biology section.*

37. The biology museum continues to be enlarged. About 30 specimens were added to it during the year. This year's noteworthy additions are mounted specimens of the life-histories of frogs and butterflies, an octopus, a monitor lizard and some interesting plant specimens like pines, fly-traps, etc., from the United States of America. Further additions to the museum and classification of the specimens are in progress. As usual, excursions to places of biological interest were conducted for the benefit of the students. A three-day trip to Mettur is a special feature of the excursion activities of the year. Thirty-five students and three members of the staff formed the party and the trip was considered by all a great success.

*(e) Physiology section.*

38. Lectures and practical classes in physiology and biochemistry were held as usual. Five hundred and forty-one specimens of urine, etc., were examined during the year. The following table shows the species of animals from which the specimens were received:—

Urine—horse 97, cattle 95, dog 275, goat 1, hare 1, elephant 4 and tiger 1. Peritoneal fluid—cattle 1; fluid from oedematous swelling—cattle 2 and dog 1; urinary deposits—cattle 1; calculi—horse 1, and dog 1; milk—cow 5; bile—cattle 1; serum for calcium estimation—cattle 1; blood for cell count—dog 1; blood for chloride estimation—cattle 52.

The following abnormal constituents were noted in the specimens of urine examined:—

	Horse.	Cattle.	Dog.	Others.	Total.
Albumin .. .. .	11	18	95	2	126
Bile salts .. .. .	..	..	13	..	13
Bile pigments .. .. .	..	..	16	..	16
Blood .. .. .	12	13	13	..	38
Casts .. .. .	..	..	31	1	32

Samples of blood were obtained from the Serum Institute, Madras, and their chloride contents estimated with a view to find out their normal chloride content and whether any variations existed in the chloride content of blood taken from the same animal at different bleedings. The values of these did not show any abnormal variations.

*(f) Chemistry section.*

39. The central hall on the ground floor of the main building was converted into a lecture hall for Chemistry and equipped. The number of materials received in this section for chemical analysis was five. The analysis of food stuffs was undertaken with special reference to their flourine content in the investigation of endemic fluorosis. Four samples of fodder used for cattle in different villages in Kurnool and Madura districts were received

from the Veterinary Investigation Officer, Madras, for analysis with reference to their flourine content. All the four samples were ashed and analysed and were found to contain traces of flourine. These results are significant enough to show the other possible sources of flourine derived from foodstuffs besides that from water.

(g) *Anatomy section.*

40. Forty subjects of the ox-type and one each of the horse and the dog were preserved and used for demonstrations, dissections and examination purposes during the year.

Five specimens were received during the year for examination. Necessary notes on the dissections of the specimens and the lesions present on the bones were made and the interesting portions of the specimens were transferred to the Surgery section for mounting them as (Surgical) museum specimens.

Enquiries regarding certain anatomical information and the supply of certain anatomical material both from within and outside this Presidency were attended to.

During the year under report, anatomical deviations in the disposition of certain blood vessels, nerves, muscles and organs (in the ox-type) have been observed and studied. The most interesting of all the anatomical findings during the year was the deviation in the disposition of the left kidney of an adult ox.

(h) *Pharmacology section.*

41. Twenty-nine students were given practical training in compounding and dispensing. The number of prescriptions dispensed during the year was 25,774 (horses 1,918, cattle 6,505 and dogs 17,053) including 298 private prescriptions (with a daily average of 70.6) as compared to 24,847 prescriptions of the previous year.

(i) *Hygiene section.*

42. The final year students of the degree and diploma (old regulations), the students of the third year class (new regulations) and the refresher course students were taken round on excursions to the Kilpauk Corporation Water Works, Co-operative Milk Supply Union, Ayyanavaram, Corporation Slaughter-houses, Pig slaughter-houses, garrison military dairy farm, etc., where lectures and demonstrations were given to students.

(2) *Features which deserve special mention.*

(a) *Pathology section.*

43. *Johne's disease.*—The occurrence of this disease has been confirmed microscopically in 13 cows, 1 bullock and 3 bulls of the Hosur Cattle Farm, in 1 bullock of the Livestock Research station, Guntur, and 1 bullock in the Veterinary Hospital, Bellary.

*Tuberculosis.*—Cases of pulmonary tuberculosis continued to occur amongst the conservancy bullocks of the Madras Corporation and the disease was microscopically confirmed in six cases. In

addition, the disease was confirmed microscopically in a bull from Negapatam.

*Anthrax*.—The diagnosis of the disease was confirmed microscopically in two elephants. The smears were received from Palghat and Puttur.

*Actinomyces*.—Seven cases of actinomyces in five bullocks, one bull and one she-buffalo were diagnosed, the granulomata were situated on the eye-lid, gum, inside lower lip, cheek, face, nostrils, neck and lower third of the forearm.

*Streptothrix*.—The diagnosis of this disease was confirmed microscopically in a dog. The smears from the lung were received from Trichinopoly.

*Rhinospodiosis*.—This disease was confirmed microscopically in the nasal growths of three ponies and two bullocks.

*Lymphocytoma*.—The condition was confirmed microscopically in two fowls of the Hosur Cattle Farm and in one fowl of Atmakur.

*Carcinomata*.—A large number of these tumours was diagnosed. This neoplasm is by far the most frequently encountered one in bovines, the usual sites being the horn and the eye.

The following interesting neoplasms were diagnosed:—

- (1) Basal-cell carcinoma on the lower jaw of a bull calf.
- (2) Endothelioma of the horn and lungs of a bullock.
- (3) Angio-endothelioma on the neck of a dog.
- (4) Angio-endothelioma on the buccal cavity of a buffalo.
- (5) Neuro-fibroma in the eye of a bullock.
- (6) Neuro-fibroma on the skin of a cow and a bullock.

*Bovine contagious abortion*.—Eighty-three samples of sera and two samples of synovial fluid of 82 bovines and 3 ovines suspected for contagious abortion were received as detailed below for agglutination test as against 125 of last year:—

Hosur Cattle Farm	.. .. .	62
Special Veterinary Assistant Surgeon, Nandyal	.. .. .	6
Livestock Research Station, Guntur	.. .. .	3
Veterinary Assistant Surgeon, Veterinary Hospital, Bezwada	.. .. .	3
Do.	Tellicherry	.. 2
Do.	Pollachi	.. 2
Do.	Proddatur	.. 1
Do.	Madanapalle	.. 1
Do.	Tiruvarur	.. 1
Do.	Bobbili	.. 1
Veterinary Investigation Officer, Madras	.. .. .	1
Touring Veterinary Assistant Surgeon, Atmakur	.. .. .	1
Do.	Dharmapuri	.. .. 1
	Total	.. 85

Of these, sera of four cows and one bullock were positive for agglutinins of *B. abortus*.



*(b) Parasitology section.*

44. A species of aspergillus in skin lesions simulating mange was discovered in the skin scrapings of a goat and a bullock from Kurnool. The Veterinary Assistant Surgeon concerned has published a report about this in the Indian Veterinary Journal.

From three bovines which showed an urticarial rash, it has been possible to detect a large trypanosome in the juice smears of the lesion, whereas the peripheral blood was free from this organism. The trypanosome resembled *Trypanosoma theileri*. A paper on this is under preparation for publication.

Skin sections from bullocks which showed thickening of the skin, as in mange, revealed microfilaria in the sub-cutis. The peripheral blood from those cases did not reveal any microfilaria.

A case of surra in an elephant was detected in the smears received from the Touring Veterinary Assistant Surgeon, Cannanore.

Nasal growths from a pony at Chicacole and from another at Tekkali revealed rhinosporidium. It is interesting to note here that in the Northern Circars rhinosporidium has been discovered only in the nasal growths of ponies so far and not in bovines.

Skin sections of a pony brought for treatment to the Madras Veterinary College Hospital, revealed microfilaria in the sub-cutis (lichen tropicus).

### III. SERUM INSTITUTE, MADRAS.

#### (1) ACCOMMODATION AND EQUIPMENT.

45. During the year under report, water convenience was given to the post-mortem room and the new laboratory block. Improvements to the sanitary and drainage arrangements were also undertaken in the latter part of the year and were in progress.

#### (2) LIVESTOCK AND FODDER.

46. One thousand and nine adult he-buffaloes, 314 buffalo-calves, 12 bull-calves and 1,353 sheep and goats were purchased during the year under report as against 915 adult he-buffaloes, 489 calves and 1,169 sheep and goats during the previous year. Twenty-nine he-buffaloes, 141 calves and 1,323 sheep and goats died during the year. Eleven out of the 12 bull-calves purchased were sold in auction after use and the remaining one died. Of the discontinued animals, 1,008 buffaloes, 135 calves and 28 sheep and goats were sold to the contractors and 35 calves were supplied free of cost to the Madras Veterinary College for class and laboratory purposes.

Twenty-three fowls and 38 pigeons were purchased in connexion with the manufacture of Fowl Cholera Serum, Vaccine and Fowl-pox Vaccine. Of these, 7 fowls and 17 pigeons died and 10

fowls and 16 pigeons were auctioned. There were 6 fowls and 5 pigeons at the end of the year.

The various articles of fodder required for the institute during the year were purchased on contracts based on tenders.

### (3) PRODUCTION OF VACCINES, SERA AND VIRUS.

#### (a) *Anti-Rinderpest Serum.*

47. One thousand and twenty-nine adult buffaloes for the manufacture of serum and 95 buffalo-calves for test purposes were utilized. The stock of this product at the beginning of the year was 52,000 doses of 5 c.c. each. Thirty-two brews of serum as against 34 of last year were manufactured this year and yielded 1,590,050 doses compared with 1,260,300 doses manufactured during 1939-40. The quantity supplied to the field amounted to 1,509,600 doses leaving a balance of 132,450 doses at the end of the year. An average of 1,545 doses as against 1,400 doses in the previous year was obtained from each serum producer.

#### (b) *Rinderpest Bull Virus.*

48. Sixty-six buffalo-calves were used and there was a mortality of 24 calves or 36.4 per cent among them. The quantity of bull virus issued during the year was 4,425 c.c. as against 7,500 c.c. in the previous year.

#### (c) *Rinderpest Goat Virus.*

49. The strains of goat virus, viz., the Madras strain, the Mukteswar strain and the new Mukteswar strain, were continued up to the beginning of January 1941, when the Madras strain and the Mukteswar strain were amalgamated into a single strain and run under the nomenclature of "Madras strain No. 2." Each of the two old strains had completed over 400 passages, and as there was no appreciable difference in their behaviour either in goats or in buffalo-calves, they were combined. From January 1941, two strains, viz., the Madras strain No. 2 and the new Mukteswar strain were continued. One thousand three hundred and thirty-three goats were used for all the strains with a mortality of 1,315 goats or 98.6 per cent. Two hundred and sixty-nine goats or 20.18 per cent could not be bled for virus due to unsatisfactory reactions. Each strain was uniform in potency throughout. As in the previous year, two control calves were used for every ten passages of each strain. The total quantity of goat virus issued was 495,825 c.c. compared with 351,450 c.c. of the previous year.

#### (d) *Rinderpest Goat Spleen Tissue Vaccine (Glycerinated).*

50. The manufacture of this product was discontinued after the 10th July 1940, as it was found to be unsuitable. A quantity of 12,175 c.c. was supplied.

(e) *Rinderpest Goat Spleen Vaccine (Saline).*

51. Four pieces (each weighing approximately one gramme) of infected goat spleen tissue were issued as against 131 pieces in the previous year. This method of vaccination was also discontinued, as it was found to be not quite safe.

(f) *Desiccated Goat Spleen Vaccine.*

52. After extensive trials with this product in the Institute in the previous year, samples of 5,100 doses were sent to selected areas for trial in actual outbreaks. The reports received thereon showed that it produced a severe reaction.

(g) *Anti-hæmorrhagic Septicæmia Serum.*

53. Nineteen adult buffaloes were used for the production of this serum. The opening balance was 8,860 doses of 15 c.c. each. One brew comprising 10,400 doses was produced in the year under report as against 15,220 doses of the previous year. Eight thousand eight hundred and twenty doses were supplied to the staff. On an average each serum-maker yielded 409.5 doses during the year as against 422 doses in the previous year.

(h) *Hæmorrhagic Septicæmia Vaccine.*

54. The stock of this vaccine at the beginning of the year was 16,150 doses of 5 c.c. each. Sixteen brews of the vaccine making 298,950 doses were manufactured this year as against 12 brews of 185,850 doses in the preceding year. Two hundred and fifty-two thousand two hundred and fifty doses were supplied to the staff as against 190,350 doses in the previous year. Each brew of vaccine was subjected to a rigorous test before release. Ninety-seven buffalo-calves were utilized for this purpose. The strains of *Pasteurella bovisseptica* maintained were of high virulence.

(i) *Anti-Blackquarter Serum.*

55. The manufacture of this product was undertaken during the year. Ten adult he-buffaloes were used for the production of two brews. Four thousand eight hundred and twenty doses of 15 c.c. each were manufactured.

(j) *Blackquarter Vaccine.*

56. Experiments connected with the manufacture of this product were completed during the year and the product released for field use. Two strains of *Clostridium chauvoei* received from the Imperial Veterinary Research Institute, Mukteswar, were used in the preparation of this vaccine. One hundred and seventy-nine thousand and fifty doses of 5 c.c. each, comprising 11 brews were manufactured. The brews were tested and proved to be sterile, safe and uniformly potent. Sixty-five thousand and four hundred doses were supplied to the staff. One hundred and six buffalo-calves, 12 bull-calves, 8 sheep and 71 guinea pigs were used for experiments and testing.

(k) *Fowl Cholera Serum.*

57. The manufacture of this product was started during the year. Two strains of *Pasteurella aviseptica* were obtained from the Imperial Veterinary Research Institute, Mukteswar, and used. One adult buffalo was used and one brew of Fowl Cholera Serum consisting of 1,970 doses of 5 c.c. each was made and tested. Two hundred doses of serum were issued to the field. Two adult buffaloes and two fowls were used for testing the serum.

(l) *Fowl Cholera Vaccine.*

58. Nine hundred doses of 1 c.c. each of Fowl Cholera Vaccine were manufactured and tested, and 225 doses were supplied to the staff. Eight fowls and four pigeons were used for experiments and manufacture of the vaccine.

(m) *Fowl Pox Vaccine.*

59. This product was manufactured during the year. Experiments were started with fowl pox scabs received from the Hosur Cattle Farm. As the results were not quite good, fowl pox and pigeon pox crusts were obtained from the Imperial Veterinary Research Institute, Mukteswar. Six hundred doses or 180 c.c. were produced and tested before issue to the field. One hundred and fifty doses were supplied to the staff. Thirty-four pigeons and 13 fowls were used for the manufacture and test of this vaccine.

(n) *Bovine Lymphangitis Vaccine.*

60. The manufacture of this product was transferred from the Madras Veterinary College to this Institute during the year. The necessary seed material was received from the Principal. Two thousand and four hundred cubic centimeters of this product sufficient for 60 animals were produced and tested. One thousand five hundred and sixty cubic centimeters sufficient for 39 animals were supplied to the staff.

(o) *Other Sera and Vaccines.*

61. The various kinds of Sera and Vaccines purchased and issued to the staff during 1940-41 are mentioned below :—

	Bottles.
Anti-Anthrax Serum .. .. .	646
Anti-Blackquarter Serum .. .. .	* 355
Blackquarter Vaccine .. .. .	* 2,406
	Doses.
Anti-Tetanic Serum .. .. .	133
Fowl Cholera Serum .. .. .	* 400
Do. Vaccine .. .. .	* 485
Fowl Pox Vaccine .. .. .	* 1,677
Mallein Subcutaneous .. .. .	74

\* Purchased prior to the manufacture at the institute.

	Doses.
Tuberculin Subcutaneous .. .. .	88
Do. Concentrated .. .. .	465
Do. Avian concentrated .. .. .	395
Anti-Distemper serum .. .. .	24
Mixed streptococcic vaccine .. .. .	1
Anthrax Spore vaccine .. .. .	2,350
	Course.
Anti-Rabic vaccine .. .. .	1

## (4) LABORATORY.

## (a) Specimens examined.

62. Thirty thousand six hundred and ninety-four specimens were examined during the year under report. Of these, 30,403 were blood smears and 291 fæces. In 6,487 blood smears, positive results were obtained as detailed below:—

1 Anthrax .. .. .	1
2 Blackquarter .. .. .	2
3 Hæmorrhagic Septicæmia .. .. .	56
4 B. Subtilis .. .. .	35
5 Microfilaria .. .. .	4
6 Plasmodium .. .. .	17
7 Spirochaetes .. .. .	4
8 Trypanosomes .. .. .	45
9 Post mortem Invaders .. .. .	8
10 Hæmoproteus .. .. .	1
11 Theileria .. .. .	6,314
	<hr/>
	6,487

In 151 samples of fæces, positive results were obtained as detailed hereunder:—

1 Ova of Ascaris .. .. .	1
2 Ova of Strongylus .. .. .	7
3 Ova of Hæmonchus .. .. .	8
4 Ova of Fasciolidæ .. .. .	7
5 Tænia .. .. .	4
6 Oocysts of Coccidia .. .. .	124
	<hr/>
	151

## (b) Post mortem conducted.

63. One thousand four hundred and thirteen post-mortems were conducted. Parasitic infestations were recorded in 698 cases. Worms belonging to the order Strongyloidea were the commonest. A small proportion of Flukes, Tænia and Sarcocysts were also observed.

*(c) Potency tests.**(i) Tests of old Serum.*

64. Experiments in batches of susceptible buffalo-calves were conducted with a view to ascertain the period during which the serum retained its original potency in cold storage. Serum ranging from eleven months to one and a half years old was made use of and it was observed that there was no deterioration in potency.

*(ii) Experiments on the viability of rinderpest goat blood virus at incubator temperature.*

65. Experiments on the viability of rinderpest goat blood virus (citrate and defibrinated) when mixed with Voges Proskauer's solution and kept in the incubator at 37.5° C. were completed during the year. The results obtained were not encouraging.

Viability tests of rinderpest goat blood virus at room temperature were also conducted during the year.

*(d) Immunity tests.**(i) Serum simultaneous inoculation with goat virus and minimum safe dose of anti-rinderpest serum.*

66. After a series of trials with varying doses of anti-rinderpest serum with goat blood virus on several batches of serum producers, a dose of 5 c.c. per 100 lb. body weight was found to be a sufficiently safe one for indigenous breeds of buffaloes.

*(ii) Hæmorrhagic Septicæmia vaccine.*

67. As the immunity test conducted on Hæmorrhagic Septicæmia vaccination previously did not produce definite results, an attempt was made this year also to determine the period of protection conferred by the vaccine; the test continued to be in progress.

Experiments are in progress to compare the relative efficiency of carbolyzed and formalized Hæmorrhagic Septicæmia vaccine to that of the usual lyolyzed vaccine. Although encouraging results were obtained with the former two types of vaccines, it is too early yet to assess their merits.

*(iii) Hæmorrhagic Septicæmia serum.*

68. Hæmorrhagic Septicæmia serum in 15 c.c. dose was sufficient to protect two buffalo-calves after two days against an average lethal dose of virulent *Pasteurella bovisepitica* organisms given subcutaneously.

*(iv) Blackquarter vaccine.*

69. Trials to determine the period of immunity conferred by the vaccine are on hand.

## (5) FEATURES WHICH DESERVE SPECIAL MENTION.

70. The activities of this Institute were further extended by the additional manufacture of the following biological products for regular supply to the staff during the year :—

- (1) Anti-Blackquarter serum.
- (2) Blackquarter vaccine.
- (3) Fowl Cholera serum.
- (4) Fowl Cholera vaccine.
- (5) Bovine Lymphangitis vaccine.
- (6) Fowl-pox vaccine.

An article entitled "A study on goat spleen tissue vaccine as an immunizing agent against Rinderpest" was prepared by Sri K. S. Nayar, Superintendent, and Veterinary Assistant Surgeons Sri R. Krishnamurti and Sri G. S. Kalyanasundaram and sent to the Imperial Council of Agricultural Research during the year for publication in the *Indian Journal of Veterinary Science and Animal Husbandry*.

