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(Composite State).

(1st April to 30th September 1953)

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## ADMINISTRATION REPORT OF THE MADRAS ANIMAL HUSBANDRY DEPARTMENT FOR THE YEAR 1953-54 (1st APRIL TO 30TH SEPTEMBER 1953) (COMPOSITE STATE).

### I. GENERAL.

#### LIVESTOCK.

**Farms.**—The rainfall recorded, the fodder production and the availability of grazing may be considered to have improved in most of the farms during the period under report, compared to last year.

The production of fodder from irrigated lands continued to be satisfactory, enough water being available in the wells and tanks. As much area as possible was left under pasture. All possible steps were taken to improve the recently opened farms though many facilities are yet to be provided for the farms. Suitable measures were taken to prevent soil erosion in some of the livestock farms where such steps were necessary.

During the period under report 38 breeding bulls were issued for stud purposes. One thousand four hundred and twenty-seven approved breeding bulls of different breeds were at stud during the half year and the number of services performed by them was 51,283. In addition, 7,667 artificial inseminations were done. Out of 14,847 calves born to these breeding bulls, 9,671 calves were inspected. Assuming a monetary appreciation of Rs. 20 per calf, Rs. 2,96,940 is the value of the improved stock realized in shape of cash to the ryots.

The Key Village Scheme which is a part of the Five-Year Plan though in its infancy, is playing an important role in our livestock improvement plans with full co-operation from the public. It is in its first stage of development, i.e., the establishment of key village with suitably located approved bulls, compulsory castration of the existing scrub bulls and the protection of the whole cattle population in the compact areas selected against contagious diseases. There were 20 key villages and 6 key farm centres in private institutions working in the State during the period. Eighty-seven bulls were stationed in the above key villages and centres. Two thousand three hundred and eighty-five artificial inseminations were done besides 1,333 natural services performed by the bulls. In a complicated Scheme of this kind, it is too short a period for reviewing the progress.

**The salvage farm** at Kambakkam Kancha continued to be popular. One hundred and nineteen cows were salvaged during the period and returned to their owners. The area under Australian drought resistant grass was extended and the grass has been well established in the farm.

**Artificial insemination** stations continued to function in all the five centres and they are becoming popular. There were a number of cases in which cows that had not conceived through natural services were successfully inseminated. The staff inspected 542 calves born through artificial inseminations. These centres are expected to atone for the shortage of pedigree breeding bulls in the State.

The Village Livestock Improvement Associations continued to do good work. A large number of unwanted malestock were castrated within the areas of these associations and all the cattle were protected against the total contagious diseases. With a view to gradually build up herd books for these areas all the breedable stock in the areas are registered and the performances, service and calving particulars recorded. The Ongole Cattle Breeder's Association has enlisted 130 breeders as new members thus bringing their total membership to 581. Besides, livestock improvement work was continued for the nomadic Sugalis, Hill Tribes and Koyas.

The sheep Farm at Ootacamund continued to work satisfactorily. A small wool analysis laboratory was started at Ootacamund. All the six sheep shearing and demonstration units continued to function. Demonstrations on the improved methods of washing, shearing, grading of wool, etc., and propaganda regarding scientific management and breeding of sheep and goats were carried out. In addition demonstrations on deworming and deticking were done in 12 selected centres. Three seed farms for improving the Bellary breed of sheep in Anantapur district were sanctioned and a loan of Rs. 2,500 each was also sanctioned to three individuals.

The work done in the poultry farms and the demonstration units in veterinary institutions shows that during the period under report more than 50 per cent of the eggs were sold or utilized for hatching purposes. Moreover 2,603 birds were sold for breeding purposes. Vaccinations in a large-scale were done against Ranikhet disease by the preventive staff. In the Poultry Research Station, Teynampet, Madras, a strain of indigenous birds showing an all round improvement has been evolved by selective breeding. It is seen from the large number of private poultry farms and units that the poultry extension work is well received in the State.

The livestock development work has continued to advance during the period also though it could have been much more spectacular but for the lack of sufficient finance. This period under report was also passed with no advances being made on the various proposal put forth for the opening of touring billets, veterinary institutions, providing elementary amenities as electricity to veterinary institutions, replacing the rented buildings that are so poor in use by the departmental buildings and providing better facilities for raising the general standard of professional service. Livestock improvement and the problem of control and eradication of animal diseases constituted the main activities of the department during the period also as in the previous years.