## (6) SALE OF BIOLOGICAL PRODUCTS.

71. During the year a sum of Rs. 582-3-1 was realized by the sale of biological products to outsiders.

## IV. LIVESTOCK SECTION.

## (1) ADMINISTRATION.

## (a) General.

72. The Animal Husbandry Section completed its third year from the date of its transfer to the Veterinary department. The Provincial Livestock Improvement Board constituted by Government in February 1940 to advise Government on schemes of improvement of livestock in the Province and to make suggestions for a revision of the schemes or policy in force, held its first meeting in August 1940. Various proposals submitted by the department were considered and the following recommendations were made :—

- (i) That breed associations for Ongole, Kangayam and Hallikar (Alambady) should be formed.
- (ii) That the general principle of a scheme for distribution of young bulls for breeding purposes to selected ryots or breeders in selected areas should be adopted.
- (iii) That subsidies should be given to recognized breeders and approved breeders who produce good type of bulls.
- (iv) That in order to keep the breeds pure and of a fixed type, nucleus herds of pure-bred cattle should be maintained at Government farms.
- (v) That cattle shows should be organized in breeding tracts and conducted with the aid of grants from Government

and that milking competitions also should be arranged at cattle shows or by Milking Co-operative Societies.

- (vi) That milk societies should take up the work of milk-recording of cows of different breeds in the breeding areas and in cities and towns as an aid to professional breeders in selecting good cattle for breeding.
- (vii) That a survey should be made of the buffalo-breeding areas and improvement of buffaloes be effected subject to funds being available to carry out the work.
- (viii) That the revised rules for the working of the schemes for maintenance of breeding bulls by the district boards with financial aid from Government be adopted and the selection of custodians to hold charge of the breeding bulls be made by the district boards with the approval of the Veterinary department.
- (ix) That a Livestock Improvement Fund should be constituted with the money now available from the Government of India Rural Development grant, the balance of donations made to His Excellency's Livestock Improvement Fund and with the moneys that may be available hereafter and that in the first instance the question of augmenting the fund should be examined.
- (x) That the proposals submitted by the Director of Veterinary Services for the improvement of poultry farming in the villages on lines similar to those recommended for cattle be adopted.

Definite proposals on each of the recommendations of the Board mentioned above are being submitted to Government for sanction.

(b) *Livestock.*

73. The total head of livestock under the control of the Livestock Development Officer at the close of the year was as detailed below :—

Cattle, buffaloes and ponies.

	At the Livestock Research Station,	
	Hosur.	Guntur.
Cows and heifers .. .. .	369	54
Breeding bulls and young bulls .. .. .	150	36
Calves .. .. .	154	17
Work cattle .. .. .	62	13
Ponies and mules .. .. .	4	..
<b>Total .. .. .</b>	<b>739</b>	<b>120</b>
Sheep .. .. .	292	..
Poultry .. .. .	422	28
At the Poultry Station, Kalahasti .. .. .	..	90
In the demonstration units at Vizagapatam, Rajahmundry, Bellary, Madura, Trichinopoly and Tinnevely .. .. .	..	98



The Piggery section was closed during the year and the stock of 25 pigs and piglings on the Livestock Research Station, Hosur, was disposed of.

74. There were 338 approved bulls and 42 buffalo bulls at stud in the districts during 1940-41, and 17,388 and 2,140 services respectively were performed during the period. It has not been possible for the district staff, in the midst of their other duties, to check all the calves born and judge the progress made in livestock improvement but from what has been done, it is pleasing to record that the progeny of these bulls is distinctly superior to the original stock of the village before grading. The villagers themselves have begun to appreciate the efforts of this department towards grading up their local cattle. The ryots in some districts however have yet to understand and realize their share of responsibility in the matter with regard to the feeding and rearing of calves. Unless the calves are well fed and well cared for, the results are not going to be as beneficial as they ought to be. Much propaganda work in this direction is called for by the district staff.

The place of honour in regard to the number of approved bulls maintained goes to Coimbatore district with 126 bulls at stud. Next comes Salem district with 48 bulls. Both these are breeding tracts. It is regrettable to note that in the only other recognized breeding tract in this Presidency, viz., the Ongole area, there were only 12 approved bulls altogether at stud in both the Nellore and Guntur districts. The ryots evidently pay more attention now to the raising of commercial crops such as tobacco, chillies, groundnut, etc., than to cattle-breeding and the raising of fodder crops. It will be very disappointing if the fine Ongole breed of established repute is allowed to deteriorate due to lack of co-operation on the part of the ryots of the area.

In the matter of buffalo-breeding, Kistna district heads the list with 14 approved bulls at stud.

#### (c) *Training in Animal Husbandry work.*

75. Two subordinate officers of the department who were deputed for post-graduate training in Animal Husbandry and Dairying at the Imperial Dairy Institute, Bangalore, completed their studies and reverted to the department. Another Veterinary Assistant Surgeon was deputed to the Livestock Research Station, Hosur, from 1st December 1940 to 28th January 1941 for training in milk-recording. The B.V.Sc. students from the Madras Veterinary College were given six weeks practical training at the Livestock Research Station, Hosur, in Animal Husbandry work. A cattleman deputed by the Anamalai Hills Cattle Society was also given three months training at the Livestock Research Station, Hosur, in clean milking and dairying.

(d) *The Livestock Research Station, Hosur.*

## (i) General.

76. This station is situated in the village of Mathigiri in the Salem district about 27 miles from Bangalore. The farm is 1,659 acres in extent, of which, about 65 acres are irrigable from rainfed tanks. The rest of the area constitutes pasture land which varies in texture from rich loam to poor hard gravel. The elevation is 3,000 feet above sea level and the rainfall varies from 30 to 40 inches.

The chief object of the farm is to raise pure-bred breeding bulls for supply to the districts and for this purpose nucleus herds of Kangayam, Hallikar and Scindhi breeds are maintained. A flock of sheep for purposes of experiments in connexion with a scheme sanctioned by the Imperial Council of Agricultural Research and some pens of foreign breeds of poultry for the production of eggs and cockerels for supply to the districts for breeding purposes are also maintained on the farm. A report on the work done on sheep and poultry breeding is given under the relevant sections of this report.

## (ii) Cattle.

77. There were 706 cattle on the farm at the beginning of the year including 62 work-cattle. During the course of the year, 164 calves were born, 4 young buffalo-bulls were purchased and 36 cattle were received from other places. One hundred and eight animals were sold, 48 transferred to Agricultural Stations and Veterinary institutions and one transferred to the Mysore Serum Institute for experiments in Johne's disease. Eleven died and seven were destroyed for Johne's disease or for other causes.

78. The strength of each of the herds including the work-cattle at the end of the year was as follows:—

Breed.	Cows.	Heifers.	Stud bulls.	Young bulls.	Heifer calves.	Bull calves.	Work animals.	Total.
Kangayam .. ..	107	72	4	58	46	33	30	350
Scindhi .. ..	63	53	4	51	15	27	15	228
Hallikar .. ..	33	26	2	11	17	13	3	105
Cross-bred .. ..	2	13	..	16	..	3	12	46
Buffaloes .. ..	..	..	..	4	..	..	..	4
Ongoles .. ..	..	..	..	..	..	..	2	2
Total .. ..	205	164	10	140	78	76	62	735

The number of calvings, viz., 164, during the year under report showed a fall as compared with that of the previous year, viz., 180, owing to the sale of an extra number of cows and heifers in the year 1939-40.

79. The percentage of calvings and the sex rates in the three chief herds were as shown below:—

Breed.	Average Number of cows maintained.	Number of calves born.	Sex ratio.				Percentage of calves born.
			Bull.		Heifer.		
			Number.	Percentage.	Number.	Percentage.	
			PER CENT.		PER CENT.	PER CENT.	
Kangayam.	102	83	35	42	48	57.8	81.4
Scindhi ..	61	46	28	60.9	18	39.1	75.4
Hallikar ..	31	32	15	46.9	17	53.1	100
Total ..	194	161	78	47.6	83	52.4	

80. The number of bulls and bull-calves of each breed issued from the farm for breeding purposes during the year was as follows:—

	Kangayam.	Scindhi.	Hallikar.	Cross-bred.	Total.
Transferred to other Government institutions .. ..	10	1		3	14
Sold to parties for breeding purposes ..	32	19	11	2	64
Total ..	42	20	11	5	78

Besides, 7 buffalo-bulls were transferred to other stations and one was sold for breeding. Thirty-two head of cattle consisting of cows, heifers and work-cattle were also sold as they were not up to the farm standard from the point of milk-yield, colour and conformation, etc., and 11 others were sold for slaughter, as they were suspected for Johne's disease. The demand for female stock continued to be heavy, but further sales were suspended in view of the decision to increase the total strength of the herds on the farm to 1,000 so that more breeding bulls will be available for supply to the districts.

(iii) Veterinary Hospital, Livestock Research Station, Hosur.

81. The general health of the animals during the year may be considered to have been satisfactory. The number of cases recorded for treatment in the Veterinary Hospital, was 3,156 as compared with 1,575 during the previous year. The large increase is explained by the number of sheep dosed for worms once a month as a routine in an attempt to keep the flock free from *Hæmonchus-Oesophagostome* infection.

(iv) Contagious diseases.

82. *Foot and mouth*.—There was an outbreak of foot and mouth disease which affected 204 head of cattle of which the cross-breds were as usual the worst sufferers. The use of tropical chloride of lime and soda ash was found a suitable method of treatment.

83. *Blackquarter*.—Broke out in the month of May resulting in a loss of two animals. The outbreak was brought under control by preventive inoculation.

84. *Ephemeral fever*.—Sixty-four cases of Ephemeral fever were recorded but there was no mortality. The majority of these cases occurred during the wet season.

85. *Contagious abortion*.—Three cows and two ewes which aborted were suspected for contagious abortion but the serological test conducted gave negative results.

86. *Coccidiosis*.—A few fatal cases of coccidiosis among calves and chickens occurred during the year.

87. *Johne's disease*.—Attempts at the eradication of Johne's disease were made during the year by testing all the cows and eliminating the affected ones. One hundred and ninety-four cows were thus tested and out of the 20 which gave a positive reaction to the test, 5 died, 12 were sold for slaughter, 2 were destroyed and the remaining one was sent to the Mysore Serum Institute for purposes of investigation. The disease was confirmed in each case on post-mortem examination.

88. *Ring-worm* in calves still continues to prevail. Forty-four cases were treated during the year. The practice of exposing the calves to sunlight seems to have reduced the incidence of the affection.

89. *Helminthiasis*.—A heavy mortality among sheep was traced to infection from *Hæmonchus Contortus* and *Oesophagostomum Columbianum* necessitating a monthly dosing of all sheep with copper sulphate and mustard.

(e) *Livestock Research Station, Guntur.*

90. This station is situated about five miles to the north of the Guntur Railway station and covers an area of about 230 acres. The area where the station is located is well suited for the Ongole breed and hence it has been proposed to have this as the main centre for the maintenance of a nucleus herd of the breed for supply of bulls for breeding purposes. The herd kept at this station consisted of 82 animals including 11 work cattle. There were 18 births (12 heifers and 6 bulls) during the year and 12 animals (9 bulls and 3 heifers) were received from an Agricultural Research Station, where they were kept temporarily. Five bulls and one heifer were sold for breeding purposes and one bull and five cows were sold in auction. One breeding bull was transferred to the Agricultural Research Station, Hagari (Bellary district), 7 animals died and one work animal was destroyed. One bull was transferred to work-cattle. There were thus 91 animals at the end of the year including 9 work-cattle.

91. *Buffaloes*.—A small herd of Murrah buffaloes and Murrah graded buffaloes is also maintained at this station. These animals will be transferred to the proposed buffalo breeding station at

Prattur (Guntur district) when it is opened. The herd consisted of 35 animals including two work-cattle. There were three births. Four bulls and six she-buffaloes were sold for breeding purposes, seven young bulls were received from the Livestock Research Station, Hosur. One bull, four she-buffaloes and two calves were transferred to Hagari Agricultural Research Station and three animals were written off owing to death or destruction. There were thus 25 animals at the end of the year.

(f) *Disposal of stock.*

92. The demand for breeding stock was good throughout the year, particularly for the Scindhi and Kangayam cows and heifers. Ninety-eight bulls including a few yearlings were issued for breeding purposes during the year. Eighty-two of these were sold, viz., 35 Kangayams, 20 Scindhis, 11 Hallikars, 6 Ongoles, 8 buffaloes and 2 cross-breds and the remaining 16 were transferred to Veterinary Institutions or Agricultural Institutions for maintenance at stud. Ten of these were Kangayams, one Scindhi, three cross-breds, one Ongole and a buffalo. The female stock sold for breeding purposes numbered 24 cows, 4 calves and 6 she-buffaloes. Four cross-bred cows with two calves and four she-buffaloes with two calves were transferred to other stations. Besides these, 21 work-cattle were supplied from the two farms to the Agricultural and Jail Departments.

(2) BREEDING BULLS.

(a) *Government bulls at stud in the districts.*

93. There are at present 23 Government bulls at stud in the districts, 1 in the Central Jail, Salem, and 22 in Veterinary Institutions including 7 in the Madras Veterinary College.

(b) *Premium bulls.*

94. This is a scheme intended to encourage the maintenance of stud bulls in the villages by local and corporate bodies and private individuals by the grant of premia for three successive years towards the cost of upkeep. A sum not exceeding Rs. 100 depending on the general condition of the bull and the number of services performed by it for the first year and a sum of Rs. 90 for each of the second and third years is paid to the owners of bulls included in this scheme. Prizes to the value of Rs. 10 are also given for the best bull and heifer calves sired by each bull during the second and third years. In this scheme, there were 175 bulls at the beginning of the year. One hundred and eighteen fresh bulls were admitted into the scheme and 75 were removed on account of death, completion of three years, or for other reasons, leaving 218 at the close of the year. The rules governing the grant of premia were revised during the year. Statements showing the number of approved bulls in each district, and the number of services performed by them is appended to this report as tables V-A and V-B.

(c) *Purchase of bulls from the Common Good Fund of Co-operative Societies.*

95. The following co-operative societies purchased breeding bulls from their common good funds and the number purchased or maintained is shown against each :—

	Bulls.
Madura-Ramnad Co-operative Bank .. .. .	1
Cattle Breeding Co-operative Society, Andipatti, Madura district.	2
Kamayyagoundanpatti Co-operative Society, Madura district.	1
Anchetti Cattle-Breeding Society, Salem district .. .. .	15
Tholasampatti Co-operative Society, Salem district .. .. .	1
Kadiampatti Co-operative Society, Salem district .. .. .	1
Sukkampatti Co-operative Society, Salem district .. .. .	1
Societies in the Coimbatore district .. .. .	15

Most of the above bulls are maintained in the Premium Scheme

(d) *Schemes worked by District Boards and Local Bodies.*

96. Particulars showing the number of bulls purchased by district boards with financial aid from Government and the number of services performed by these bulls are described below :—

*Coimbatore, district.*—There were 82 bulls maintained in this scheme at the beginning of the year. Thirty-five new bulls were purchased and included in the scheme and 45 removed from the scheme as they were either declared to be the property of the custodians after having fulfilled the conditions prescribed for the scheme or were sold or died. There were 72 bulls at the end of the year. The number of services performed by all the bulls during the year was 5,379. In the Milk-breed Scheme of the Coimbatore district, one out of the two bulls was transferred to the owner and only one now remains in the scheme.

*Trichinopoly district.*—There were six bulls at the beginning of the year, one was sold as it was not serving and the remaining five performed 336 services during the year.

*Chingleput district.*—There were only five bulls in this District Board Scheme. Of these, one died and the remaining four performed only 40 services.

*South Arcot district.*—This District Board purchased three stud bulls, two Kangayams and one Scindhi, towards the end of the year.

*Tanjore district.*—There were 46 bulls in the scheme of which 21 were transferred to the ownership of their custodians as the prescribed conditions had been fulfilled, two died and six others were withdrawn from the custodians for improper management, leaving a balance of 17 at the end of the year. The bulls performed 1,422 services during the year.

*Kurnool district.*—There were three Ongole bulls in the scheme of this district and they performed 229 services during the year.

97. Schemes have been formulated by the District Boards of East Godavari and Anantapur districts and they are under consideration. The scheme for the improvement of the cattle owned by the Sugalis of Panyam (Kurnool district) by maintaining stud bulls for their use commenced working on 19th September 1940. Three Kangayam bulls are maintained for this purpose at the cost of Government at Sugali metta near Panyam. The herd of cows owned by the Sugalis contains over a thousand animals, but as most of the cows were taken to another forest area for grazing in the month of February, the number of services was only 22. It is expected that when the cows return in the month of June 1941, the above figure will show a decided improvement.

### (3) CASTRATIONS.

98. The total number of castrations performed on bulls during the year as compared with those of the past two years was as follows:—

			NOS.
1938-39	..	..	93,400
1939-40	..	..	100,695
1940-41	..	..	107,827

### (4) BREEDING TRACTS AND BREEDERS.

99. According to the census enumerated in the year 1935, the cattle population of the Madras Province was 24·6 millions, and in this respect ranks third in India being exceeded only by the United Provinces and Bengal. A large proportion of the cattle, however, are of a poor type, though in some tracts a very good type of animal is bred. Of the various breeds of cattle met with, the more important are the Ongole, Hallikar (Mysore) and the Kangayam. These three breeds are bred by ryots and by professional breeders in areas which by long experience and tradition have been considered to be most suitable. The breeding of cattle has in recent years suffered a check owing to the progressive reduction in the supply of fodder consequent on the replacement of cereal crops by other commercial crops, e.g., cotton, tobacco, chillies, turmeric, etc., which yield no fodder. The decrease in the total cultivated area during the quinquennium ended in 1935 is estimated at 0·8 million acres. The quality of cattle has also suffered owing to a great dearth of good bulls in the breeding tracts. According to a survey conducted by the Madras Agricultural Department in the year 1935, the proportion of breeding bulls to the number of cows in the Nellore and Guntur districts (both forming the Ongole breeding area) was 1 : 231 and 1 : 122 respectively while the proportion for the whole Province was 1 : 20 cows. Vigorous attempts are now being made to augment the supply of breeding bulls for these areas by encouraging the maintenance of bulls in the breeding tracts with financial aid from

Government. To this end, schemes have been drawn up and submitted to Government for scrutiny by the Provincial Livestock Improvement Board. The bill to enforce compulsory castration of bulls not suitable for breeding purposes was passed by Government during the year as the Livestock Improvement Act, 1940.

#### (5) CATTLE SHOWS, EXHIBITIONS, FAIRS AND MARKETS.

100. In order to encourage breeders in the production of good type of cattle, the practice of giving grants towards the cost of prizes to owners of winning animals at cattle shows held during certain cattle fairs has been in vogue. The more important of these shows are held at Tiruppur for the Kangayam cattle, at Ongole for the Ongole cattle, at Valparai for the Scindhis and at Anchetti for the Hallikars.

101. *The Tiruppur Cattle and Pony Show.*—This show organized by the Coimbatore District Agricultural Association is one of the most important in the Presidency. It was held from 24th to 26th May 1940, on the occasion of the local cattle fair and car festival. The show was presided over by the Pattagar of Palayakottai and the exhibits were judged by a committee which included the Livestock Development Officer. The number and quality of cattle exhibited, which consisted of the Kangayam breed, were very satisfactory. A grant of Rs. 100 was sanctioned by Government for payment to the Coimbatore District Agricultural Association towards the cost of prizes. The Association has since decided to hold the show every year instead of biennially as in the past. Certain suggestions for the improvement of the show are also under consideration.