**Rinderpest.**—During the period under report there were 445 reports with 2,574 deaths. The control over the disease is in so small measure due to planned intensive campaign of the preventive measures launched during the two previous years and continued during the period also, in the light of the experience of its 10-year periodicity of the past. Two lakhs two thousand four hundred and thirty-two animals were protected against the disease in the free areas alone. Except for 2 stray outbreaks the disease was completely absent in the southern districts of the State. To consolidate our position it is necessary to maintain a Veterinary Animal Health Intelligent service and prevent the disease passing unnoticed. This will be possible only with an increase in strength of Veterinary Assistant Surgeons and office cadre and the opening of more touring billets and veterinary institutions.

The Veterinary Health Service consisting of veterinary institutions, minor veterinary dispensaries and itinerating staff continued to serve our farmers and stock owners during the period. One lakh seventy-two thousand two hundred and twenty-three both in and out-patients were treated, 28,335 castrations were performed. One lakh thirty-six thousand and sixty-seven contagious and non-contagious cases were treated and 38,089 castrations were done by the itinerating staff at the Minor Veterinary Dispensaries and on tour during the period under report.

**Veterinary Biological and Research Institute, Ranipet.**—The institute continued to manufacture and release large quantities of the biologicals for immunisation against rinderpest, black quarter and haemorrhagic septicaemia. In addition products for prophylaxis against sheep-pox, Bovine lymphangitis, fowl-pox and fowl cholera were manufactured.

**Research.**—Experimental work was carried out on adopting the laboratory strain of rinderpest, bovine virus to the local rabbits, preparation of an adjuvant vaccine for haemorrhagic septicaemia and the preparation of Anthrax Spore vaccine in the institute. The scheme to improve the Black Quarter vaccine was taken up during the period.

The Veterinary Expert of Food and Agricultural Organization, Mr. G. G. Alton continued his work in the institute till 19th August 1953, when he left after completing his period of assignment. Two research microscopes, a vacuum pump, a vacuum gauge, a universal thermostatic water bath and a few other minor equipments were received from the Food and Agricultural Organization, for use in the institute. The freeze dried rinderpest vaccine (powder) was issued in large quantities to different parts of the State for experimental trial in the field and was found to be quite good in combating outbreaks of rinderpest.

**Veterinary education.**—The Madras Veterinary College admitted 78 students for the B.V. Sc. Course during the period under report. The admissions to the Veterinary and Livestock Inspectors' course were suspended during the period as the continuance of the course was abolished. However, the classes for the second year were held for the 41 students already under study.

**Post-graduate refresher course.**—This is the fourth year since this course was revived and a batch of 7 Veterinary Assistant Surgeons completed their training during the period.

**Playing course.**—Twelve Veterinary Assistant Surgeons and 60 professional flayers in Madras and 40 persons in mufassal have to be trained yearly in flaying at the Madras Veterinary College.

The standards of education in the College continued to be maintained at the high levels attained in the past. During the period under report 31 students took the B.V.Sc. Degree while 39 students passed the final examination of Veterinary and Livestock Inspector's course.

Three staff members completed their research and submitted their thesis for the Ph. D. & M.Sc. degrees of the Madras University. Two more students are pursuing research in Bacteriology and Genetics.

The discipline of the students in the College hostels continued to be good.

The College took part in the Inter-collegiate competitions and put up a fairly good performance. One of the students of this College was selected to represent the University for the third year in succession in football and another was selected for the University hockey team.

The temporary lecture hall of the Veterinary and Livestock Inspector's course was converted into a small animals clinic with necessary additions and alterations. The sinking of a well and the construction of a R.C.C. overhead reservoir with pumping set and alterations to the injection room of the Anatomy department were in progress. The construction of overhead tank and engine room was completed at the hostel in the Hosur Cattle Farm.

The indoor and outdoor clinics attached to the Madras Veterinary College attracted an average daily attendance of 126 and treated 6,434 cases in the period under report as against an average daily attendance of 120 during the year 1952-53. A sum of Rs. 7,968-9-6 was realized towards fees during the period.

The number of specimens received from all over the State, Local Bodies and Departments of Agriculture, Forest and Co-operative during the period for examination in the Departments of Bacteriology, Pathology, Parasitology and Clinical Laboratory was 7,240.