102. *The Valparai Cattle Show.*—The cattle show organized by the Anamalai Hills Cattle Society was held at Valparai on 14th December 1940. Though it is only nine years since the show was organized, it has become very popular. Several estates as well as the labourers employed in them take part in the exhibition. The animals exhibited are pure-bred Scindhis and Scindhi graded cattle. The number of animals entered for the show held during the year was bulls 35, bullocks 26, cows 208, yearling calves 119—total 388, against 274 in the previous year. A grant of Rs. 100 was sanctioned by Government towards cost of prizes at the show. A suggestion to register some of the pure-bred Scindhj cattle in the area in the Central Herd Book is under consideration.

103. *Cattle Fair and Show at Anchetti.*—The third annual cattle fair and show organized by the Anchetti Co-operative Cattle-Breeding and Marketing Society was held for three days from 24th to 26th February 1941 inclusive. This is the only occasion when a cattle-show is held in this Province exclusively for the Hallikar breed of cattle. The entries for the show numbered 130 as against 190 in the previous show, but the quality of the animals competing for the prizes showed an improvement over that of the previous year. A grant of Rs. 100 was given by Government towards the expenses of the show.



104. *Cattle shows at other places.*—The cattle show at Ongole was not held during the year. Smaller shows were held at Nira-thanallur (Tanjore district) and Mahanandi (Kurnool district) and grants of Rs. 25 and Rs. 50 respectively were paid towards the cost of prizes.

105. *Cattle markets.*—A system of publishing the prices of fodder and cattle at the weekly markets in seven representative centres in the Province in the *Fort St. George Gazette* has been adopted by the Director of Industries and Commerce and for this purpose arrangements for sending the necessary returns by the Veterinary Assistant Surgeons in charge of the Veterinary Institutions at the respective centres have been made. Further attempts to organize periodical fairs and markets in suitable places where they are not now held are also being made.

## (6) DAIRYING.

### (a) Government Dairy Farms.

#### (i) Hosur.

106. The Dairy herd of this farm consisted on the average of 196.2 cows with 120.0 in milk as compared with 223.5 and 143.3 respectively in the previous year. The figures for the total and daily yields of milk recorded during the year as compared to similar figures for the previous year are shown below:—

	Total yield for the year.	Daily average.	
		Per cow in milk.	For the whole herd.
		LBS.	LBS.
1939-40 ..	461,079	8.8	5.7
1940-41 ..	393,867	9.0	5.5

107. Particulars of each breed are furnished below:—

The kangayam herd contained 102.4 cows on the average of which 61.4 were in milk. They yielded 152,419 lbs. of milk giving an average of 6.8 lbs. per cow in milk and 4.1 lbs. for the whole herd. The corresponding figures for the previous year were 179,616.5 lbs., 6.7 lbs. and 3.8 lbs. respectively. Of the cows that went dry during the year, two cows gave over 4,000 lbs. of milk, four gave over 3,000 lbs. and six gave over 2,500 lbs. Some of the best yielders and their yields were—

- (1) Cow No. 206—4,188 lbs. in a period of 299 days with an average daily yield of 14 lbs.
- (2) Cow No. 164—4,135 lbs. in a period of 304 days with a daily average of 13.6 lbs.
- (3) Cow No. 209—3,541.5 lbs. in a period of 304 days with a daily average of 11.7 lbs.

The Kangayam is essentially a draught breed and is in great demand for working purposes in the Southern districts of the Province. The cows are poor milkers and attempts

are now being made to improve their milking qualities without impairing the draught qualities of the bulls, by mating good milking cows with bulls of good milking strain. The progeny of such matings are not yet in milk, and hence the results of the efforts are not yet known.

*Scindhi herd.*—This herd consisted of 61.4 cows on the average of which 37.1 were in milk. They yielded 197,028.5 lbs. of milk with a daily average of 14.6 lbs. per cow in milk and 8.8 lbs. for the whole herd, the corresponding figures for the previous year being 207,500.5 lbs., 12.8 lbs. and 8.2 lbs. respectively. The increase in the daily average for cows in milk of 1.8 lbs. is considered to be due partly to the practice of prenatal handling of the heifers and cows which has been adopted as an experimental measure. Of the cows which completed their lactation during the year, the following outstanding performances are worthy of mention :—

Cow No. 143, a first calver, yielded 10,081 lbs. of milk in 373 days and was still giving 20 lbs. per day when she was dried to give her some rest before the next calving. Her daily average yield came to 27 lbs. This performance appears to be a new record for the Scindhi herd in South India. Sind cow No. 132 which yielded 7,824 lbs. in her first lactation calved again and yielded 8,184 lbs. up to 31st March 1941 in 230 days with a daily average of 35.6 lbs. and was then giving 30 lbs. a day. She is expected to yield over 10,000 lbs. in this lactation. Another cow (No. 118) has given 7,744 lbs. in 329 days with a daily average of 23.5 lbs. and is still yielding 14½ lbs. a day.

Of the cows which completed their lactation during the year, 16 yielded over 5,000 lbs. of milk.

*Milk yields.*—The yields of 15 of the best Sind cows are tabulated below :—

Breeding bulls used.	Cow number.	Daughter.		Cow number.	Daughter's Dam.	
		Yield.	Daily average.		Best Yield.	Daily average.
		LBS.	LBS.		LBS.	LBS.
No. 8 ..	110	5,118	14.3	44	3,244	13.7
	114	5,782	15.3	8	4,785	14.5
	122	5,283	15.7	68	5,552	14.4
	124	7,509	17.0	24	4,767	12.6
No. 129 ..	128	5,139	13.4	191	3,919	10.9
	40	7,151	16.4	160	5,050	14.1
	43	7,226	18.4	159	3,393	12.2
No. 136 ..	49	5,424	15.4	230	5,081	18.0
	46	5,043	15.9	180	4,294	16.2
No. 38 ..	78	6,661	18.0	31	3,282	11.2
	134	5,241	13.6	33	6,695	17.0
No. 93 ..	155	5,313	14.2	47	3,765	11.1
	157	5,764	17.1	91	159	2.1
No. 56 ..	140	5,136	12.7	60	4,358	12.3
	143	10,081	27.0	12	6,101	15.6
	146	5,044	15.2	8	4,785	14.5

*Cross-bred herd.*—A small herd consisting of graded scindhi cows with a very small proportion of foreign blood in them is being maintained at the dairy attached to the Agricultural College, Coimbatore for the supply of milk. These are all progeny of cross-bred cows and a Sind bull maintained at the Agricultural College. The heifers are sent to the Livestock Research Station, Hosur, for rearing and the bulls are reared for use later for work.

Many of the animals in the herd resemble pure Scindhis and the best bulls from the herd are issued for stud purposes.

*Hallikar herd.*—This is purely a draught breed and the bulls are sold for breeding purposes chiefly in the North Salem and Chittoor districts. There were on an average 31.3 cows in this herd of which 20.6 were in milk. They yielded 38,618.5 lbs. of milk in the year 1940-41 as compared with 50,375 lbs. yielded by 20.7 cows during the previous year. The figures for daily average yields were 5.2 lbs. per cow in milk and 3.4 lbs. for the whole herd as compared with 6.7 lbs. and 4.4 lbs. respectively in the previous year. The highest yield was 2,814.5 lbs. in 306 days given by cow No. 14 with a daily average of 9.2 lbs. Six other cows yielded above 2,500 lbs. of milk in the lactation period completed during the year.

(ii) Guntur.

108. The Ongole breed may be described as the dual purpose breed of this Province and is one of the breeds selected for registration in the Central Herd Book. There were on the average 10.2 cows in milk during the year and they yielded 11.3 lbs. of milk per cow per day as against 10.9 lbs. in the previous year. Among the cows which completed their lactations during the year the best yielder was cow No. 229 which gave 4,902 lbs. in 283 days with a daily average of 17.3 lbs. Three others yielded over 4,000 lbs. each.

109. The average number of milking buffaloes at the Dairy Farm was 7.8. These yielded on an average 11.2 lbs. of milk per day per buffalo as against 15.2 in the previous year. The fall is due to two she-buffaloes having still born calves and the inclusion in the herd of first calvers whose yields were not high. The best milker yielded 8,082 lbs. in 418 days and two others yielded over 5,500 lbs.

(b) *Private dairies.*

110. State aid was given by way of a loan to the Vaniankulam Estate Dairy, Melacheval, Tinnevely district. There are also other private dairy farms in this Presidency such as the Private Dairies at Kurnool and Nandyal, the Pollapalli Veerabrahman Dairy Farm at Proddatur, the Sree Rama Dairy Farm at Cud-dapah, the French Dairy and Cattle Farm at Calicut and Chattamangalam, etc. Milk Supply Co-operative Societies have been

organized in several towns in the Province such as Cuddapah, Proddatur, Kurnool, Bellary, Nandyal, Nellore, Irritty in Malabar and Madras. These purchase milk from cow and buffalo owners who are members of the societies and sell the pooled milk to consumers. Some of these including the one in the City of Madras also supply milk to Government hospitals on contract.

(c) *Inspection of dairy animals.*

(i) City of Madras.

111. The milk cows that are brought to the Government hospitals in the City for supplying milk are periodically inspected by a Veterinary Assistant Surgeon and the owners are advised about animal husbandry matters and the hygienic production of milk.

(ii) Districts.

112. The dairies and the cattle owned by the societies were periodically inspected by Veterinary Assistant Surgeons of this department. In addition, the Vaniankulam Estate Dairy, Melacheval, Tinnevely district, was inspected by the Livestock Development Officer and the District Veterinary Officer, Madura. The herd of cattle maintained by the owner as well as the registers, buildings, etc., were inspected and advice for the improvement of the dairy given. The French Dairy and Cattle Farm at Calicut and Chattamangalam were inspected by the Livestock Development Officer.

(7) GRAZING AND FODDER.

113. The sixth and seventh meetings of the Provincial Standing Fodder and Grazing Committee were held during the year under report and various problems arising in connexion with provision of fodder were discussed. The meetings were attended by me and the Livestock Development Officer.

An application from the City Co-operative Milk Supply Company for a grant towards the cost of a scheme for maintenance in a forest grazing area of dry cows and buffaloes collected from the City of Madras has been recommended to Government. A private concern registered as 'Gorakshanai,' Ltd., Madras, has obtained from the Forest department an extensive grazing area on lease for the purpose of maintaining milking cows and buffaloes from the City's dairying trade during their dry period on payment of a monthly fee. The results of the working of these schemes and the effects of the reduction in the cost of transport of cattle by rail out of the City are being watched.

(8) CATTLE PENTAS.

114. Cattle were allowed to graze in the Nallamalai Hills as in previous years. Two Veterinary Assistant Surgeons were placed on special duty to inoculate all the unprotected cattle resorting to the Nallamalais for grazing and to improve the conditions under which the cattle exist in this area.

With a view to solve the problem of the control of the spread of Rinderpest in the Nallamalais through the migrating herds of cattle, the Government have, in their Order No. 668, Development, dated 2nd April 1941, approved my proposals in this regard and this scheme will be brought into operation during 1941-42.

A scheme for the maintenance of breeding bulls at the cost of Government in the grazing area of the Nallamalais has been temporarily withheld under orders of Government.

#### (9) HORSE-BREEDING.

115. Attempts towards improvement of ponies and horses of this Province by the use of approved stallions were confined to the Coimbatore district where the district board maintained four stallions at stud. A grant of Rs. 300 was being paid annually by Government towards the cost of maintenance of one of them. As the results of these efforts were not commensurate with the expenses involved, the district board decided to discontinue the maintenance of the stallions.

#### (10) SHEEP.

116. According to the census held in January 1940, the number of sheep in the Madras Presidency is about 14,500,000 and these are distributed in the rural and urban areas as shown below:—

Rural areas .. .. .	13,650,000
Urban areas .. .. .	850,000

It is estimated that about 75 per cent of these are of the short hairy type, the main colour being red. These are found distributed throughout the Presidency but are in a greater concentration in the districts south of Madras, their chief breeding centres being in the Ramnad and Tinnevely districts. They are a light type of sheep with flat sides, short limbs, long ears and a narrow face. The ewes lamb once a year. This type of sheep is never shorn, but their hair is exported as a by-product of tanneries, the chief buyer being the United States of America.

Other types found in the Province are the Nellore sheep, the Bellary sheep, the Coimbatore sheep and the woolly sheep of the Nilgiris. The Nellore sheep are a hairy variety, large in size and mostly white in colour. A few animals with a light red or fawn colour with or without white or black markings on the back and thighs are also met with. This type is looked upon as a good producer of mutton. The ewes are stated to lamb once every nine months.

The Bellary sheep are a mixed woolly breed, the predominant colour being black.

The wool of this type is coarse and straight and the yield is from 1½ to 2 lbs. for two clippings per year. About 50 per cent of the total produce is used locally for the manufacture of blankets and the rest is sold to other districts. This type is distributed in

the dry upland tract constituting the districts of Bellary, Kurnool and other districts adjoining the eastern border of the Mysore State.

The Coimbatore sheep resemble the Bellary sheep in respect of type and colour of wool. They fatten well on good feeding and are reared in the upland areas of the Coimbatore district for their manure, mutton and wool. The quality and yield of wool is the same as that of the Bellary sheep and the produce is almost all consumed locally for the manufacture of blankets.

The Nilgiris type of sheep is the best of the woolly sheep in the Province. These animals which are found only in the Nilgiris were evolved as a result of grading local sheep with imported ones from England and are a fairly fixed type. They yield a fine white crimply wool, 3 to 4 inches long, but the sheep are not shorn. The number of these sheep is, however, very small, about 2,000.

The experimental scheme to explore the possibilities of evolving a woolly breed of white sheep by crossing the local Bellary ewes with Bikanir rams which commenced working at the Hosur Farm in the year 1939-40 was continued in the year under report.

#### (11) POULTRY.

117. Flocks of imported breeds of White Leghorns, Rhode Island Reds, Light Sussex and Black Minorcas together with the indigenous breed of Chittagongs are maintained at the Livestock Research Station, Hosur, for supply of cockerels and hatching eggs to the districts, for breeding purposes. There were 292 birds on the farm at the beginning of the year, two cockerels of imported breeds and six country hens (for setting purposes) were purchased. Eight hundred and fifty-six chickens were hatched. Five hundred and six birds were sold, 45 birds were transferred to Veterinary institutions and 183 died leaving 422 in all at the close of the year. There were on an average 65 laying hens and they yielded 11,049 eggs with an average of 169.9 eggs per bird. Among the best layers were 10 White Leghorn pullets which laid on an average 187 eggs each and 14 Rhode Island Reds which laid 186 each. One White Leghorn pullet laid 247 eggs and a Rhode Island pullet laid 230. Two thousand three hundred and sixty-five eggs were sold for hatching, 1,263 were set in the farm incubators excluding 50 set in March 1940, and 856 chicks were hatched out. The percentage of hatch was 64.7 as compared with 56 in the previous year. There was a high mortality among the chickens on this farm during the year due to attacks of coccidiosis, fowl-pox and other causes. Two pens of Rhode Island Reds were maintained at the Livestock Research Station, Guntur, for supply of eggs and birds in the area. The pens of indigenous birds maintained at the Agricultural Research Station, Kalahasti, contained 74 birds of the Vizagapatam and local strains. The experiments to evolve

a strain of country birds which will lay more eggs of a larger size and show an increased body weight and less broodiness were continued. The average laying capacity of hens at this farm showed an increase from 102 to 112 in the Vizagapatam flock and from 84 to 106 in the Kalahasti flock. There is also an increase in the average size of the egg. The Poultry Demonstrator in charge of the farm toured for 150 days and delivered a series of lectures to the students of the Agricultural College and supervised the erection of poultry demonstration units installed at the Veterinary institutions at Vizagapatam, Rajahmundry, Bellary, Trichinopoly, Madura and Tinnevely. The six poultry units mentioned above were installed during the year as a means of ocular demonstration to the ryots in the breeding of poultry. The progress of the work of these units is being watched.

118. *Poultry breeding in the districts.*—The position with regard to poultry breeding in this Province cannot be considered satisfactory. Though the number of birds in the Province is estimated at 66.1 lakhs, only about 15,000 pullets and hens are of the improved breed. The province imports about 165 lakhs of eggs from the adjoining States of Cochin and Travancore annually. From a random sampling, it has been computed that 15 indigenous hens are kept per hundred persons in the Presidency. A scheme for improvement of poultry farming in certain areas of the North Arcot district by supplying eggs and cockerels of pure-imported breeds to villagers at concessional rates have been sanctioned by Government. The scheme is to be worked by the American Arcot Mission, Katpadi, with financial aid from Government. A similar scheme for the Salem district to be worked by a co-operative society organized for the purpose has also been sanctioned by Government.

119. *Private poultry farms.*—Besides the large poultry farm maintained at Katpadi by the American Arcot Mission, there are poultry farms at Pattukkottai, Manapparai and Trichinopoly. The Madura-Ramnad Co-operative Bank is maintaining imported poultry in two villages and the District Board, Ramnad, is maintaining imported birds in their industrial school at Sivaganga. There are also poultry farms at Pendyala in the Kistna district and in Kurnool town. The breeding of poultry is encouraged by granting prizes in the form of cockerels of imported breeds to owners of the best calves born to bulls in the premium scheme, by the sale of setting eggs at concessional rates to poultry farming and egg production co-operative societies and by grants towards cost of prizes awarded at poultry shows and exhibitions. Marketing centres for eggs are being organized on co-operative lines so as to help villages in developing poultry farming as a cottage industry. The grant of Rs. 100 sanctioned by Government towards the expenses of the Madras Poultry Exhibition (All-India Show) held on 2nd March 1940 was paid during the year under report.

## (12) TRADE IN LIVESTOCK AND LIVESTOCK PRODUCTS.

(a) *Internal.*

120. Many of the districts of this Province are not self-contained in the matter of supply of work-cattle. The breeding tracts of the Nellore and Guntur districts supply yearling bulls of the Ongole breed to ryots in the Kurnool, Cuddapah and parts of Bellary districts for rearing and use as work-cattle later, cows of the Ongole breed are sold to professional milkmen in Madras and other towns. The number of Ongole milking cows brought to the cattle market at Tiruvottiyur for sale in the City during the year was 5,030. Milking she-buffaloes from the Northern districts are also brought to Madras for sale. The number of animals thus brought during the year was 6,148. She-buffaloes of North Indian breeds are also in demand for the dairying trade. One hundred and ninety-five she-buffaloes were brought to Madras from this part of India during the year. Some young Ongole bulls are sold from the Godavari districts to the Vizagapatam district and brought back as adults for work. The breeding tracts of Mysore and North Salem form the main sources of supply of work-cattle to the Southern districts and Chittoor, Anantapur and North Arcot districts. Young cattle from the Coimbatore district are taken for work in the Madura, Ramnad, Tinnevely, Malabar and North Arcot and South Arcot districts.

The trade in cattle between this Province and adjoining Provinces and States is carried on mainly by means other than rail and accurate statistics are not available. The survey conducted by the Agricultural Department in the year 1935, however, reveals that the figure for import into the Province is about 80,000 in a year. To this figure, Mysore contributes 57,000, Bengal 10,000 (mostly buffaloes), Hyderabad 7,000 (mostly buffaloes), Central Provinces 5,000 (mostly buffaloes) and Bombay 1,000.

(b) *Foreign.*

121. The trade in the importation of cattle from foreign countries by sea to this Province may be said to be non-existent but a small export trade is carried on with Ceylon and Federated Malay States. The trade in the exportation of the by-products of cattle such as hides, skins (raw and tanned), bones, fleshings, wool, ghee, etc., to other countries is, however, extensive.

122. During the year under report, 326 horses were imported into this Presidency as shown below:—

Country from which imported.	Number of horses landed.
United Kingdom	15
Australia	121
Veraval	164
Rangoon	8
Bombay Presidency	18
Total	326



## V. VETERINARY INSTITUTIONS.

123. The total number of Veterinary institutions at the end of the year under report inclusive of those attached to the Madras Veterinary College, Agricultural College, Coimbatore, and the Cattle Farm at Hosur, but excluding the Private Veterinary Institutions at Vizianagram, Pithapuram, Sivaganga and Dharmathupatti (Kannivadi Zamindari) was 119 as against 118 in the previous year. A Veterinary Dispensary at Manapparai in the Trichinopoly district was newly opened during the year. In addition, a Camp Veterinary Dispensary at Gudalur in charge of the Touring Veterinary Assistant Surgeon at the place was also opened on 1st May 1940.