The Ranikhet disease vaccine section manufactured 300,000 doses of vaccine. As many as 278,000 doses were issued to this State for use in the field and 50,000 doses to the neighbouring States.

All the departments of the College continued to undertake various problems for research in addition to their main duties of teaching and contributed valuable scientific publications in the period under report. Three distinguished experts visited the College during the period under report.

**Veterinary Public Health Services.**—Eight municipalities engaged their own whole time Veterinary Assistant Surgeons and seventy-two local bodies utilized the services of the staff of this Department for meat inspection work. The

departmental staff inspected 29,606 cattle, 390,949 sheep, 251,488 goats and 2,757 pigs ante-mortem and condemned 1,936 cattle, 12,537 sheep, 10,024 goats and 8 pigs. They also confiscated and condemned 21,447 carcasses in part or whole as unfit for human consumption.

The figures furnished in the report relate only to six months and they cannot be compared with the figures (for the whole period) of the last year for purposes of review.

## II. STAFF.

### ADMINISTRATION.

1. During the period under report I continued to hold the post of the Director of Animal Husbandry, Madras State. I attended the Sixth Meeting of the State Soil Conservation Board held at Ootacamund and the Southern Regional Committee meeting of the Indian Council of Agricultural Research on Animal Husbandry side held at Hyderabad.

I was assisted by Sri Bertie A. D'Souza, Deputy Director of Animal Husbandry (Veterinary), on all matters relating to administration other than Livestock of the State. He inspected 19 veterinary institutions, 26 minor veterinary dispensaries and three touring billets. He also inspected four District Veterinary Offices in the State. He visited the scenes of various epizootics, checked the efficiency of preventive measures, and operations for the arrest of diseases and for reducing the incidence of mortality among livestock. The work in progress in all the outlying institutions and in the field was checked and detailed instructions were issued wherever necessary to make available an efficient Veterinary Health Service to the Farmers. He was deputed to enquire into the sheep mortality at the Combined Cattle and Sheep Farm, Kurukuppi and suggest preventive measures.

The work of the District Officers and the Subordinate Officers continued to be efficient, their tours adequate and effective, in the control of epizootics and livestock development work.

2. *Gazetted staff.*—The sanctioned strength of the Gazetted Officers in the department was 69 at the beginning of the period excluding the post of the Lecturer in Bacteriology, Madras Veterinary College, which was held by the Principal, Madras Veterinary College.

3. No new gazetted posts were sanctioned and filled during the period under report. The post of the special officer in the grade of the Deputy Collector was continued for a further period up to 31st December 1954 and Sri R. R. Visuvasam, B.A., Deputy Collector continued to hold charge of the post during the period. Thus there were 70 Gazetted Officers on the roll of this department on 30th September 1953 including the post of the Lecturer in Bacteriology, Madras Veterinary College, held by the Principal, Madras Veterinary College.

4. *Other staff.*—The sanctioned strength of the Veterinary Assistant Surgeons on 30th September 1953 was 486 as detailed in Table IX as against 490 of the previous year.

## III. EDUCATION.

### MADRAS VETERINARY COLLEGE.

5. *Courses of study.*—The B.V. Sc. Degree Course and the Refresher Course were continued in the Madras Veterinary College during the period under report. The admission of the students to the Veterinary and Livestock Inspectors' Course was suspended.

6. (a) *B.V. Sc. Degree course—Admission.*—The number of students admitted to the B.V.Sc. Degree Course of this College was restricted to 80 for the year 1953–54. These 80 seats were distributed as follows:—

|                                                                                                                  |    |
|------------------------------------------------------------------------------------------------------------------|----|
| For students from foreign countries                                                                              | 6  |
| For students from States other than Madras State                                                                 | 7  |
| For students whose parents or guardians are Central Government Officers serving, but not domiciled in this State | 2  |
| For demobilised personnel                                                                                        | 2  |
| For women                                                                                                        | 3  |
| For men students of Madras State                                                                                 | 60 |
| Total                                                                                                            | 80 |

The Committee that selected students for admission to the B.V. Sc. Degree course was reconstituted.

The Committee, unlike in the previous year, interviewed all the candidates at the Madras Veterinary College to enable expeditious selection and admission of students.

For the purpose of selection, the composite Madras State was divided into four regions, viz., (1) Coastal Andhra, (2) Rayalaseema, (3) Tamil districts, and (4) West Coast; and the students were divided into three categories, viz., (1) Scheduled Castes and Scheduled Tribes, (2) Backward Classes and (3) Others.