124. The total number of in- and out-patients treated in the several Veterinary Institutions in the Presidency during the year under report increased from 288,220 to 296,729. The number of cases supplied with medicine but not brought to the institutions was 4,945 as against 3,291 of the previous year.

125. The leading institutions in the Presidency with the number of cases treated in each are as follows :—

Name of institution.	Number of cases treated.
Madras Veterinary College Hospital .. ..	10,399
Veterinary Hospital, Coimbatore .. ..	7,658
Do. Trichinopoly .. ..	5,408
Do. Saidapet .. ..	4,853
Do. Madanapalle .. ..	4,851
Veterinary Dispensary, Madura City .. ..	4,808
Do. Hospital, Salem .. ..	4,369
Do. do. Conjeeveram .. ..	4,257
Do. Dispensary, Rayapuram .. ..	4,111
Do. Hospital, Rajahmundry .. ..	4,031
Do. do. Palghat .. ..	4,020
Do. Dispensary, Chidambaram .. ..	3,942
Do. Hospital, Guntur .. ..	3,765

126. Sanction was accorded by Government during the year for the employment of a temporary compounder for a period of two years for the Camp Veterinary Dispensary at Gudalur.

## VI. ITINERATING STAFF.

127. Four new touring billets were opened during the year under report at Ramachandrapuram (East Godavari district), Kavali (Nellore district), Krishnagiri (Salem district) and Dindigul (Madura district), the total number of touring posts at the end of the year being 152 as against 148 in the previous year.

128. The number of cases treated by the itinerating staff during the year was 151,721 (41,678 contagious and 110,043 non-contagious) as against 152,450 (39,109 contagious and 113,341 non-contagious) cases in the previous year.

## VII. DISEASES AMONG LIVESTOCK.

## (I) GENERAL.

## (a) Disease position.

129. The disease position was less satisfactory this year than in the previous year, the total number of outbreaks received being 5,916 as against 4,943 in the previous year.

Rinderpest prevailed in all the districts except in the districts of Madura, Ramnad, Tinnevely and the Nilgiris. The disease was severe in South Arcot, moderately severe in Anantapur, North Arcot, Kurnool and Kistna and mild in the other districts.

Hæmorrhagic Septicæmia appeared in all the districts. The districts of Tanjore, Nellore, Kistna, Malabar and Vizagapatam recorded the largest number of outbreaks.

Blackquarter prevailed in all the districts except West Godavari, Guntur, Tinnevely, the Nilgiris, South Kanara and the City of Madras.

Anthrax was reported from all the districts. Salem and Nellore districts reported the largest number of outbreaks.

Foot and Mouth Disease was reported from all over the Presidency. The districts of Vizagapatam and Godavari East were the worst affected.

## (b) Reporting of outbreaks.

130. The revised system of registering and reporting of outbreaks of contagious diseases ordered to be continued till 31st March 1942 in G.O. No. 1107, Development, dated 13th May 1940, is under trial and the results are being watched. Inaccuracies in registering deaths from various contagious diseases still continue to exist.

131. The mortality figures under the chief fatal cattle diseases as reported by the Collectors of the districts and by the district staff of this department are furnished below:—

	Rinder- pest.	Hæmorr- hagic septi- cæmia.	Black- quarter.	Anthrax.	Foot and mouth.	Total.
By Collectors . . . . .	17,858	4,938	4,688	3,323	1,193	32,000
By the District Veteri- nary officers . . . . .	13,849	5,748	4,682	3,165	468	27,912

The discrepancies are mainly due to wrong classification which are being pointed out to the Revenue Department as they occur and attempts are being made to reconcile them. With the expansion of the staff in the department which will facilitate frequent check over the mortality registers maintained by the Village Revenue staff, it is hoped that the position will improve.

## (c) Mortality.

132. The total mortality from Rinderpest, Hæmorrhagic Septicæmia, Anthrax and Blackquarter was 30,807. The mortality per outbreak from the abovementioned four diseases averages 6.6 as against 6.2 in the previous year. The incidence of and mortality from these diseases for the last three years have been as follows:—

Year.	Rinderpest.		Hæmorrhagic Septicæmia.		Blackquarter.		Anthrax.		Total.	
	Incl. dence.	Morta- lity	Incl. dence.	Morta- lity.	Incl. dence.	Morta- lity.	Incl. dence.	Morta- lity.	Incl. dence.	Morta- lity.
1938-39 ..	1,058	9,986	1,206	6,012	1,897	9,905	432	3,148	4,593	29,051
1939-40 ..	1,516	13,270	1,095	4,511	1,084	4,630	431	3,235	4,126	25,646
1940-41 ..	2,027	17,858	1,172	4,938	985	4,688	487	3,323	4,671	30,807
Total ..	4,601	41,114	3,473	15,461	3,966	19,223	1,350	9,706	13,390	85,504

Against Foot-and-mouth Disease, 1,193 deaths have been recorded as compared with 1,055 deaths in the previous year. Besides these, 11,192 deaths have been recorded among all species of animals wherein the nature of the disease remained in most cases undiagnosed for want of sick animals at the time of the visit by the staff.

## (2) CATTLE.

## Contagious diseases.

## (i) Rinderpest.

133. There was a rise in the incidence of and mortality from this disease. The total loss sustained was 17,858 bovines in 2,027 outbreaks as against 13,270 deaths in 1,490 outbreaks in the previous year. The disease prevailed all over the Province except in the Southern districts, viz., Madura, Ramnad, Tinnevely and the Nilgiris. The districts that suffered most were North Arcot, Kurnool and Kistna.

The number of animals protected by the various methods and the mortality after protection are as follows:—

Methods.	In outbreaks.		In clean areas.		Total.	
	Number in- oculated.	Mortality among in- oculated.	Number in- oculated.	Mortality among in- oculated.	Number in- oculated.	Mortality among in- oculated.
Cattle—						
Serum alone	639	..	6	..	645	..
Serum Simultaneous with Goat Virus ..	3,30,243	131	78,459	21	4,08,702	152
Goat Spleen Tissue Glycerinated Vac- cine ..	2,715	11	8,123	..	10,838	11
Goat Spleen Tissue piece in Saline ..	242	6	173	..	415	6
Goat Spleen Tissue Desiccated vaccine.	2,679	18	..	..	2,679	18
Goat Virus alone ..	..	..	301	..	301	..
Total ..	3,36,518	166	87,062	21	4,23,580	187
Sheep and goats—						
Serum Simultaneous with Goat virus ..	10,483	..	344	..	10,827	..
Serum alone ..	319	..	17	..	336	..
Total ..	10,802	..	361	..	11,163	..

The mortality given above was chiefly due to the animals incubating the disease at the time of injection.

(ii) Hæmorrhagic Septicæmia.

134. One thousand one hundred and seventy-two reports with a mortality of 4,938 animals have been recorded as against 4,511 deaths in 1,095 outbreaks in the previous year. The disease was reported from all the districts. The districts of Nellore, Kistna, Tanjore, Malabar and Vizagapatam suffered most. One hundred and fifty-five thousand five hundred and thirty-six cattle were protected against the disease.

(iii) Blackquarter.

135. During the year 985 reports were received under this disease. The total mortality reported was 4,688. The figures for the previous year were 4,630 deaths in 1,084 outbreaks. The districts of Salem, Chittoor, Bellary and Coimbatore reported the largest number of outbreaks. The mortality caused in these four districts alone was 2,078.

The various immunising methods adopted were as follows:—

	In affected areas.	In clean areas.	Total.
<b>Vaccine alone method—</b>			
Cattle .. .. .	1,03,090	7,117	1,10,207
Buffaloes .. .. .	5,363	280	5,643
Sheep and goats .. .. .	..	..	..
	<hr/>	<hr/>	<hr/>
	1,08,453	7,397	1,15,850
<b>Serum alone method—</b>			
Cattle .. .. .	5,041	42	5,083
Buffaloes .. .. .	387	..	387
Sheep and goats .. .. .	..	..	..
	<hr/>	<hr/>	<hr/>
	5,428	42	5,470

(iv) Anthrax.

136. There was a rise both in the incidence of and the mortality from this disease. The total number of reports received was 487 as against 416 in the previous year. The mortality recorded was 2,649 cattle and 674 sheep and goats as against 2,659 cattle and 576 sheep and goats in the previous year. The disease was reported from all the districts. The incidence was, however, mild except in the Nellore and Salem districts. Six thousand seven hundred and sixty-six bovines and 4,984 sheep were protected against the disease in 88 villages in 17 districts.

(v) Foot-and-mouth Disease.

137. Eight hundred and seventy-five reports were received during the year as against 570 reports received during the previous year. The total mortality reported was 924 cattle and buffaloes and 269 sheep and goats as against 976 cattle and buffaloes and 79 sheep and goats during the previous year.

## (vi) Surra (Trypanosomiasis in cattle).

138. One hundred and eleven outbreaks with 281 deaths were reported during the year as against 35 outbreaks with 312 deaths in the previous year. From North Arcot and Tanjore districts the largest number of reports were received.

## (3) SHEEP AND GOATS.

139. The system of reporting outbreaks of sheep and goats which has been in vogue for the last four years showed signs of gradual improvement. During the year, the incidence of the following diseases among sheep and goats were reported:—

Rinderpest from 10 villages, Anthrax from 28 villages, sheep-pox from 41 villages, contagious pleuro-pneumonia in goats from 47 villages, circling disease in sheep from five villages and foot-and-mouth disease from four villages.

140. The number of animals protected against the different diseases was as follows:—

Rinderpest	..	..	..	..	11,63
Anthrax	..	..	..	..	4,984
Hæmorrhagic Septicæmia			..	..	Nil.
Blackquarter	..	..	..	..	Nil.
Sheep-pox	..	..	..	..	1,369
Contagious Pleuro-Pneumonia in goats			..	..	2,598

## (4) OTHER ANIMALS.

141. Thirty-six outbreaks of equine surra with 70 attacks and 19 deaths have been recorded.

Four cases of strangles were reported.

*Rabies.*

142. Sections of brains from 100 animals suspected for the disease were sent for examination to the Pasteur Institute, Coonoor, and 72 of them were confirmed for rabies.

## (5) POULTRY.

143. *Fowl Cholera*.—Eight hundred and fifty-three birds were protected against this disease. Of these, 392 were done by the vaccine alone method, one by the serum alone method and 460 by the sero-vaccination method.

144. *Fowl-pox*.—Protection was afforded in nine districts to 1,028 birds.

145. *Pseudo-fowl pest*.—The incidence of this disease was reported from the districts of Kurnool and Bellary.

## VIII. INVESTIGATION AND RESEARCH.

## (1) MADRAS VETERINARY COLLEGE LABORATORY.

146. *Pathology section*.—Work has been taken on hand

(i) to investigate the incidence and etiology of so-called actinomycotic granulomata of animals in the Presidency; and

(ii) to type the strain of tuberculosis bacillus responsible for cases of the disease in the livestock of this Presidency.

The work has not yet reached the stage when any conclusions can be drawn.

147. *Parasitology section*.—Attempts to culture *Rhinosporidium* from human origin were continued during the year but so far the results have not been encouraging.

## (2) SERUM INSTITUTE.

148. *Protozoan complications in virus calves*.—The table below gives an idea of the extent of Protozoan complications in virus calves during the years 1939-40 and 1940-41 :—

Year.	Number of calves used.	Number of calves infected with			
		Trypanosomes.	Piroplasms.	Microfilaria.	Spirochetes.
1939-40 ..	363	..	..	5 (1·4 per cent).	4 (1·1 per cent).
1940-41 ..	205	2 (·97 per cent).	..	1 (·48 per cent).	..

149. *Hæmorrhagic Septicæmia Vaccine*.—A method was arrived at for fixing an average lethal dose of virulent *Pasteurella Boviseptica* organisms. It consisted in preparing a saline suspension of a 24 hours old blood agar culture of the bacilli and standardizing it to Brown's opacity tube No. 1. Graduated doses of this suspension were given to susceptible buffalo calves and the minimum amount that proved lethal was considered an average lethal dose. The dose which was arrived at on the first occasion continued to yield satisfactory results.

Throat swabs were taken from nine healthy buffalo calves stationed in the institute and a cultural study made to determine whether the bacilli of pasteurellosis live as harmless saprophytes in the upper air passages. The work continued to be in progress.

150. *Blackquarter*.—Work has been started and is in progress to study the types of organisms responsible for blackquarter outbreaks in the Province.

## (3) DISTRICT STAFF—ENDEMIC FLUOROSIS.

151. Administration of sterilized bone-meal in the food has been tried in cases of fluorosis or Rheumatic Arthritis in the districts of Nellore, Cuddapah and Kurnool with very encouraging

results. The product was administered in the food at the rate of two ounces per day for a period of three months. It is reported to improve the condition of the animals and give very beneficial results especially when it is tried in the early stages of the disease.

152. *Anti-rinderpest serum—Reduced dose.*—Serum simultaneous inoculations against rinderpest with goat virus and reduced doses of 2 c.c. of serum per 100 lb. body weight for cattle with a minimum of 5 c.c. and a maximum of 15 c.c. and 5 c.c. per 100 lb. body weight for buffaloes with a minimum of 10 c.c. and a maximum of 25 c.c. was tried and the reactions were reported to be mild.

153. Desiccated goat spleen tissue was tried in the field during the year and on account of the severe reactions it caused, it has since been given up.

#### (4) LIVESTOCK RESEARCH STATIONS.

154. *Shark-liver oil.*—Experiments are being conducted at the Livestock Research Station, Hosur, with a view to determine the value of shark-liver oil in the feeding of calves, lambs and chickens. For this purpose a preparation containing shark-liver oil issued by the Department of Industries, Madras, and reported to contain 1,500 I.U. of Vitamin A per gramme, which is more than twice that of several brands of imported cod-liver oil is used. Six calves, 6 lambs and 12 chickens with an equal number of controls in each class are being fed daily with the oil and their weights recorded periodically. The experiment is still in progress.

155. *Hormone treatment.*—Undue delay in the appearance of oestrus after calving was noticed in 14 cows. Urine Hormone was tried on all of them. Eleven of them responded to the treatment soon and three of them did not.

156. *Milk yield experiments.*—The experiments in the massaging of the udders of heifers and cows before and after calving initiated at the instance of the Imperial Council of Agricultural Research were continued at the Livestock Research Station, Hosur, during the year under report. Twenty-two Scindhi cows were subjected to the treatment and they showed an increase in their milk-yield over cows which were not so treated.

#### (5) IMPERIAL COUNCIL OF AGRICULTURAL RESEARCH SCHEMES (IN BRIEF).

157. The following schemes are being worked under the control of this department and the progress during the year is given in Chapter X :—

- (1) Veterinary Investigation scheme.
- (2) Scheme for an enquiry into Helminthiasis of cattle in the Madras Presidency.
- (3) Sheep-breeding scheme.

- (4) Milk Recording scheme (temporarily suspended).
- (5) The scheme for an investigation into indigenous drugs used in veterinary practice with special reference to their toxicology is being worked under the control of the Medical department.
- (6) Scheme for an investigation into the diseases of poultry.
- (7) *Contagious abortion*.—During the year under report, Mr. J. B. Polding, the Research officer appointed at the Imperial Veterinary Research Institute, Mukteswar, for an investigation into the incidence of contagious abortion in the various districts of this Province as a part of a scheme sanctioned by the Imperial Council of Agricultural Research, for all Provinces and constituent States, toured in this Province for about 6 weeks in December 1940 and January 1941 and visited 51 representative villages in 18 taluks of 11 districts and inspected 9 organized farms and 9 slaughter-houses. He was assisted in his work by the Veterinary Investigation Officer, Madras.

The investigation as conducted in this Province proceeded on three distinct lines, viz. :—

- (i) Estimation of the extent of brucellosis in organized farms, dairies, etc.
- (ii) Estimate of brucellosis in village cattle.
- (iii) A search for the existence of less reported genital diseases such as sterility, melitensis infection in sheep and goats and trichomoniasis.

The serum agglutination test was adopted by the officer for testing herds. Besides the animals maintained in the Livestock Research stations, Hosur and Guntur, he conducted tests in the dairy cows maintained at the Central Jail, Trichinopoly; Co-operative Milk Supply Union, Kodaikanal, Sacred Heart College, Kodaikanal; Vaniankulam Dairy, Melacheval, Tinnevely district; the Mission Dairy Farm, Nagargole, Tinnevely district; the Agricultural College Dairy, Coimbatore; and the Municipal Dairy, Ootacamund.

The results of his tests showed that there was a small amount of semi-latent infection in the herds maintained at all the institutions mentioned except the Central Jail, Trichinopoly, the Sacred Heart College, Kodaikanal, and the Livestock Research Station, Hosur.

In estimating the extent of brucellosis in village cattle, the methods adopted by the Research officer were—

- (a) Random sampling of blood collected in abattoirs from slaughtered animals, and
- (b) testing of blood samples collected in villages from suspected animals.



For the purpose of collecting blood samples, the Research officer visited 12 of the larger slaughter-houses in the Province and examined samples from 181 sheep and goats and 116 cows and buffaloes. The results have confirmed the existence of the disease where it was previously known to prevail. The percentage of positive and doubtful reactions to the tests in places where infection exists is as follows :—

Place.	Class of animal.	Number tested.	Reactions.	
			Positive.	Doubtful.
Nellore .. ..	Sheep and goats ..	49	4	7
Madras .. ..	Cows and buffaloes..	20	Nil.	1
Trichinopoly ..	Do. ..	15	Nil.	1
Kodaikanal ..	Do. ..	10	2	2
Madura .. ..	Sheep and goats ..	37	1	Nil.
Do. .. ..	Cows and buffaloes..	17	1	8
Ootacamund ..	Do. ..	36	2	8
Coonoor .. ..	Do. ..	18	1	3
Total, sheep and goats ..		86	5 (5·8 per cent).	7 (8·1 per cent).
Total, cows and buffaloes ..		116	6 (5·1 per cent).	15 (12·9 per cent).

For the purpose of the investigation into the extent of brucellosis in village cattle, the villages visited are grouped under—

- (i) Submontane tracts comprising the foot hills of Kodaikanal (Madura district), Anchetty (Salem district), Kollegal (Coimbatore district), Rapur (Nellore district), and the Nilgiris; and
- (ii) the plains areas of the Province including the environments of the cities of Madura, Trichinopoly, Tinnevely and Coimbatore.

The results of investigation show that the area in the Kistna district, contiguous to the adjoining State of Hyderabad (Deccan) is infected. The finding is of some interest, because infection has been diagnosed in the State also and cattle are often interchanged between this Province and the State across the border. A further point of interest is that the infection in the foot hills mentioned above is comparatively heavy and that the 'plains' areas and suburbs of cities are comparatively free. In the course of the enquiry, 87 draft cattle were subjected to the test and 25 (30 per cent) gave positive results. Most of these showed synovial enlargements. The synovial fluid from some of the cases has reacted to a high titre to the agglutination test and the blood serum of the animals was also positive. It appears that the presence of synovial enlargements in draft cattle in an area may be taken as a fair indication of the existence of infection justifying a more detailed enquiry.

Enquiries and examination of material with a view to determine the presence of Trichimoniasis and Melitensis as other possible causes of contagious abortion were also carried out by the Research officer, but the results at present cannot be considered conclusive.

## IX. MISCELLANEOUS.

## (1) CRIMINAL POISONING AND MALICIOUS INJURY.

158. The Chemical Examiner to Government, examined the viscera of 31 animals and poison was detected in 12 cases. Fourteen cases of criminal poisoning in this Presidency were prosecuted resulting in convictions in 7 cases. Of the remaining, one case became undetected, one was pending and the accused were acquitted in 5 cases. One hundred and seventy-one cases were examined by the staff of this department for malicious injury during the year and certificates issued.

## (2) SOCIETY FOR THE PREVENTION OF CRUELTY TO ANIMALS.

159. The total number of convictions obtained during the year under report in this Presidency under the Prevention of Cruelty to Animals Act was 13,853 as against 13,751 during the previous year. The largest number of convictions were obtained in Coimbatore, Trichinopoly, Salem and Madura districts, the figures for these districts being 3,300, 3,214, 1,449 and 1,168 respectively. Out of the total number of cases convicted, the animals in 3,882 cases were remanded to Veterinary institutions declared as infirmaries under the Act for treatment as against 3,414 cases so remanded in the previous year, Coimbatore alone accounting for 2,910 cases.

## (3) FOREST LIVESTOCK.

160. The general condition of the forest livestock during the year continued to be satisfactory. The total number of livestock which were under the Inspector of Livestock, Calicut, on 31st March 1941 was as follows:—

Elephants—114.

Bullocks—4.

Buffaloes—2.

There was no outbreak of any contagious disease among the livestock and no preventive inoculations were conducted. Four hundred and forty-eight cases of non-contagious diseases were treated during the year as against 499 of the previous year. The number of new captures during the year was 11 as against 24 of the previous year. There were 5 births and 8 deaths during the year. No case of cataract was diagnosed during the year, but there were 8 cases of Corneal Opacity. These cases are under treatment and are progressing satisfactorily. The 'vakkai' method of dragging which has replaced the harness system is reported to have reduced considerably the number of cases of severe galls and abscesses.

## (4) MEAT INSPECTION.

161. Several municipalities and panchayat boards in this Presidency continued to utilize the services of the local Veterinary Assistant Surgeons for meat inspection work. During the year under report, a few of the municipalities and panchayat boards

ceased to utilize the services of the Veterinary Assistant Surgeons for this work. For example, the Cuddapah Municipality has withdrawn the meat inspection work from the Veterinary Assistant Surgeon, the Conjeevaram Municipality which was utilizing the services of a Veterinary Assistant Surgeon of this department, engaged a retired Veterinary Assistant Surgeon for the purpose and the Tiruchengodu Union Board has withdrawn the work from the Veterinary Assistant Surgeon and entrusted it to a newly appointed Sanitary Inspector of the Board. The Rajampet Panchayat Board entrusted the meat inspection to the Veterinary Assistant Surgeon in charge of the Veterinary Dispensary, Rajampet, from 1st August 1940, but subsequently withdrew it from 1st March 1941. The Bellary Municipality which formerly had a private Veterinary Assistant Surgeon in employ, entrusted the work to the Veterinary Assistant Surgeon in charge of the Veterinary Hospital, Bellary, during the year. The Anakapalle, Hindupur, Tadpatri, Mannargudi and Devakottai Municipalities and the Cannanore Cantonment Board engaged the services of the local Veterinary Assistant Surgeons this year for the work. The Salem Municipality has engaged the services of the Veterinary Assistant Surgeon in charge of the Veterinary Hospital, Salem, for anti-mortem examination of cattle, sheep and goats intended for slaughter. The Hospital Veterinary Assistant Surgeon, Jaggayyapet, who was previously doing only anti-mortem examination, was entrusted with post-mortem examination work also. In addition, the question of utilizing the services of the local Veterinary Assistant Surgeons for meat inspection work by the Lalgudi and Manapparai Municipalities was under correspondence during the year under report and the Veterinary Assistant Surgeons concerned were employed on this work from 1st April 1941.

#### (5) LETHAL CHAMBERS.

162. The lethal chambers maintained by local bodies and municipalities were periodically inspected as usual by the staff of this department and inspection reports forwarded to the executive authorities concerned.

#### (6) PROPAGANDA.

163. Thirty-eight leaflets have so far been issued by this department on diseases and other animal husbandry matters for free distribution to the ryots. Propaganda work was, as usual, undertaken by the staff during the course of their tours. The three motor vans of this department which are intended solely for propaganda purposes toured constantly in the districts reaching many interior villages and carried out intensive and appreciable propaganda work. The vans have been equipped with charts and slides on various animal husbandry matters. With the help of these charts and slides the staff accompanying the vans gave lantern lectures to the ryots in addition to practical demonstrations in treating cases and of surgical operations.

Every opportunity was availed of by the staff of the department to promote propaganda work by participating at meetings of the Rural Reconstruction League, Gramasangams and other gatherings such as District Co-operative Conferences, Ryots' Conferences, jamabandis of taluks, etc. Advantage was also taken of cattle fairs and shows and rural exhibitions, where veterinary stalls were opened, in which pictorial charts and posters as well as instruments and appliances were exhibited and instructive lectures on veterinary matters were delivered.

#### (7) VISITING COMMITTEES.

164. The members of the visiting committees attached to the veterinary institutions except in a few cases, took a keen interest in the work of the institutions concerned and rendered necessary help in regard to their working by useful suggestions.

#### (8) LEVY OF FEES.

165. The system of levy of fees was continued as usual in several Veterinary institutions in the Presidency and has not affected either the popularity of the institutions or the number of admissions.

#### (9) EXPORTATION OF LIVESTOCK AND LIVESTOCK PRODUCTS.

166. The export of cattle from the Madras Province to other provinces and states consists mostly of inferior stock for slaughter and a small proportion for work and breeding. The total number transported per annum is about 5,000.

167. Twenty-five thousand five hundred and thirty-nine sheep and goats and three bulls were examined and certified for export to Colombo and a sum of Rs. 6,389-4-0 was collected as compared with 24,846 sheep and goats, 8 cattle, 54 she-buffaloes and 3 calves exported and a sum of Rs. 6,456-15-0 realized during the previous year. The expenditure during the year for this purpose was Rs. 1,695-6-0, which leaves a credit balance of Rs. 4,693-14-0.

168. A statement showing the export and import of livestock and their products during the years 1939-40 and 1940-41 are furnished below.

#### EXPORTS.

Statement showing the exports of animal products from the various ports of the Madras Province to foreign countries during the years 1939-40 and 1940-41.

Particulars.	1939-40.			1940-41.		
	TONS.	OWT.	LBS.	TONS.	OWT.	LBS.
Raw cow hides .. .. .	119	0	0	33	0	0
„ calf skins .. .. .	0	1	0	..	..	..
„ other hides .. .. .	1	0	0	0	2	0
<b>Total ..</b>	<b>120</b>	<b>1</b>	<b>0</b>	<b>33</b>	<b>2</b>	<b>0</b>
Raw goat skins .. .. .	1,527	0	0	4,751	0	0
„ sheep skins .. .. .	176	2	30	143	0	0
„ other skins .. .. .	2	7	28	0	2	0
<b>Total ..</b>	<b>1,705</b>	<b>9</b>	<b>58</b>	<b>4,894</b>	<b>2</b>	<b>0</b>

Particulars.	1939-40.			1940-41.		
	TONS.	CWT.	LBS.	TONS.	CWT.	LBS.
Tanned buffalo hides .. .. .	2,441	7	0	1,504	0	0
„ cow hides .. .. .	20,249	14	0	15,154	0	0
„ other hides .. .. .	4	3	0	1	0	0
<b>Total ..</b>	<b>22,695</b>	<b>4</b>	<b>0</b>	<b>16,659</b>	<b>0</b>	<b>0</b>
Tanned buffalo-calf skins .. .. .	900	0	0	760	0	0
„ cow-calf skins .. .. .	1,348	17	0	1,025	0	0
„ goat skins .. .. .	2,542	18	12	1,166	0	0
„ sheep skins .. .. .	2,949	17	66	1,278	0	0
„ other skins .. .. .	35	7	34	6	0	0
<b>Total ..</b>	<b>7,777</b>	<b>0</b>	<b>0</b>	<b>4,235</b>	<b>0</b>	<b>0</b>
Horn—Tips and pieces of horn .. .. .	118	0	0	2,771	cwt.	
Bone meal .. .. .	10,229	0	0	9,815	tons.	
Horn meal .. .. .	96	0	0	150	tons.	

## Animals—Live—Export, 1940-41;

			Total.
Cattle to Ceylon ..	579	Cattle to Straits Settlements.	6
			585
Horses to Ceylon ..	11		11
Sheep and goats to Ceylon.	25,520		25,520
Others to Ceylon ..	1,150	Others to Burma.	113
			1,263

## IMPORTS.

Statement showing the imports of animals and animal products into the various ports of the Madras Province from foreign countries during the years 1939-40 and 1940-41.

	1939-40.	1940-41.
Animals living—		
Horses .. .. .	27	144
Others .. .. .	21	Nil.
Animal products—		
Raw hides .. .. .	1,241 tons.	1,321 tons.
„ skins .. .. .	1,260 „	1,067 „
Horn tips and pieces of horns .. .. .	116 lbs.	160 lbs.
Tanned hides .. .. .	8 tons.	17 tons.
„ skins .. .. .	8 „	10 „
Milk products—		
Evaporated or whole milk .. .. .	9,237 cwt.	5,329 cwt.
Skimmed or separated .. .. .	7,337 „	1,159 „
Dried or powdered whole milk .. .. .	179 „	772 „
Dried skimmed milk .. .. .	1,440 „	1,556 „

## X. IMPERIAL COUNCIL OF AGRICULTURAL RESEARCH SCHEMES.

## (1) VETERINARY INVESTIGATION SCHEME.

169. Sri G. R. Viswanathan continued to hold charge of the post of Veterinary Investigation Officer, Madras, throughout the year under report. He was on tour for 228 days in the year and travelled 10,891 miles by road and 10,027 miles by rail and visited 209 villages.

170. He attended the Fourth Meeting of the Animal Husbandry Wing of the Board of Agriculture and Animal Husbandry in India held at Izatnagar.

171. He continued his investigations on the following diseases:—

Cattle diseases—

- 1 Hæmorrhagic Septicæmia.
- 2 Brucellosis.
- 3 Chronic Rheumatic Arthritis.
- 4 Theileriasis.
- 5 Surra in cattle and equines.
- 6 Johne's disease.

Sheep and goat diseases—

- 1 Contagious Caprine Pleuro-Pneumonia.
- 2 Circling disease.
- 3 Anthrax.
- 4 Rinderpest.
- 5 Johne's disease.
- 6 Sheep pox.
- 7 Parasitic infection.
- 8 Jaundice in sheep and lambs.
- 9 Other diseases.

172. Details of the work done by the Veterinary Investigation Officer forms a separate report which is under submission to Government. A summary of the interesting results obtained by the Veterinary Investigation Officer is as given below.

*Cattle diseases.*

173. *Hæmorrhagic Septicæmia.*—Statistics regarding the incidence of this disease were collected from all the districts of this Presidency and they are now being analysed and studied for the preparation of the final report.

174. *Brucellosis.*—Investigations into the incidence of this disease were conducted in 53 villages of Guntur, Nellore, Trichinopoly, Madura, Tinnevely, Coimbatore and Salem districts. Forty-nine of these villages were visited along with the Research Officer (Contagious Abortion), Imperial Veterinary Research Institute, Mukteswar, to find out the incidence of *Brucella* infection in the village cattle and in Government farms. As many as 802 samples of sera were submitted to the Agglutination test of which, 118 gave positive results and 70 suspicious.

175. *Chronic Rheumatic Arthritis.*—Sixty villages in Kurnool and Nellore districts were visited in this connexion with the two assistants of the Government Agricultural Chemist, Coimbatore. Samples of bones, water, teeth, etc., were collected and analysed. Photographs of the affected animals and human beings were taken. Feeding experiments on laboratory animals with the bunch variety of groundnut which was suspected to cause this condition were

conducted with inconclusive results. Curative treatment of affected animals with sterilized bonemeal and blood fibrin administered in the food is reported to have given satisfactory results.

176. *Surra in equines and cattle*.—Incidence of equine surra was investigated in three villages of Guntur and Vizagapatam districts. Blood smears from 14 ponies were examined of which 4 were positive. All these four animals were treated with Naganol. Biological tests with the blood of the affected ponies were conducted on laboratory animals.

177. Bovine surra was met with in three villages of Kistna and Madura districts. Blood smears from 44 bovines were examined, out of which, 12 were positive. Positive smears were sent to the Systematic Protozoologist, Imperial Veterinary Research Institute, Mukteswar, for his comparative study. Treatment of the affected animals with 10 to 15 c.c. of 1 per cent solution of Antimonium Tartaratum intravenously was undertaken by the local Touring Veterinary Assistant Surgeons.

178. *Johnie's disease*.—One hundred and ninety-four cows in the Livestock Research Station, Hosur, and 34 animals in the Agricultural College Dairy Farm, Coimbatore, were tested with Johnin. In the Livestock Research Station, Hosur, 20 gave a positive reaction and 13 were suspicious. In the Agricultural College Dairy Farm, Coimbatore, 3 gave a positive reaction and 2 suspicious. Periodical examination of the rectal washings of the positive and suspicious reactors were done by the Principal, Madras Veterinary College, and the results recorded.

#### *Sheep and goat diseases.*

179. *Contagious Caprine Pleuro-Pneumonia*.—Investigations were continued in 32 villages of Chingleput, Nellore, Salem, North Arcot, Chittoor, Coimbatore, Vizagapatam and Bellary districts. Five hundred and thirty-nine goats were vaccinated with natural virus in Tyrode solution, the dose being 5 c.c. per animal, subcutaneously in the ear, of which, there were 47 attacks and 21 deaths. Two thousand three hundred and five goats were vaccinated with formalized vaccine in 19 villages. Field experience indicates that prophylactic vaccination with the formalized vaccine considerably reduces the percentage of mortality in some centres and in others controls the disease without further spread.

Curative treatment with Neosalvarsan, Noarsenobillon and Sodium Cacodylate were undertaken in 150 animals in different stages of the diseases. Seventy-nine goats were treated with Neosalvarsan (dose from 0.0375 to 0.3 grammes) and of these, six animals died. Sixty-six goats were treated with Noarsenobillon (dose 0.1 gramme in 20 c.c. of distilled water) and of these, 22 died. Five goats were treated with Sodium Cacodylate (dose 1 c.c. each injected subcutaneously) of which, 3 died.

From the field experience, it is concluded that a minimum dose of 0.1 gramme of either Neosalvarsan or Noarsenobillon in 20 c.c. of distilled water intravenously is valuable in effecting a cure.

180. *Anthrax in sheep and goats*.—Investigations were conducted in 12 villages of Chingleput, Anantapur, Nellore and South Arcot districts. Two thousand three hundred and four sheep and 88 goats were vaccinated with Anthrax Spore Vaccine in five enzootic areas, of which 94 sheep and 33 goats died as a result of vaccination.

181. *Rinderpest in sheep and goats*.—The disease was investigated in 10 villages of North Arcot, South Arcot, East Godavari, Vizagapatam, Kurnool and Chingleput districts. Statistics were collected and recorded.

182. *Circling disease of sheep*.—Investigations were continued in 20 villages of Salem, Anantapur, Chittoor, East Godavari, Vizagapatam and South Arcot districts. Details regarding the incidence, mortality, etc., were collected and recorded. Post-mortems were conducted and materials were sent to the Principal, Madras Veterinary College and the Imperial Veterinary Research Institute, Mukteswar, and their results were recorded.

183. *John's disease*.—Two hundred and ten sheep in the Livestock Research Station, Hosur, were tested with Johnin by the single intradermal method. Thirty gave a positive reaction and 24 suspicious. Two of the positive reactors were destroyed to confirm the findings. Though the post-mortem lesions revealed congestion and slight thickening of the intestines, no acidfast organisms could be detected. Periodical examination of the rectal washings of the positive and suspicious reactors was done by the Principal, Madras Veterinary College, with negative results.

184. *Sheep-pox*.—Investigations of this disease were continued in six villages of Vizagapatam, South Arcot, Chingleput and Salem districts. Details were collected and recorded for statistical purposes.

185. *Parasitic infestation*.—This condition was investigated in sheep in eight villages of Salem, Anantapur, Chittoor, Vizagapatam and South Arcot districts. Specimens of dung from sheep from all these villages were collected and examined. It is observed from the systematic examination of the dung of sheep and goats in the field that Ova of Strongyles can be detected in about 70 per cent of the animals.

186. *Jaundice in sheep and lambs*.—One outbreak was investigated in Vriddhachalam taluk of South Arcot district. The affected animals showed a completely jaundiced condition of the organs, skin and urine and died within two or three hours. Details were collected and recorded.



## (2) HELMINTHIASIS SCHEME.

187. *Oesophagostomum radiatum*.—During the year under report, the study of the life history of this worm was continued and completed. The effect of temperature on the infective larvæ, and their capacity to revive from desiccation after about a week, when mixed with sand or periodically moistened, have been estimated. Disinfectants such as izal and copper sulphate destroy the larvæ, if applied directly and on fæces containing them, in the concentrations of 0.2 per cent and 1 per cent respectively. Ten c.c. of 3 per cent sodium hydroxide, 5 c.c. of 2 per cent formalin and 10 c.c. of cow's urine, to every 25 grammes of fæces with the eggs, are lethal. The larvæ are positively heliotropic and can ascend moist soil to a height of as much as 10 cms. but do not appear to be active climbers on grass. Their life in water as experimented in the laboratory extends to nearly two months. Fourth stage larvæ are sometimes unduly retained in the nodules. An infestation with this worm has been observed to last for more than eight months. A detailed report on this worm has been prepared and is being sent to the Imperial Council of Agricultural Research for publication.

188. *Ascaris vitulorum*.—The development of the eggs proceeds slower in the months of December and January than at other times, due to the cold weather. With regard to the longevity of the embryonated eggs in the laboratory about 10 per cent of the total number of eggs survive after nine months in 2 per cent formalin. They develop successfully even in the presence of the oils of castor, chenopodium and turpentine. Extra-corporeal hatching of the eggs which has been observed on one occasion is perhaps due to increased alkalinity of the medium in which they were. As a result of experimental infection, larvæ of *Ascaris* were detected in the liver of a guinea-pig, and also in a 41 days old buffalo-calf on the sixth day after infection. Infestation of *Bos Indicum* with *Ascaris* eggs from the dung of *Bos bubalis*, or vice versa, has not been heretofore successful, and such biological strains of the worm as are known in the man and the pig may be anticipated here. Resistance to an infection due to age also appears to be acquired by the calves. These two phenomena are proposed to be elucidated in the current year.

189. *Moniezia*.—A large number of sheep at the Hosur Cattle Farm were found infested with this tape worm, and the opportunity was availed of to examine the scrapings from the floor and walls of the pen and from samples of fodder used as bedding for the lambs for the probable presence of any invertebrate intermediate host. The agent, however, was not found.

190. *The Helminthological Survey*.—About thirty bottles of helminths from cattle, sheep and goats have been received in the section during the year, in connection with this survey. It is hoped to carry it out on a larger scale in the third year of the scheme with the help of the district staff.

## (3) SHEEP-BREEDING SCHEME.

191. Two flocks are maintained, a pure Bellary known as 'A' flock and a Bikanir-Bellary known as 'B' flock. The total strength was 284 on 1st April 1940. During the year 84 lambs were born. Three Bikanir rams were purchased from Hissar. Eight rams were sold and 71 died. The stock on 31st March 1941 was 292.

192. *Births*.—Eighty-four lambs were born during the year of which 12 were born in April 1940, 42 in September-October 1940 and 30 in March 1941. The lambing had not concluded on 31st March 1941 when there were 62 ewes yet to lamb.

193. *Mating*.—Mating was arranged in five batches—two for 'A' flock and three for 'B' flock. Bellary ram No. 125 and Bikanir ram No. 381 of the 'B' flock showed no inclination to serve and consequently all the ewes in 'B' flock were put to Bikanir ram No. 367. The service performances were as follows:—

	'A' flock ram No. 33.		Ram No. 84.		'B' flock Bikanir ram No. 367.	
	Ewes put.	Ewes served.	Ewes put.	Ewes served.	Ewes put.	Ewes served.
April-June 1940 ..	14	14	14	13	55	39
October-December 1940	21	21	20	20	77	58

Contrary to the usual practice, mating was started early in March 1941 with a view to obtain lambs before the north-east monsoon sets in. Only a few ewes, however, were covered as most of them were not in heat. The mating season therefore extended till the end of April 1941.