Twenty-five per cent of the seats available for the students of the Madras State was reserved for candidates belonging to the Backward Classes and 15 per cent for candidates belonging to the Scheduled Castes and Scheduled Tribes. Apart from these reservations, the students belonging to these two categories were allowed to compete with others and get seats on the basis of merit.

The total number of applications received this year was 153 as against 248 of last year. The smaller number of applications this year may be due to the levy of annas eight per application form and prospectus and the stoppage of award of scholarships to 'Others'.

The distribution of selection of candidates for admission to the Madras Veterinary College on the above principle is as hereunder:—

| Regions.        | Scheduled castes and scheduled tribes. | Backward classes. | Others. | Total. |
|-----------------|----------------------------------------|-------------------|---------|--------|
| Coastal Andhra  | ..                                     | 11                | 38      | 49     |
| Rayalaseema     | ..                                     | 3                 | 28      | 31     |
| Tamil districts | ..                                     | 15                | 46      | 61     |
| West Coast      | ..                                     | ..                | 12      | 12     |
| Total           | ..                                     | 29                | 124     | 153    |

All the applicants were called for interview, but only 119 appeared.

There were no applications either from women candidates or demobilised personnel for admission this year.

The seven seats reserved for candidates coming from States other than Madras were distributed as follows:—

|                     |    |    |    |    |   |
|---------------------|----|----|----|----|---|
| 1 Coorg             | .. | .. | .. | .. | 1 |
| 2 Travancore-Cochin | .. | .. | .. | .. | 2 |
| 3 Kashmir           | .. | .. | .. | .. | 2 |
| 4 Orissa            | .. | .. | .. | .. | 2 |
| Total               | .. | .. | .. | .. | 7 |

The Kashmir Government nominated only one candidate against the two seats reserved for them but even this candidate had to leave the college subsequently, as he was not eligible for admission being below the minimum age prescribed. The other States fully availed of the reservations made for them.

Thus in all 78 students inclusive of 69 students of the Madras State were admitted to this course this year.

The distribution of the 69 students of the Madras State on regional and categorywise are shown hereunder :—

| Regions.             | Scheduled castes and scheduled tribes. | Backward classes. | Others. | Total. |
|----------------------|----------------------------------------|-------------------|---------|--------|
| 1 Coastal Andhra ..  | ..                                     | 1                 | 21      | 22     |
| 2 Rayalaseema ..     | ..                                     | 1                 | 8       | 9      |
| 3 Tamil districts .. | ..                                     | 8                 | 24      | 32     |
| 4 West Coast ..      | ..                                     | ..                | 6       | 6      |
| Total ..             | ..                                     | 10                | 59      | 69     |

(b) *Veterinary and Live-stock Inspectors' course.*—Under the instructions of Government in G.O. No. 2511, Development, dated 29th May 1953, admission of students to this course was discontinued during the year under report. However, classes for the second year were continued for the 41 students already under training.

(c) *Post-graduate refresher course.*—This was the fourth year since this course was revived and the first batch of 7 students for the period under report completed their training.

(d) *Flaying course.*—Twelve Veterinary Assistant Surgeons and 60 professional flayers (both butchers and new recruits in Madras and 40 men (both butchers and new recruits) in mufassal have to be trained annually in the Flaying School at the Madras Veterinary College and the mufassal respectively.

As ordered by the Government in their Order Ms. No. 3243, Development, dated 13th July 1953, the Lecturer and the Assistant Lecturer in Flaying were sent for training for a period of two months under the Food and Agricultural organization expert, Mr. F. H. Hook at the Hide Flaying and Curing Centre, Bakshi-ka-talab, Lucknow, U.P., and they reported for training on 22nd August 1954.

Before they left for the aforesaid training, they delivered lectures in Scientific flaying and held practical classes for the first batch of post-graduate refresher course students under training from 1st August 1953. The starting of this scheme was entirely a new line of thought and approach for the advancement of hides and skins industry.