194. *Sales*.—Five surplus rams were sold for breeding. Two rams which proved a failure at stud and another were sold for mutton.

195. *Deaths*.—There were 71 deaths during the year chiefly due to worms. Mortality was heavy among lambs below six months. The periodical drenching with 1 per cent solution of copper sulphate and mustard was continued.

196. *Feeding*.—All the sheep were fed with concentrates in addition to grazing and green fodder to give them better powers of resistance against worm infestation. Lambs neglected by their rams and of ewes deficient in milk were handfed with cow's milk.

197. *Wool yield*.—Sheep were shorn twice during the period. They were washed two to four days before each clipping.

Two hundred and sixty-five sheep yielded 543 lbs. and 10 oz. of wool. This works out at 2 lbs. 1 oz. per head on an average as against 2 lbs. 7.8 oz. of the previous year. The farm-bred Bellary ewes in 'A' flock averaged 2 lbs. 4 oz. per head and

Bellary ewes in 'B' flock averaged 1 lb. 10 oz. Bikanir rams gave an average of 2 lbs. 11½ oz. per head. This small yield is due to the fact that the three new arrivals were available only for the second clip and the original ram (No. 367) was also run down in condition due to the heavy mating season.

Bellary rams gave an average of 4 lbs. 6 oz. as against 5 lbs. 1-6 oz. of the previous year.

A few of the good yielders are—

## Bellary rams.

Bikanir rams  
(summer clip only).

Bellary rams.		LBS.	OZ.	Bikanir rams (summer clip only).		LBS.	OZ.
Ram No. 84	.. ..	6	3	Ram No. 367	.. ..	1	13
" No. 224	.. ..	5	11	" No. 790	.. ..	3	7
" No. 33	.. ..	4	10	" No. 816	.. ..	3	8
" No. 178	.. ..	5	3	" No. 861	.. ..	2	2

## Bellary ewes.

## 'A' flock (white).

## 'B' flock (black).

'A' flock (white).		LBS.	OZ.	'B' flock (black).		LBS.	OZ.
No. 100	.. ..	2	15	No. 1	.. ..	2	10
No. 319	.. ..	2	12	No. 66	.. ..	2	7
No. 6	.. ..	2	11	No. 69	.. ..	2	5
No. 161	.. ..	2	11	No. 98	.. ..	2	5

198. The performances of the progeny is worth noting. The lambs of 'B' flock showed a higher rate of growth both in weight and height than those of 'A' flock. Similarly, with regard to wool, the yield was better in the 'B' flock and appears to be superior in quality.

## (4) MILK-RECORDING SCHEME.

199. This scheme which commenced at the end of the previous year was not successful and it was, therefore, temporarily suspended from 20th August 1940.

## (5) INVESTIGATION INTO INDIGENOUS DRUGS WITH SPECIAL REFERENCE TO THEIR TOXICOLOGY.

200. This is an All-India scheme sanctioned by the Imperial Council of Agricultural Research at a cost not exceeding Rs. 39,000 spread over a period of three years. The scheme began to function from 19th July 1940 at the Madras Medical College under the administrative control of the Surgeon-General with the Government of Madras. Two officers of the Madras Veterinary Subordinate Service were lent from this department in connection with this scheme, one as the Veterinary Research Officer (Gazetted) and the other as his Assistant.

## (6) INVESTIGATION INTO POULTRY DISEASES.

201. A Veterinary Assistant Surgeon of this Department was appointed as Assistant Disease Investigation Officer (Poultry diseases) and he took charge of the post on the 8th November 1940 afternoon. Immediately after assuming charge of the post, the officer proceeded for training for three months to the Poultry Research Station, Imperial Veterinary Research Institute, Izatnagar. After training, he reported himself for duty at the Madras Veterinary College on the 25th February 1941.

## XI. FINANCE.

202. A statement showing the receipts and charges of this department for the year under report is appended (table VIII).

It will be seen from the statement that the expenditure for the year was Rs. 12,00,571-14-3 as against Rs. 12,30,210-14-5 during 1939-40. During the year under report there was a general decrease under all the minor heads except under 'Other charges—Serum Institute' and 'Breeding operations.' The decrease is chiefly due to the retirement of some senior District Veterinary Officers during the year, smaller purchase of Sera and Vaccines from Mukteswar, less quantities of medicine, apparatus and materials, etc., obtained for use in Veterinary Institutions and Madras Veterinary College, and absence of any special research work at the College laboratory.

The receipts of the department during the year amounted to Rs. 1,17,001-14-2 as against Rs. 1,12,636-5-4 of the previous year.

203. The total expenditure incurred by the Public Works Department (original works and repairs) on buildings of the Civil Veterinary Department during the year as reported by the Accountant-General, Madras, was Rs. 42,624-10-2.

## XII. FUTURE PROGRAMME OF WORK.

## (1) EDUCATION.

204. The G.M.V.C. Diploma Course and the B.V.Sc. Degree Course will continue as well as the Refresher Course for the Veterinary Assistant Surgeons, at the Madras Veterinary College.

## (2) SERUM INSTITUTE.

205. The manufacture of the following biological products will be continued at the Institute:—

(1) Anti-Rinderpest Serum.

(2) Anti-Hæmorrhagic Septicæmia Serum.

- (3) Anti-Blackquarter Serum.
- (4) Fowl Cholera Serum.
- (5) Fowl Cholera Vaccine.
- (6) Fowl Pox Vaccine.
- (7) Hæmorrhagic Septicæmia Vaccine.
- (8) Blackquarter Vaccine.
- (9) Bovine Lymphangitis Vaccine.
- (10) Rinderpest Virus.

### (3) LIVESTOCK SECTION.

206. Schemes for improvement of livestock on the lines recommended by the Provincial Livestock Improvement Board at its last meeting have been submitted to Government and these include—

- (a) Proposals for the utilization of the Government of India grant of Rs. 50,000 for the Rural Development Fund for the purchase and distribution of breeding bulls and Bikanir rams.
- (b) proposal to augment the Provincial Livestock Improvement Fund by—
  - (i) levy of small fees on each animal brought for sale at the larger cattle fairs in the Province,
  - (ii) levy of a small fee for every animal slaughtered in licensed slaughter houses,
  - (iii) transfer to the Provincial Livestock Improvement Fund of the balance of amount available from the funds donated in response to His Excellency the Viceroy's appeal for livestock improvement, and
  - (iv) contributions from district and local bodies, institutions and private individuals.

### (4) LABORATORY WORK AND RESEARCH.

207. The routine research work in the Parasitology and Pathology and Bacteriology Sections of the Madras Veterinary College and the experiments and examinations of materials, etc., will be continued as usual. New items of research will also be undertaken in both these sections as occasion arises. The Imperial Council of Agricultural Research Schemes of Enquiry into Helminthiasis of Cattle and Investigation into the Diseases of Poultry will also be continued.

The Veterinary Investigation Officer, Madras, will continue his investigations into the diseases allotted to him.

## (5) CONTAGIOUS AND NON-CONTAGIOUS DISEASES.

208. With a view to have a more effective control over contagious diseases, proposals for the normal expansion of the department by the opening of additional touring billets will be sent up to Government as a Part II Scheme for 1942-43.

## (6) PROPAGANDA.

209. Propaganda on existing lines will be continued with the help of the three motor exhibition vans of this department touring in the districts for the purpose. Every possible effort will be made by the issue of leaflets and intensive propaganda work in the villages to educate the ryots on veterinary matters and to popularize the departmental activities.

MADRAS,  
10th July 1941.

T. J. HURLEY,  
Director of Veterinary Services.

307. The various research work in the Physiology and Pathology and Pathology sections of the Madras Veterinary College and the experiments and examinations of materials etc. will be continued as usual. New lines of research will also be undertaken in both these sections as occasion arises. The Imperial Council of Agricultural Research Scheme of Inquiry into Helminthiasis of Cattle and investigation into the Disease of Rabbits will also be continued.

The Veterinary Investigation Officer, Madras will continue his investigations into the disease allotted to him.

TABLE I.

Statistics of mortality from contagious diseases and other causes among livestock in the Province of Madras during the year 1940-41 (as furnished by Collectors and as recorded in this office).

Kind of animal.	Nature of disease.													Total contagious diseases.	Other causes.	Grand total of contagious diseases and other causes.	
	Glanders.	Surra.	Dourine.	Anthrax.	Rinderpest.	Hæmorrhagic septicæmia.	Foot-and-mouth disease.	Blackquarter.	Sheep-pox.	Pleuro-pneumonia.	Scab.	Goat-pox.	Rabies.				Other contagious and parasitic diseases.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Equines .. ..	..	..	..	1	..	..	..	..	..	..	..	..	..	71	76	106	182
Cattle .. ..	..	256	..	2,071	13,137	2,813	761	4,310	..	..	..	..	..	3,994	27,342	6,539	33,881
Buffaloes .. ..	..	25	..	578	4,721	2,125	163	378	..	..	..	..	..	1,345	9,395	1,214	10,549
Sheep .. ..	..	..	..	444	..	..	149	..	1,067	891	12	..	..	5,529	7,592	2,245	9,837
Goats .. ..	..	..	..	230	..	..	120	..	..	165	7	32	..	231	785	96	881
Dogs .. ..	..	..	..	..	..	..	..	..	..	..	..	..	15	19	34	17	51
Camels .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	3	..	3
Total for 1940-41 .. ..	..	285	..	3,324	17,858	4,938	1,193	4,688	1,067	556	19	32	15	11,192	45,167	10,217	55,384
Total for 1939-40 .. ..	..	316	..	3,239	13,270	4,503	1,055	4,630	355	150	39	3	5	6,679	34,244	12,122	46,366
Total for 1938-39 .. ..	..	1,241	..	3,149	9,986	6,012	709	9,905	864	393	63	12	17	3,246	35,597	23,206	58,803

TABLE II.

Summary of results of preventive inoculation in the Province of Madras during the year 1940-41.

Name of the disease against which inoculation was undertaken.	Method of inoculation.	Source of product.	Number of outbreaks in which inoculation was undertaken.	Number of villages affected in these outbreaks.	Bovine population of affected villages.	Number of animals which died un inoculated in course of outbreaks.			Number of animals inoculated.			Number of inoculated animals which died of the disease (in affected villages).		
						Bovines.	Equines.	Others.	Bovines.	Equines.	Others.	Bovines.	Equines.	Others.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Rinderpest	Serum alone method.	Serum Institute, Madras.	5	6	3,000	3	..	..	639	..	319	..	..	..
	Serum simultaneous with goat virus.	Do.	1,645	1,692	1,076,841	15,629	..	587	330,243	..	10,534	131	..	..
	Glycerinated goat spleen tissue vaccine.	Do.	12	12	10,915	238	..	..	78,459*	..	344*	11	..	..
	Goat virus alone	Do.	..	..	..	..	..	..	2,715	..	..	..	..	..
	Goat spleen tissue piece in saline.	Do.	2	2	1,306	24	..	..	8,123*	..	..	..	..	..
	Desiccated goat spleen tissue.	Do.	11	12	8,207	137	..	..	301*	..	..	..	..	..
		Total	1,675	1,724	1,100,269	16,031	..	587	242	..	..	6	..	..
									173*	..	..	18	..	..
									2,679	..	11,214	166	..	..
Hæmorrhagic septicæmia.	Serum alone	Serum Institute, Madras.	108	111	210,900	503	..	..	7,197	..	..	..	..	..
	Vaccine alone	Do.	559	663	343,670	4,506	..	..	40*	..	..	1	..	..
		I.V.R.I., Mukteswar.	27	28	29,720	227	..	..	131,974	..	..	1	..	..
		Total	694	802	584,290	5,236	..	..	2,708*	..	..	2	..	..
									13,617	..	..	..	..	..
									155,536	..	..	..	..	..
Black quarter	Serum alone	Serum Institute, Madras.	2	3	1,300	28	..	..	545	..	..	..	..	..
		I.V.R.I., Mukteswar.	24	26	11,325	164	..	..	4,883	..	..	..	..	..
	Vaccine alone	Do.	338	374	212,633	2,013	..	..	42*	..	..	7	..	..
		Serum Institute, Madras.	244	272	149,616	1,770	..	..	61,212	..	..	23	..	..
		Total	608	675	374,874	3,976	..	..	4,958*	..	..	..	..	..
									47,241	..	..	..	..	..
									2,430*	..	..	..	..	..
		Total	608	675	374,874	3,976	..	..	121,320	..	..	30	..	..



Summary of results of preventive inoculation in the Province of Madras during the year 1940-41—cont.

Name of the disease against which inoculation was undertaken.	Method of inoculation.	Source of product.	Number of outbreaks in which inoculation was undertaken.	Number of villages affected in these outbreaks.	Bovine population of affected villages.	Number of animals which died un inoculated in course of outbreaks.			Number of animals inoculated.			Number of inoculated animals which died of the disease (in affected villages).		
						Bovines.	Equines.	Others.	Bovines.	Equines.	Others.	Bovines.	Equines.	Others.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Anthrax ..	.. Serum alone	.. I.V.R.I., Mukteswar.	46	91	62,608	551	..	112	6,697	..	3,170	2	..	..
	Vaccination with spore vaccine.	with Do.	3	3	4,182	..	..	30	..	..	1,814	..	..	11
	Total ..	..	49	94	66,790	551	..	142	6,763	..	4,984	2	..	11
Sheep-pox	.. Ovination ..	.. Local ..	5	5	800	..	..	49	..	..	1,369	..	..	..
Fowl pox (or chicken-pox.)	.. Vaccination ..	.. Serum Institute, Madras.	6	6	4,095	..	..	25	..	..	750	..	..	..
Fowl-cholera ..	.. Sero-vaccination	.. Serum Institute, Madras.	1	1	..	..	..	3	..	..	278*	..	..	..
	Vaccine alone	.. Do.	..	..	..	..	..	..	..	..	44	..	..	..
	Serum alone	.. Do.	..	..	..	..	..	..	..	..	65*	..	..	..
	Total ..	..	3	3	150	..	..	62	..	..	335*	..	..	..
Contagious pleuropneumonia in goats	Vaccination	.. Local ..	17	18	16,266	..	..	240	..	..	2,598	..	..	51
Bovine lymphangitis.	Do.	.. Serum Institute, Madras.	..	..	..	..	..	..	5	..	..	..	..	..
Grand total ..			3,057	3,327	2,147,534	25,793	..	1,105	707,207	..	22,046	200	..	62
						23,898				720,253				262

\* Clean areas.

NOTE.—I.V.R.I. = Imperial Veterinary Research Institute.

Statement showing the number of animals treated and castrated at

District.	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.			
			Bovines.	Equines.	Others.	Total.	Bovines.	Equines.	Others.	Total.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Vizagapatam Circle— Vizagapatam .. ..	6	6	142	5	73	220	7,804	651	3,400	11,855
Rajahmundry Circle— East Godavari .. ..	9	9	611	44	32	687	10,510	733	5,499	16,742
West Godavari .. ..	3	3	271	14	6	291	3,962	267	2,404	6,627
Bezwada Circle— Kistna .. ..	7	7	498	5	9	512	9,550	406	3,476	13,432
Guntur .. ..	5	5	286	33	2	321	6,796	422	2,867	10,085
Nellore Circle— Nellore .. ..	3	3	157	9	29	195	3,978	1,340	1,852	6,170
Cuddapah .. ..	4	4	13	1	4	18	4,840	150	1,170	6,160
Bellary Circle— Bellary .. ..	4	4	118	25	29	172	4,627	601	2,122	7,350
Kurnool .. ..	4	4	339	53	13	405	4,790	908	2,202	7,890
Madanapalle Circle— Chittoor .. ..	3	3	367	2	7	376	7,268	204	1,671	9,143
Anantapur .. ..	3	3	229	11	4	244	3,422	444	1,143	5,009
Vellore Circle— North Arcot .. ..	3	3	206	11	17	234	7,131	325	1,711	9,167
Salem .. ..	5	5	1,046	16	2353	3,415	6,229	893	2,741	9,863
Coimbatore Circle— Coimbatore .. ..	11	13	3,125	199	113	3,437	18,525	890	6,931	26,352
The Nilgiris .. ..	3	2	49	9	232	290	1,497	204	3,962	5,663
Calicut Circle— Malabar .. ..	4	4	309	10	48	367	4,556	145	6,551	11,474
South Kanara .. ..	2	2	72	10	50	132	2,519	63	2,022	4,603
Madura Circle— Madura .. ..	5	5	290	60	22	372	7,305	423	4,812	12,439
Ramnad .. ..	6	6	140	1	14	155	6,729	249	3,264	10,762
Tinnevely .. ..	2	2	255	11	7	273	2,372	138	1,414	3,963
Trichinopoly Circle— Trichinopoly .. ..	5	6	276	15	32	323	8,374	190	2,845	11,609
Tanjore .. ..	12	12	642	8	38	688	21,311	340	6,502	28,161
Madras Circle— South Arcot .. ..	4	4	340	24	32	396	8,952	186	1,604	10,732
Chingleput .. ..	5	7	349	28	71	448	9,985	452	3,801	14,224
Madras City .. ..	2	5	509	208	547	1,264	4,291	338	8,617	13,216
Total .. ..	120*	127	10,639	812	3,784	15,235	1,77,323	10,962	84,082	272,707
Private Institutions— Vizianagram .. ..	1	1	541	236	189	966	1,940	454	1,010	3,400
Pithapuram .. ..	..	..	..	..	..	..	..	..	..	(Figure not available)
Sivaganga .. ..	1	1	12	..	16	28	936	35	595	1,569
Dharmathupatti .. ..	1	1	9	..	1	10	2,758	9	386	3,153
Total .. ..	3	3	562	236	206	1,004	5,634	493	1,991	8,124
Grand total .. ..	123	130	11,201	1,048	3,990	16,239	182,957	11,460	86,073	269,030
Total in 1939-40 .. ..	121	129	10,601	1,239	2,059	13,899	181,476	11,084	81,761	273,266
Total in 1938-39 .. ..	118	127	9,961	956	2,548	13,465	173,430	11,276	78,238	251,713

\* Includes one camp veterinary dispensary at Gudalore.