7. *Strength—Examinations*—(a) *B.V. Sc. Degree course.*—The results of the B.V. Sc., examinations held in April, May and June 1953 are shown below :—

| B.V. Sc.                 | Number appeared. |           | Number passed. |           |
|--------------------------|------------------|-----------|----------------|-----------|
|                          | Whole.           | By parts. | Whole.         | By parts. |
| Preliminary .. ..        | 78               | 5         | 39             | 4         |
| Intermediate, Part I ..  | 73               | 13        | 19             | 11        |
| Intermediate, Part II .. | 66               | 23        | 18             | 20        |
| Final .. ..              | 57               | 17        | 17             | 14        |

(b) *Veterinary and Livestock Inspectors' course.*—The following were the results of the examinations held in June 1953 for the Veterinary and Livestock Inspectors' Course.

|               | Number appeared. |    | Number passed. |
|---------------|------------------|----|----------------|
| I year .. ..  | ..               | 41 | 24             |
| II year .. .. | ..               | 47 | 39             |

(c) During the period under report, 31 students took the B.V. Sc. Degree, while 39 students passed the final examination of the Veterinary and Livestock Inspectors' Course.

8. *Scholarships.*—(a) In supersession of all previous orders, Government in their Order Ms. No. 3280, Development, dated 15th July 1953, restricted the number of scholarships to be awarded to the students of the B.V. Sc. degree course in future to 5. Of these 5 scholarships, 3 should be given to candidates belonging to the scheduled castes and the remaining 2 to candidates belonging to scheduled tribes. In case sufficient number of candidates belonging to scheduled castes and scheduled tribes are not forthcoming in any year, the available scholarships are to be given to students of the backward classes enumerated in Appendix 17-A of the Madras Educational Rules. The value of the scholarship is Rs. 40 per mensem for each candidate.

(b) There being no Harijan candidate, all the 41 students studying in the II year class of the Veterinary and Livestock Inspectors' Course were paid a stipend of Rs. 30 each per mensem.

9. *Practical Training.*—The students of the I, II and IV year classes of the B.V. Sc. degree course were given the requisite practical training in Animal Husbandry at the Livestock Research Station, Hosur and the III year B.V. Sc. students received their training at the Dairy-cum-Bull Farm, Visakhapatnam. The students of the III and IV year classes were also given practical training in the different clinics and laboratories of the College, slaughterhouses and other places of educative interest during the period under report.

During the period under report, the students of the II year class of the Veterinary and Livestock Inspectors' Course were divided into batches and posted in turns for practical training in different sections of the Livestock Research Station, Hosur.

10. *Post-graduate Research and Investigation.*—The student who was awarded studentship of the Madras University last year, pursued his researches on the Bacteriology of Bovine Lymphangitis this year, and he, having finished his studentship, joined the Indian Army as a Commissioned Officer. Another Post-Graduate Student who was awarded studentship by the Madras University this year was pursuing research in Animal Genetics. Two more honorary post-graduate research students, were also admitted to take up research in the subjects of Bacteriology and Genetics respectively.

Three staff members completed their research in the subjects mentioned hereunder and submitted their thesis for the Ph.D. and M. Sc. Degrees of the Madras University.

*Ph. D. Degree.*—Staining techniques of spermatozoa.

*M. Sc. Degree.*—(1) Studies on Surra in Madras.

(2) Haematological studies in domestic animals with special reference to Rinderpest.

Two more members of the staff sent in their applications for registering their names for M. Sc. Post-graduate degree of the Madras University in Bacteriology and Pharmacology.

11. *Hostel, health and athletics*—(a) *Hostel in Madras for the B.V. Sc. Degree Course.*—Hostel accommodation for 228 students was provided in the main buildings and the S.P.C.A. annexed during the period under report of whom five were students and the S.P.C.A. annexed during the period under report of whom five were students from foreign countries, one from Iraq, one from Philippines, two from Malaya and one from Burma. As usual, two messes—one vegetarian and the other non-vegetarian continued to function, and the average monthly charges ranged from Rs. 40 to Rs. 45. The telephone was utilized by the students to a great extent and the radio continued to function satisfactorily. Amenities provided for indoor games such as Carroms, Chess, Table-Tennis and outdoor games such as Ring-tennis, Badminton and Volley-ball were availed of by the students.

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(b) *Hostel in Hosur Cattle Farm for the Veterinary and Livestock Inspectors' Course.*—A vegetarian mess was run by the students on dividend system under the guidance and control of the Additional Lecturer.

(c) The discipline of the students in both the hostels was good.

12. *Health—Medical inspection—Athletics.*—Sri I. D. Mantramurthi, Lecturer in Hygiene, continued to be the Sports Secretary for the period under report. The College took part in the Inter-Collegiate competitions and gave a good account of themselves. One of the students was selected to represent the University for the third year in succession in Football and another was selected for the University Hockey XI this year.