## III.

## Veterinary Hospitals and Dispensaries during the year 1940-41.

Grand total of in-patients and out-patients treated during the year.	Total number of cases supplied with medicine but not brought to the Institutions.	Castrations performed.				Total.	Receipts.			Expenditure.		
		Bovines.	Equines.	Others.			RS.	A.	P.	RS.	A.	P.
(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(19)	(19)	(19)	(19)	
12,075	209	2,659	2	14	2,675	1,504	15	0	14,602	10	11	
17,429	1,088	3,186	5	17	3,208	719	0	0	22,812	15	10	
6,924	423	1,081	2	14	1,097	326	11	0	7,021	9	3	
13,944	50	1,404	5	38	1,447	652	8	0	16,418	4	3	
10,406	79	530	6	75	611	704	1	6	10,391	7	3	
6,865	8	468	4	17	489	354	9	0	6,948	14	1	
6,178	25	1,292	3	997	2,292	312	12	9	8,946	10	2	
7,522	131	595	15	446	1,056	572	9	0	8,820	11	2	
8,305	79	707	2	620	1,329	408	10	0	9,995	5	2	
9,519	47	1,620	1	180	1,801	8,613	9	0	7,478	2	0	
5,252	16	661	..	369	1,030	415	8	0	6,973	1	6	
9,401	223	832	2	119	953	307	13	0	8,980	3	7	
13,278	49	531	4	234	769	406	7	0	12,909	9	8	
29,783	1,013	2,813	29	874	3,716	3,761	9	0	26,035	2	1	
5,953	112	73	4	71	148	2,893	9	0	9,011	0	6	
11,619	119	830	..	171	1,001	1,223	2	3	12,468	9	..	
4,736	24	479	..	205	684	268	2	0	5,007	5	..	
12,912	55	1,404	4	707	2,115	974	15	6	14,276	4	7	
10,397	35	670	3	768	1,441	561	14	0	12,310	1	6	
4,197	8	169	..	83	252	225	7	0	4,972	12	4	
11,732	79	812	..	230	1,092	1,973	11	0	13,116	0	10	
28,841	81	2,322	10	1,396	3,728	5,400	12	0	29,959	2	2	
11,138	176	1,480	..	99	1,579	240	5	6	10,497	1	5	
14,686	87	848	2	116	966	1,324	0	0	14,403	8	9	
14,510	1	14	6	23	43	6,797	2	0	34,579	3	9	
287,602	4,217	27,480	109	7,923	35,522	40,957	10	6	3,28,935	13	10	
4,370	500	100	48	48	196	230	10	0	2,261	1	0	
available.)	1,594	169	..	90	259	..	..	..	1,707	8	3	
3,163	228	542	..	55	597	14	4	0	2,090	1	8	
9,127	728	811	48	193	1,052	244	14	0	6,058	10	11	
296,729	4,945	18,291	157	8,126	36,574	41,202	8	6	3,34,994	8	9	
288,220	3,291	25,683	257	7,673	33,618	32,180	1	9	3,33,346	11	9	
76,459	5,546	22,110	265	6,526	28,901	26,444	9	3	3,28,301	5	0	

TABLE IV.

Statement showing the number of animals treated and castrated by Veterinary Assistant Surgeons on tour during the year 1940-41.

Districts.	Number of Veterinary Assistant Surgeons employed.	Number of villages visited by Veterinary Assistant Surgeons.	Castrations performed.				Treated for contagious diseases.				Treated for non-contagious diseases.				Total number of castrations performed and cases treated.
			Bovines.	Equines.	Others.	Total.	Bovines.	Equines.	Others.	Total.	Bovines.	Equines.	Others.	Total.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Vizagapatam Circle— Vizagapatam .. .. .	12	2,379	5,014	1	225	5,240	4,373	14	27	4,414	11,095	107	458	12,260	21,914
Rajahmundry Circle— East Godavari .. .. .	9	1,357	4,041	6	24	4,071	6,073	..	23	6,096	5,459	120	150	5,729	15,806
West Godavari .. .. .	5	801	2,026	2	23	2,051	2,041	..	5	2,046	3,260	28	49	3,337	7,434
Bezwada Circle— Kistna .. .. .	8	1,168	1,283	..	40	1,323	4,308	33	354	4,725	2,489	1	146	2,636	8,684
Guntur .. .. .	6	814	4,146	1	186	4,333	3,606	35	160	3,801	594	..	138	732	8,866
Nellore Circle— Nellore .. .. .	10	1,519	2,452	4	374	2,830	3,859	4	281	4,144	5,357	61	725	6,143	13,117
Cuddapah .. .. .	8	1,036	1,012	1	691	1,704	803	..	60	863	3,953	7	225	4,185	6,752
Bellary Circle— Bellary .. .. .	8	1,018	2,775	18	653	3,446	847	..	120	967	3,644	111	148	3,903	8,316
Kurnool .. .. .	9	1,035	1,532	182	430	2,144	2,847	2	183	3,032	5,361	62	289	5,712	10,888
Madanapalle Circle— Chittoor .. .. .	7	1,497	3,378	..	1,032	4,410	1,664	..	225	1,889	3,559	17	1,022	4,598	10,897
Anantapur .. .. .	6	999	1,950	4	3,325	5,279	1,334	..	6	1,340	2,492	118	215	2,825	9,444
Vellore Circle— North Arcot .. .. .	7	1,135	2,101	..	146	2,247	1,872	..	20	1,892	3,663	13	226	3,902	8,041
Salem .. .. .	6	1,233	1,431	4	323	1,758	795	1	42	838	2,968	34	130	3,132	5,723
Coimbatore Circle— Coimbatore .. .. .	8	1,659	2,311	2	1,118	3,431	617	5	32	654	6,204	138	495	6,837	10,922
The Nilgiris .. .. .	3	740	298	2	175	475	58	..	13	76	3,698	515	464	4,677	5,223

Calicut Circle—																		
Malabar ..	..	..	7	1,178	2,449	..	67	2,516	953	..	7	960	3,630	..	325	3,955	7,431	
South Kanara ..	..	..	5	783	1,936	..	239	2,175	475	..	1	476	2,494	8	267	2,769	5,420	
Madura Circle—																		
Madura ..	..	..	6	930	2,479	..	936	3,415	81	..	6	87	5,398	121	210	5,729	9,231	
Ramnad ..	..	..	4	750	1,154	..	866	2,020	70	..	1	70	3,855	9	168	4,932	6,122	
Tinnevely ..	..	..	5	909	3,840	..	630	4,470	109	..	22	131	4,490	6	205	4,701	9,302	
Trichinopoly Circle—																		
Trichinopoly ..	..	..	5	1,205	2,793	1	618	3,417	303	..	29	232	5,744	18	284	6,046	9,695	
Tanjore ..	..	..	6	1,169	2,738	2	520	3,310	409	..	2	411	4,800	17	153	4,970	8,691	
Madras Circle—																		
South Arcot ..	..	..	4	789	2,640	..	237	2,877	1,004	..	35	1,039	2,880	32	81	2,993	6,009	
Chingleput ..	..	..	5	589	1,235	..	195	1,430	1,472	..	23	1,495	4,105	13	62	4,240	7,165	
Total ..	..	..	159	26,692	57,069	230	13,073	70,372	39,873	94	1,711	41,078	101,852	1,556	6,635	110,043	222,093	
Total in 1939-40 ..	..	..	156	25,187	51,549	67	15,461	67,077	37,350	25	1,734	39,109	104,974	1,348	7,019	113,341	219,527	
Total in 1938-39 ..	..	..	154	24,769	48,450	37	15,962	64,499	35,403	30	1,872	37,310	103,349	1,743	5,803	110,703	212,512	

TABLE V-A.

Statement showing the number of approved bulls at stud in the Province of Madras during the year 1940-41.

Districts.	Number of approved bulls at stud.																Net cost for the year for issue and maintenance of stud bulls.	Population of cows over three years according to census.	Number of bulls.		Number of cows covered during the year.			
	Present on 1st April 1940.			Obtained during the year.						Casualties during the year.			Balance on hand on 31st March 1941.						Required to be maintained at 1 per 100.	Short of requirements.				
	Government.	Local bodies.	Others.	Number.			Average price paid.			Government.	Local bodies.	Others.	Government.	Local bodies.	Others.	Total.								
				Government.	Local bodies.	Others.	Government.	Local bodies.	Others.															
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
1 Vizagapatam.	..	1	4	2	5	1	..	..	..	..	1	2	2	5	3	10	RS. 819	..	..	RS. 819	295,593	2,955	2,945	558
2 East Godavari.	..	1	1	..	..	..	..	..	..	..	1	..	..	..	1	1	RS. 195	..	..	RS. 195	232,634	2,326	2,325	127
3 West Godavari	..	2	1	..	..	3	..	..	..	..	..	..	..	2	4	6	RS. 300	..	..	RS. 300	135,487	1,355	1,349	146
4 Kistna ..	..	..	2	2	1	4	..	..	..	..	..	3	2	1	3	6	RS. 200	..	..	RS. 200	139,542	1,395	1,389	178
5 Guntur including Guntur Farm.	1	..	..	2	..	..	..	..	..	1	..	..	2	..	2	2	RS. 194	..	..	RS. 194	126,459	1,265	1,263	93
6 Nellore ..	..	..	1	2	..	7	..	..	..	..	..	..	2	..	8	10	RS. 119	..	..	RS. 119	236,350	2,363	2,353	58
7 Cuddapah ..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	1	..	..	..	..	87,247	872	871	..
8 Bellary ..	..	3	..	..	..	1	..	..	..	..	2	..	..	1	1	2	RS. 150	..	..	RS. 150	109,949	1,099	1,097	96
9 Kurnool ..	1	3	2	5	..	..	..	..	..	2	..	2	4	3	..	7	RS. 438	..	..	RS. 438	97,725	977	970	299
10 Chittoor ..	1	..	5	1	2	3	..	..	..	1	..	2	1	2	6	9	RS. 615	..	..	RS. 615	317,882	3,179	3,170	248
11 Anantapur ..	..	..	6	..	1	3	..	..	..	..	..	3	..	1	5	6	RS. 479	..	..	RS. 479	146,341	1,463	1,457	357
12 North Arcot.	..	..	..	..	5	4	..	..	..	..	6	3	..	7	5	12	RS. 1,113	..	..	RS. 1,113	287,874	2,879	2,867	717

13 Salem Includ- ing Hosur Farm.	13	23	6	4	11	8	..	..	..	5	11	1	12	23	13	48	4,082	..	..	4,082	364,118	3,641	3,593	1,936
14 Coimbatore ..	8	94	21	9	38	17	..	..	..	8	49	4	9	83	34	123	6,128	..	..	6,128	291,727	2,917	2,791	7,855
15 The Nilgiris ..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	62	..	..	62	17,402	174	174	15
16 Malabar ..	5	..	..	..	..	1	..	..	..	1	..	..	4	..	1	5	970	..	..	970	320,533	3,205	3,200	249
17 South Kanara.	2	1	2	..	..	1	..	..	..	1	..	1	1	1	2	4	593	..	..	593	190,208	1,902	1,898	187
18 Madura ..	1	10	11	..	1	8	..	..	..	1	6	6	..	5	13	18	1,782	..	..	1,732	197,868	1,979	1,961	911
19 Ramnad ..	..	1	4	..	1	..	..	..	..	..	4	..	2	..	2	..	348	..	..	348	140,024	1,400	1,398	182
20 Tinnevely ..	..	2	1	..	..	2	..	..	..	..	1	..	2	2	4	2	261	..	..	261	137,594	1,376	1,372	175
21 Trichinopoly.	1	9	5	2	1	1	..	..	..	2	2	1	1	8	5	14	774	..	..	774	228,833	2,288	2,274	826
22 Tanjore ..	1	47	4	..	..	..	..	..	..	..	23	..	1	24	4	29	559	..	..	559	343,347	3,433	3,404	1,821
23 South Arcot..	..	..	1	1	3	1	..	..	..	..	..	..	1	3	2	6	320	..	..	320	363,060	3,631	3,625	45
24 Chingleput ..	..	5	..	1	..	2	..	..	..	..	1	1	1	4	1	6	245	..	..	245	186,358	1,863	1,857	56
25 Madras City..	4	..	..	..	..	1	..	..	..	1	..	..	3	..	1	4	1,576	..	..	1,576	4,463	44	40	253
Total for 1940-41.	38	210	82	31	69	69	..	..	..	23	102	36	46	177	115	338	22,292	..	..	22,292	4,998,618	49,981	49,643	17,388
Total for 1939-40.	45	199	103	24	66	43	..	..	..	31	55	64	38	210	82	330	22,031	..	..	22,031	4,081,649	40,804	40,474	17,109
Total for 1938-39.	35	145	93	21	105	43	..	..	..	11	51	33	45	199	103	347	19,309	..	..	19,309	4,081,649	40,804	40,457	12,395

NOTE.—(1) Figures for columns (8), (9), (10), (19) and (20) are not available.

(2) The table excludes particulars regarding stud bulls maintained at the Agricultural Research stations which are furnished separately.

Statement showing the number of approved bulls at stud at the Agricultural Research stations in the Madras Presidency during the year 1940-41.

Name of station.	Number of bulls on 1st April 1940.	Number obtained in 1940-41.	Average price paid for each.	Casualties in 1940-41.	Balance on hand on 31st March 1941.	Average cost of maintenance in 1940-41.	Number of cows covered in 1940-41.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			Rs.			Rs.	
Hagari ..	1	1	..	..	2	98	33
Coimbatore Central Farm ..	3	1	..	3	1	128	28
Anakapalle ..	1	..	..	..	1	97	51
Nandyal ..	2	1	..	1	2	205	31
Palur ..	2	1	125	1	2	93	59
Adutural ..	4	1	180	2	3	393	177
Pattukkottai ..	1	..	..	1	..	..	..
Koipatti ..	3	2	..	2	3	346	105
Total ..	17	7	..	10	14	1,360	484

TABLE V-B.

Statement showing the number of approved buffalo bulls at stud in the Province of Madras during the year 1940-41.

Districts.	Number of approved bulls at stud.													Net cost for the year for issue and maintenance of stud bulls.				Population of she-buffaloes over three years according to census.	Number of buffalo bulls.		Number of she-buffaloes covered during the year.			
	Present on 1st April 1940.			Obtained during the year.			Casualties during the year.			Balance on hand on 31st March 1941.				Government.	Local bodies.	Others.	Total.		Required to be maintained at 1 per 100.	Short of requirements.				
	Government.	Local bodies.	Others.	Government.	Local bodies.	Others.	Government.	Local bodies.	Others.	Government.	Local bodies.	Others.	Total.											
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
1 Vizagapatam.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	RS.	..	..	..	165,110	1,651	1,651	..
2 East Godavari.	..	..	1	..	1	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	147,474	1,475	1,474	..
3 West Godavari.	..	3	..	..	1	..	..	..	..	..	..	..	..	4	..	4	300	..	..	300	123,793	1,238	1,234	162
4 Kistna	..	..	9	..	2	8	..	..	..	..	..	5	..	2	12	14	780	..	..	780	245,780	2,458	2,444	661
5 Guntur including Guntur Farm.	3	1	..	1	..	1	..	..	..	2	..	..	2	1	1	4	342	..	..	342	351,628	3,516	3,512	274
6 Nellore	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	1	100	..	..	100	241,916	2,419	2,418	71
7 Cuddapah	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	1	..	..	..	..	154,272	1,543	1,542	..
8 Bellary	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	86,220	862	862	..
9 Kurnool	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	194,410	1,944	1,944	..
10 Chittoor	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	96,416	964	964	..
11 Anantapur	..	..	..	..	..	1	..	..	..	..	..	..	..	1	1	..	..	..	..	..	87,539	875	874	..
12 North Arcot	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	77,338	773	773	..
13 Salem including Hosur Farm.	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	1	100	..	..	100	95,751	958	957	66



14	Coimbatore	..	3	..	..	2	1	..	..	..	1	..	..	4	1	5	100	..	..	100	99,016	990	985	185	
15	The Nilgiris	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	12,082	120	120	..	
16	Malabar	..	..	..	1	..	..	..	..	..	..	..	..	1	1	81	..	..	81	36,024	360	359	41		
17	South Kanara	..	..	..	1	..	..	..	..	..	..	..	1	..	1	5	..	..	5	44,246	442	441	63		
18	Madura	..	..	..	4	..	..	..	..	..	..	2	..	2	2	223	..	..	223	81,261	812	810	201		
19	Ramnad	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	56,643	566	566	..			
20	Tinnevely	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	88,264	882	882	..			
21	Trichinopoly	..	1	..	..	..	..	..	..	..	..	1	..	1	100	..	..	100	108,588	1,086	1,085	109			
22	Tanjore	..	..	..	1	..	..	..	..	..	..	..	..	1	1	100	..	..	100	120,996	1,210	1,209	68		
23	South Arcot	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	73,794	738	738	..			
24	Chingleput	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	76,502	765	765	..			
25	Madras City	4	..	..	..	..	..	..	..	..	..	4	..	4	1,576	..	..	1,576	4,051	40	36	239			
Total for 1940-41.		7	9	17	2	6	12	..	..	..	2	1	8	7	14	21	42	3,807	..	..	3,807	2,869,164	28,687	28,645	2,140
Total for 1939-40.		9	10	20	3	5	6	..	..	..	5	6	9	7	9	17	33	1,688	..	..	1,688	2,355,272	23,541	23,508	2,334
Total for 1938-39.		7	11	15	2	3	8	..	..	..	4	3	9	10	20	39	2,643	..	..	2,643	2,355,272	23,541	23,502	2,030	

NOTE.—(1) Figures for columns (8), (9), (10), (19) and (20) are not available.

(2) The table excludes particulars regarding stud bulls maintained at the Agricultural Research Stations, which are furnished separately.

Statement showing the number of approved buffalo bulls at stud at the Agricultural Research Stations in the Province of Madras during the year 1940-41.

Name of station.	Number of bulls on 1st April 1940.	Number obtained in 1940-41.	Average price paid for each.	Casualties in 1940-41.	Balance on hand on 31st March 1941.	Average cost of maintenance in 1940-41.	Number of cows covered in 1940-41.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
						Rs.	
Coimbatore Central Farm	1	..	..	1	..	..	..
Anakapalle	1	..	..	..	1	98	75
Pattambi	1	..	..	..	1	131	66
Taliparamba	1	..	..	..	1	128	1
Kollpatti	1	..	..	..	1	115	29
Hagari	1	..	..	..	1	1	..
Total	5	1	..	1	5	471	171

TABLE V-C.

Statement showing the number of approved horse and donkey stallions at stud in the Province of Madras during the year 1940-41.

Districts.	Number on 1st April 1940.			Obtained during the year.			Casualties during the year.			Balance on 31st March 1941.			Number of mares covered.		Population of mares.	Remarks.	
	Government.	Local bodies.		Government.	Local bodies.		Government.	Local bodies.		Government.	Local bodies.		Horses.	Donkeys.			
		(2)	(3)		(4)	(5)		(6)	(7)		(8)	(9)					(10)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Coimbatore ..	..	..	..	..	..	..	..	..	..	..	..	..	81	..	1,236	9,210	..
The Nilgiris ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	225	26	..
Total ..	..	..	..	..	..	..	..	..	..	..	..	..	81	..	1,511	9,236	..
Total for 1939-40 ..	..	..	..	..	..	..	..	..	..	..	..	..	99	..	1,300	..	..
Total for 1938-39 ..	..	..	..	..	2	..	..	..	..	..	..	..	71	..	..	..	..

TABLE VI.

Abstract of particulars regarding cattle fairs and shows held during the year 1940-41 in the Province of Madras.

(1)	Total number of stock present.										Average price of animal sold.						(17)	(18)	Prize money provided.				(23)	(24)				
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	Amount realized in rupees.			Total number of animals that competed for prizes.	From Provincial funds.	From Local funds.	From other sources.			Total.	Amount actually awarded.	Number of medals awarded.	
																												Bulls.
Total for 1940-41.	59	60,660	201,407	9,055	28,146	16,003	..	150	2,970	10 to 650	25 to 350	10 to 120	15 to 100	..	150	68	1,087	300	840	410	1,350	832	5*	25†	95‡			
Total for 1939-40.	70	43,344	186,327	7,401	21,200	14,571	..	..	346	..	..	..	..	..	..	500	935	75	199	239	513	745½	20*	24†	24‡	20*	9†	9‡
Total for 1938-39.	72	74,578	214,349	12,396	25,511	7,856	100	..	2,571	..	..	..	..	..	..	4,518	597	85	220	274½	579½	301½	3†	3†	6‡	6‡	86	

\* Silver medals

† Medals.

‡ Cups.

§ Ploughs.

|| Brass vessel.

¶ Certificates.



TABLE VIII.

Statement showing the Receipts and Charges of the Civil  
Veterinary Department for 1940-41.

<i>Receipts.</i>				RS.	A.	P.
<b>XXX. Veterinary—</b>						
Veterinary College fees .. .. .				32,298	13	9
<b>Other receipts—</b>						
Rents of buildings .. .. .				2,875	8	0
Recoveries of overpayments .. .. .				186	14	0
Contribution from local bodies .. .. .				16,850	3	0
Sale of used animals in the Serum Institute .. .. .				5,885	8	0
Transfer from the deposit account of grants made by the Imperial Council of Agricultural Research .. .. .				13,195	9	8
Transfer from the deposit account of contri- butions for cattle improvement .. .. .				1,305	0	0
Livestock section receipts .. .. .				24,233	10	3
Other receipts .. .. .				20,293	10	9
<b>Total .. .. .</b>				<b>1,17,124</b>	<b>13</b>	<b>5</b>
<b>Collection of payments for services rendered—</b>						
Contribution towards leave salary of officers lent to foreign service .. .. .				4	9	0
Other receipts .. .. .				883	5	0
<b>Total .. .. .</b>				<b>887</b>	<b>14</b>	<b>0</b>
<b>Deduct—Refunds .. .. .</b>				<b>— 1,010</b>	<b>13</b>	<b>3</b>
<b>Total—Receipts .. .. .</b>				<b>1,17,001</b>	<b>14</b>	<b>2</b>
<b>Charges.</b>						
<b>41. Veterinary—</b>						
<b>a. Direction—</b>						
<b>Charged—</b>						
Pay of officers .. .. .				22,367	12	0
Deduct recoveries on account of family allotment of officers .. .. .				— 2,809	10	0
Allowances .. .. .				3,123	0	0
<b>Total—Charged .. .. .</b>				<b>22,681</b>	<b>2</b>	<b>0</b>
<b>Voted—</b>						
Pay of establishments .. .. .				21,535	8	0
Allowances .. .. .				2,165	7	0
<b>Other Charges—</b>						
Books and periodicals .. .. .				2,752	4	9
Service postage and telegrams .. .. .				1,499	8	0
Other contingencies .. .. .				4,805	1	2
Apparatus and materials .. .. .				1,780	3	0
Customs duty .. .. .				77	10	0
<b>Total—Voted .. .. .</b>				<b>34,615</b>	<b>9</b>	<b>11</b>
<b>Total—Direction .. .. .</b>				<b>57,296</b>	<b>11</b>	<b>11</b>

Statement showing the Receipts and Charges of the Civil  
Veterinary Department for 1940-41—*cont.**Charges—cont.*

	RS.	A.	P.
41. Veterinary— <i>cont.</i>			
b. Superintendence—			
Voted—			
Pay of officers .. .. .	50,831	11	0
Pay of establishments .. .. .	29,630	1	0
Allowances .. .. .	22,663	13	0
Other charges—			
Rents .. .. .	1,280	0	0
Service postage and telegrams .. .. .	7,682	7	0
Other contingencies .. .. .	4,682	10	10
Grants-in-aid .. .. .	300	0	0
Compensations .. .. .	60	0	0
Total—Superintendence .. .. .	1,17,130	10	10
c. Subordinate Establishment—			
I. Ordinary areas—			
Voted—			
Pay of establishments .. .. .	2,08,994	11	0
Allowances .. .. .	57,372	15	0
Contingencies—			
Tour charges .. .. .	6,609	7	2
Service postage and telegrams .. .. .	6,307	13	0
Other contingencies .. .. .	10,993	5	11
Purchase of sera including freight .. .. .	31,564	10	0
Total—Ordinary areas .. .. .	3,21,842	14	1
II. Partially excluded areas—			
Voted—			
Pay of establishments .. .. .	3,431	15	0
Travelling allowance .. .. .	1,086	9	0
Contingencies .. .. .	426	4	0
Total—Partially excluded areas .. .. .	4,944	12	0
Total—Subordinate Establishment .. .. .	3,26,787	10	1
d. Hospitals and Dispensaries—			
I. Ordinary areas—			
Voted—			
Pay of establishments .. .. .	1,73,857	14	0
Other charges—			
Allowances and honoraria .. .. .	4,520	8	0
Pay of menials .. .. .	46,271	7	4
Rents .. .. .	14,016	14	2
Petty construction and repairs .. .. .	3,601	2	8
Office expenses .. .. .	7,726	7	3
Service postage and telegrams .. .. .	5,190	14	6
Other contingencies .. .. .	6,792	3	10
Medicine and other hospital necessities .. .. .	30,630	2	0
Total—Ordinary areas .. .. .	2,92,607	9	9

Statement showing the Receipts and Charges of the Civil  
Veterinary Department for 1940-41—*cont.**Charges—cont.*

	RS.	A.	P.
41. Veterinary— <i>cont.</i>			
d. Hospitals and Dispensaries— <i>cont.</i>			
II. Partially excluded areas—			
Voted—			
Pay and Travelling allowance of establish- ments.	3,438	7	0
Other charges .. .. .	1,355	11	6
Total—Partially excluded areas .. .. .	4,794	2	6
Total—Hospitals and Dispensaries .. .. .	2,97,401	12	3
e. Veterinary Education and Research—			
A. Veterinary College—			
Voted—			
Pay of officers .. .. .	49,465	3	0
Pay of establishments .. .. .	32,290	5	0
Allowances and Honoraria .. .. .	5,638	0	0
Contingencies—			
Rates and taxes .. .. .	6,646	2	10
Pay of menials .. .. .	2,944	5	0
Electric current and telephone charges .. .. .	2,056	7	9
Customs duty .. .. .			
Office expenses and cleaning charges .. .. .	2,122	11	0
Scholarships .. .. .	1,564	1	0
Apparatus and materials .. .. .	11,785	14	3
Feed and upkeep of sick animals .. .. .	2,668	14	3
Maintenance of shoeing forge .. .. .	1,934	14	8
Researches, etc. .. .. .	512	9	8
Other contingencies .. .. .	4,106	13	3
Total—Veterinary College .. .. .	1,23,736	5	8
B. Veterinary Investigation—			
Voted—			
Pay of staff and other charges—			
Veterinary Investigation Officer .. .. .	5,048	6	0
Veterinary Assistant Surgeon, clerk and peon .. .. .	2,068	13	0
Travelling allowance and other compensa- tory allowances .. .. .	4,222	1	0
Other contingencies .. .. .	901	4	2
Apparatus and materials .. .. .	508	12	6
Total—Veterinary Investigation .. .. .	12,749	4	8

## Statement showing the Receipts and Charges of the Civil Veterinary Department for 1940-41—cont.

## Charges—cont.

	RS.	A.	P.
41. Veterinary—cont.			
e. Veterinary Education and Research—cont.			
C. Enquiry into the Helminthiasis of Cattle—			
Voted—			
Pay of establishment and allowances—			
Pay of establishments .. .. .	2,491	2	0
Travelling allowance and other Compensatory allowances .. .. .	142	8	0
Other charges .. .. .	387	2	4
Total—Enquiry into the Helminthiasis of Cattle .. .. .	3,020	12	4
D. Investigation into the Diseases of Poultry—			
Voted—			
Pay of establishments .. .. .	448	0	0
Allowances .. .. .	651	9	0
Other charges .. .. .	651	9	0
Total—Investigation into the Diseases of Poultry .. .. .	1,099	9	0
Total—Veterinary Education and Research ..	1,40,605	15	8
f. Other charges—			
Serum Institute—			
Voted—			
Pay of officers .. .. .	7,420	1	0
Pay of establishments .. .. .	19,483	2	0
Other charges—			
Travelling allowance and other compensatory allowances .. .. .	1,769	4	0
Electric current and telephone charges ..	2,371	7	9
Pay of menials .. .. .	7,616	10	0
Service postage and telegrams .. .. .	2,400	2	9
Other contingencies .. .. .	12,315	10	10
Livestock .. .. .	23,022	7	0
Maintenance charges .. .. .	13,628	11	0
Apparatus and materials .. .. .	8,109	2	8
Customs Duty .. .. .	....		
Total—Other charges—Serum Institute ..	98,136	11	0
g. Breeding Operations—			
A. Superintendence—			
Charged—			
Pay of officers .. .. .	17,818	5	0
Other charges—			
Travelling allowance (including cost of passages) .. .. .	2,526	11	0
Total—Charged .. .. .	20,345	0	0
Voted—			
Pay of establishments .. .. .	3,337	10	0
Other charges—			
Travelling allowance .. .. .	837	13	0
Other charges .. .. .	763	15	0
Total—Voted .. .. .	4,939	6	0
Total—Superintendence .. .. .	25,284	6	0

Statement showing the Receipts and Charges of the Civil  
Veterinary Department for 1940-41—*cont.**Charges—cont.*

	RS.	A.	P.
41. Veterinary— <i>cont.</i>			
g. Breeding Operations— <i>cont.</i>			
B. Research station—			
Voted—			
Pay of officers .. .. .	6,832	2	0
Pay of establishments .. .. .	17,159	8	0
Other charges—			
Travelling allowance and other compensatory allowances .. .. .	1,132	12	0
Petty construction and repairs .. .. .	4,599	3	9
Purchase of livestock .. .. .	216	8	0
Purchase of deadstock .. .. .	968	9	0
Repairs and upkeep .. .. .	9,730	6	10
Maintenance of cattle .. .. .	41,094	11	9
Coolie labour .. .. .	12,277	15	9
Other charges .. .. .	3,817	7	10
<b>Total—Research station</b> .. .. .	<b>97,829</b>	<b>4</b>	<b>11</b>
C. Livestock Improvement Scheme—			
Voted—			
Cattle improvement—			
Expenditure met from donations .. .. .	1,305	0	0
Scheme to assist Sugaliya .. .. .	799	15	5
<b>Total—Cattle Improvement</b> .. .. .	<b>2,104</b>	<b>15</b>	<b>5</b>
Sheep-breeding Scheme .. .. .	2,995	12	4
Other charges—			
Maintenance of cattle .. .. .	5,672	9	2
Premia for maintenance of breeding bulls .. .. .	15,884	0	0
Poultry improvement .. .. .	1,647	9	6
<b>Total—Other charges</b> .. .. .	<b>23,204</b>	<b>2</b>	<b>8</b>
<b>Total—Livestock improvement scheme</b> .. .. .	<b>28,304</b>	<b>14</b>	<b>5</b>
D. Other charges—			
Voted—			
Grants-in-aid—			
Grants to Agricultural Associations, Exhibition Committees, etc. .. .. .	834	14	3
Contributions to local bodies for purchase and maintenance of breeding bulls .. .. .	2,240	0	0
Contribution to the American Arcot Mission for Poultry Improvement .. .. .	228	0	0
<b>Total—Other charges</b> .. .. .	<b>3,302</b>	<b>14</b>	<b>3</b>



Statement showing the Receipts and Charges of the Civil  
Veterinary Department for 1940-41—*cont.**Charges—cont.*

	RS.	A.	P.
41. Veterinary— <i>cont.</i>			
g: Breeding operations— <i>cont.</i>			
E. Milk-recording Scheme—			
Voted—			
Pay of Establishments .. .. .	324	3	0
Other Charges .. .. .	64	2	0
Total—Milk-recording Scheme ..	388	5	0
Total—Breeding Operations ..	1,55,109	12	7
h. Charges in England—			
A. Leave Salaries and Deputation pay—			
Charged .. .. .			..
Voted .. .. .			..
Total—Leave Salaries and Deputation Pay ..			..
B. Charged—			
Sterling Overseas Pay .. .. .	5,777	12	3
C. Voted—			
Stores for India .. .. .	310	12	6
D. Charged—			
Allotment of Pay of Officers .. .. .	2,000	0	0
Total—Charges in England ..	8,088	8	9
j. Loss or gain by exchange—			
Charged—			
A. Other than on stores .. .. .			13 8 7
Voted—			
A. Other than on stores .. .. .			..
B. Stores .. .. .			0 8 7
Total—Loss or gain by exchange ..			14 1 2
Total—Veterinary ..	12,00,571	14	3

TABLE IX.  
Strength of staff employed and how they are distributed during the year ending 31st March 1941  
in the Province of Madras.

*Gazetted staff.*

Head of the department.	Teaching staff.	In charge of Livestock work.	Executive officers in charge of districts.	In charge of the Serum Institute.	Veterinary Investigation Officer.	Veterinary Research Officer.	Supernumerary post.	Total strength.
1	8	3*	12	1	1	1	1	28

*Non-Gazetted staff.*

Veterinary Assistant Surgeons in charge of Veterinary Institutions.	Leave reserves both permanent and temporary.	Veterinary Assistant Surgeons attached to the office of the Director of Veterinary Services, Madras.	Employed in the Madras Veterinary College.	Employed in the Serum Institute.	Employed in the Agricultural and Forest Departments.	Employed for Livestock work.	Employed under the Imperial Council of Agricultural Research Schemes.	Special Veterinary Assistant Surgeons.	Veterinary Assistant Surgeons on propaganda work (in charge of vans).	Total strength.
121	35	25	13	11	4	4	4	3	3	352
							(1 Vacant)			

\* (Including Inspector of Livestock in the Forest Department.)



MADRAS CIVIL SUPPLY DEPARTMENT		MADRAS CIVIL SUPPLY DEPARTMENT	
Year	Month	Year	Month
1901	Jan	1901	Jan
1901	Feb	1901	Feb
1901	Mar	1901	Mar
1901	Apr	1901	Apr
1901	May	1901	May
1901	Jun	1901	Jun
1901	Jul	1901	Jul
1901	Aug	1901	Aug
1901	Sep	1901	Sep
1901	Oct	1901	Oct
1901	Nov	1901	Nov
1901	Dec	1901	Dec
1902	Jan	1902	Jan
1902	Feb	1902	Feb
1902	Mar	1902	Mar
1902	Apr	1902	Apr
1902	May	1902	May
1902	Jun	1902	Jun
1902	Jul	1902	Jul
1902	Aug	1902	Aug
1902	Sep	1902	Sep
1902	Oct	1902	Oct
1902	Nov	1902	Nov
1902	Dec	1902	Dec
1903	Jan	1903	Jan
1903	Feb	1903	Feb
1903	Mar	1903	Mar
1903	Apr	1903	Apr
1903	May	1903	May
1903	Jun	1903	Jun
1903	Jul	1903	Jul
1903	Aug	1903	Aug
1903	Sep	1903	Sep
1903	Oct	1903	Oct
1903	Nov	1903	Nov
1903	Dec	1903	Dec

8

# Government of Madras

## DEVELOPMENT DEPARTMENT

**G.O. No. 1966, 27th October 1941**

Administration report—Veterinary department—1940—41—  
Recorded.

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READ—the following paper :—

From the Director of Veterinary Services, dated 8th August 1941,  
No. 2452-II/41.

**Order—No. 1966, Development, dated 27th October 1941.**

Recorded.

2. The report has been presented in the revised form approved by the Government in March last. Some of the tables appended to the previous reports which contained unnecessarily elaborate statistics have been modified and some others which were superfluous have been omitted. Information has been incorporated for the first time in regard to the trade in livestock and livestock products.

3. There was a decrease in the number of admissions to the Madras Veterinary College during the year and the fall has been more marked in the selection made in July 1941. The Government view with some concern the progressive decline in the number seeking admission to the college. They have obtained a report on this subject from the Director. It is under their consideration.

4. Cattle mortality from contagious diseases increased during the year. With the exception of a few districts in the south, rinderpest prevailed throughout the Province and contributed largely to the increase in the mortality among cattle. It has been found difficult to prevent outbreaks of this disease owing to the migration of cattle from infected areas in the neighbouring Provinces and States. Proposals for improving the existing system of exchanging information regarding outbreaks of contagious diseases between this Province and the neighbouring States and Provinces are now under the consideration of Government.

5. The Government note with interest the satisfactory results obtained by administering sterilized bone meal to cattle suffering from chronic Rheumatic Arthritis. They have since ordered the publication of a separate and fuller report on the subject.

6. Besides giving magic lantern lectures to villagers on veterinary subjects, the touring staff gave practical demonstrations in the treatment of cattle. Interior villages received adequate attention.

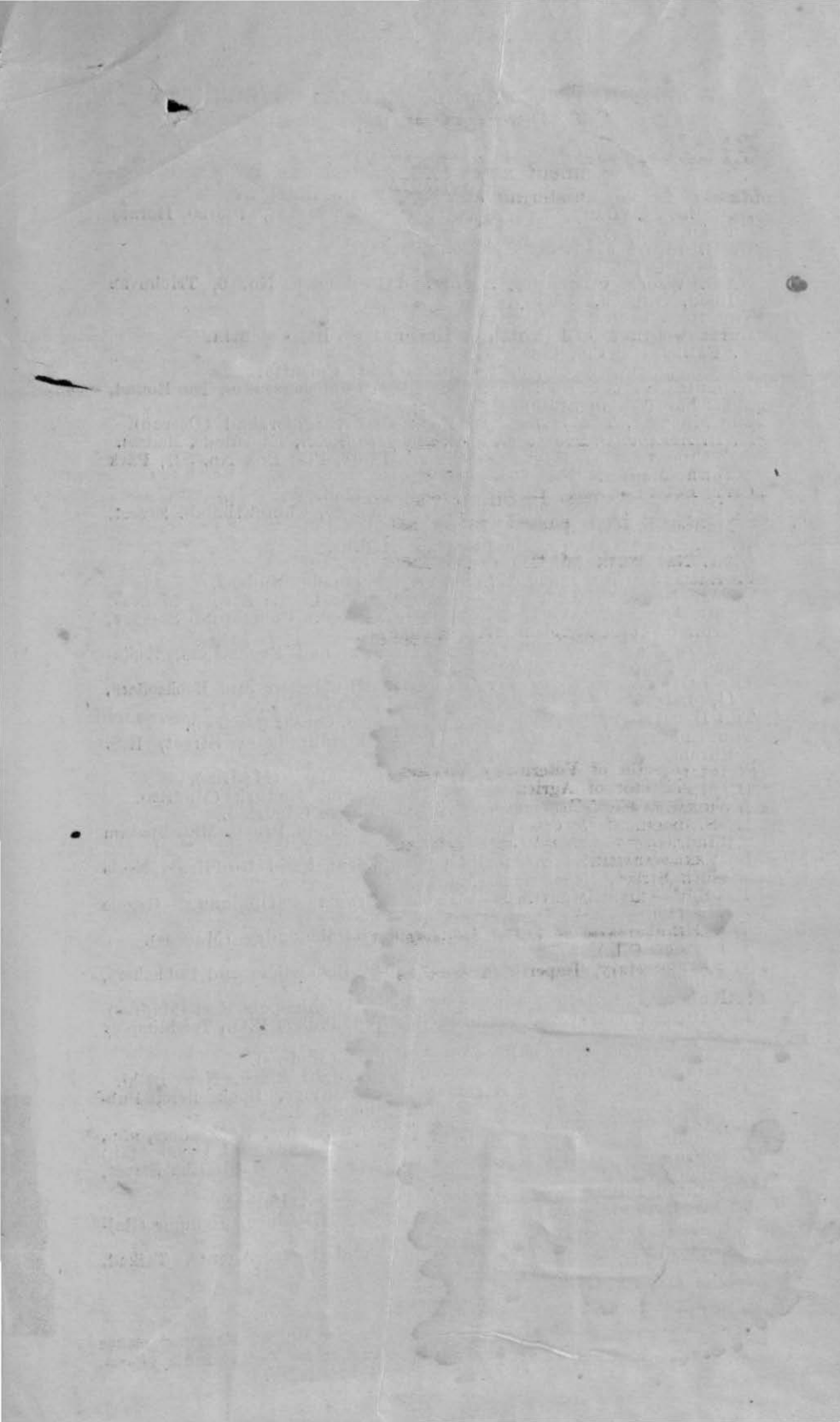
7. The Provincial Livestock Improvement Board held its second meeting in August 1941. The scheme submitted by the Director for utilizing the sum of Rs. 50,000 set apart from the rural reconstruction grant of the Government of India for the improvement of livestock in this Province was approved by the Board. The Government have passed orders sanctioning the scheme.

8. The work of the department during the year was satisfactory.

(By order of His Excellency the Governor)

C. P. KARUNAKARA MENON,  
*Secretary to Government.*

To the Director of Veterinary Services.  
 ,, the Director of Agriculture.  
 ,, the Accountant-General.  
 ,, the Board of Revenue.  
 ,, the Surgeon-General, through the Education and Public Health Department.  
 ,, all Collectors.  
 ,, 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.  
 Press.



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