Considering the very small number of students and the strenuous nature of studies, it is a matter for gratification that the Veterinary College has been represented in these University teams.

13. *Miscellaneous—(a) Association.*—The Madras Veterinary College Association kept up the traditions set up in the previous years and continued to play an important role in the extra-curricular activities of the students of the College. During the period under report, the Association took part in the Inter-collegiate debates conducted by the University of Madras in Telugu, Tamil and English. It also participated in the Inter-Collegiate Dramatic contests conducted by the City Colleges and also in the fortnightly Quiz programme of the All-India Radio, Madras. It continued to do social service work in the nearby slums. The inaugural address of the Association was delivered by Sri T. Chongalvarayan, the then Mayor of Madras. Under the auspices of the Association, the Independence Day was celebrated on the 15th August when the Principal, Madras Veterinary College, unfurled the National Flag and addressed the staff and students. A reception to the new graduates of the year was given on 20th September 1953 on which occasion, the then Minister for Agriculture, addressed the new graduates, with the Principal, presiding. A paper on 'Distemper and Allied Diseases' was read by a student of the IV Year Class.

(b) *Building.*—The temporary lecture hall of the Veterinary and Livestock Inspectors' Course was converted into a small animal clinic with necessary additions and alterations and was occupied during the period under report.

The sinking of a well and the constructions of a R.C.C. overhead reservoir with pumping set and alterations to the injection room of the Anatomy Department were in progress. The constructions of the overhead tank and the engine room were completed at the hostel in the Hosur Cattle Farm. The pipe connections to the overhead tank and the hostel remained to be completed.

(c) *Students' bus.*—The College bus was fully utilized by the students for their visits in connection with the curricular and extra curricular activities both within and outside the City.

(d) *Visiting Committee.*—The question of reconstitution of the Board of Honorary Visitors was under consideration.

(e) *Visitors.*—Among other notable visitors of the College, Dr. Lundgren of the World Health Organization, Medical Team, Sri C. N. Chak, Deputy Educational Advisor, Ministry of Education, Government of India and Sir Thomas Dalling, Past President, Royal College of Veterinary Surgeons, London and now Chief Veterinary Consultant, Food and Agricultural Organization, Rome, visited the College during the period under report.

(f) *Inspection of Police animals.*—The quarterly inspection of the City Police horses was conducted as usual. Necessary professional treatment and advice were given for the care and management of police horses and dogs.

(g) *Professional papers contributed.*—The following papers were contributed by the members of the staff of the College during the period under report :—

*Biology.*—Faeces as test material for pregnancy diagnosis in mammalia for publication in Indian Veterinary Journal.

*Anatomy.*—(1) Palm-prints and Finger-prints of conjoined twins for publication in the proceedings of Indian Academy of Science, Bangalore.

(2) Cleftpalate and Harelip in double monsters.

*Parasitology.*—A case of "Leucocytozoon" infection in a desi fowl in Madras.

(h) *Committees.*—The Lecturer in Animal Nutrition was appointed as a member of the Animal Nutrition Committee, working under the auspices of the Indian Council of Agricultural Research and the Madras State Government were pleased to permit him to serve on the above Committee for a period of 3 years.

14. *Hospital.*—The cases treated and operations performed for the years 1951-52, 1952-53 and for the period under report are tabulated below :—

TABLE I.—Cases treated.

|                             | 1951-52. | 1952-53. | 1953-54.<br>(from 1-4-1953 to<br>30-9-1953). |
|-----------------------------|----------|----------|----------------------------------------------|
| In-patients—                |          |          |                                              |
| Bovines .. .. .             | 130      | 241      | 95                                           |
| Equines .. .. .             | 73       | 71       | 37                                           |
| Canines and others .. .. .  | 442      | 489      | 209                                          |
| Out-patients—               |          |          |                                              |
| Bovines .. .. .             | 3,073    | 4,035    | 2,211                                        |
| Equines .. .. .             | 175      | 154      | 101                                          |
| Canines and others .. .. .  | 4,775    | 6,356    | 3,781                                        |
| Total ..                    | 8,668    | 11,346   | 6,434                                        |
| Daily average attendance .. | 95.9     | 120.9    | 126.0                                        |

TABLE II.—Operations.

|                            | 1951-52. |        | 1952-53. |        | 1953-54 (1-4-53 to<br>30-9-53). |        |
|----------------------------|----------|--------|----------|--------|---------------------------------|--------|
|                            | Major.   | Minor. | Major.   | Minor. | Major.                          | Minor. |
| Bovines .. .. .            | 270      | 30     | 264      | 26     | 142                             | 39     |
| Equines .. .. .            | 18       | 4      | 16       | 11     | 5                               | 3      |
| Canines and others .. .. . | 21       | 123    | 14       | 242    | 8                               | 136    |
| Total ..                   | 309      | 157    | 294      | 279    | 155                             | 178    |

TABLE III.—Castrations.

|                            | 1951-52. | 1952-53. | 1953-54.<br>(1-4-53 to 30-9-53). |
|----------------------------|----------|----------|----------------------------------|
| Bovines .. .. .            | 9        | 19       | 4                                |
| Equines .. .. .            | 4        | 11       | ..                               |
| Canines and others .. .. . | 22       | 27       | 13                               |
| Total ..                   | 35       | 57       | 17                               |

Conversion of the temporary Lecture hall of the Veterinary and Livestock Inspectors' Course into a small animal clinic has partially met the requirements of an ideal clinic that was absent.

The appointment of a hospital clerk has relieved the professional staff working in the small animal clinic of much clerical work enabling them to devote sufficient attention to the professional side.

The following table shows the medical and surgical cases treated in the wards of the hospital during the period under report:—

| (1)<br>Medical cases.                      | Bovines.<br>(2) | Equines.<br>(3) | Others.<br>(4) | Total.<br>(5) |
|--------------------------------------------|-----------------|-----------------|----------------|---------------|
| Contagious diseases .. .. .                | 7               | 1               | 295            | 303           |
| Protozoan diseases .. .. .                 | 22              | 1               | 175            | 198           |
| Diseases of the respiratory system .. .. . | 56              | 7               | 51             | 114           |
| Do. digestive system .. .. .               | 921             | 22              | 1,568          | 2,511         |
| Do. circulatory system .. .. .             | 2               | ..              | 36             | 38            |
| Do. urinary system .. .. .                 | 5               | 1               | 10             | 16            |
| Do. nervous system .. .. .                 | 5               | ..              | 108            | 113           |
| Do. generative system .. .. .              | 62              | ..              | 39             | 101           |
| Do. locomotor system .. .. .               | 4               | ..              | 50             | 54            |
| Do. skin (parasitic) .. .. .               | 5               | ..              | 39             | 44            |
| Do. skin (non-parasitic) .. .. .           | 15              | 7               | 363            | 385           |
| General diseases .. .. .                   | 76              | 19              | 150            | 245           |
| Diseases of unknown origin .. .. .         | 33              | 1               | 28             | 62            |
| Anti-rabic treatment .. .. .               | 13              | ..              | 111            | 124           |
| Rabies .. .. .                             | 2               | ..              | 51             | 53            |
| Total .. .. .                              | 1,228           | 59              | 3,074          | 4,361         |
| <b>Surgical cases.</b>                     |                 |                 |                |               |
| Abscess and wound, etc. .. .. .            | 184             | 35              | 241            | 460           |
| Tumour, cyst, etc. .. .. .                 | 31              | 1               | 56             | 88            |
| Hernia, prolapse, etc. .. .. .             | 35              | ..              | 12             | 47            |
| Diseases of bones .. .. .                  | 37              | 5               | 55             | 99            |
| Do. horns .. .. .                          | 40              | ..              | ..             | 40            |
| Do. articulation .. .. .                   | 29              | 6               | 8              | 43            |
| Do. muscles, tendons, etc. .. .. .         | 16              | 6               | 13             | 35            |
| Do. vessels and nerves .. .. .             | 1               | 1               | 1              | 3             |
| Do. glands .. .. .                         | 83              | ..              | 15             | 98            |
| Do. feet .. .. .                           | 16              | 3               | 73             | 92            |
| Do. eye, ear, nose, throat, etc. .. .. .   | 68              | 13              | 114            | 195           |
| Urinary and generative systems .. .. .     | 172             | 1               | 22             | 195           |
| Docking .. .. .                            | ..              | ..              | 24             | 24            |
| Castration .. .. .                         | 4               | ..              | 13             | 17            |
| Test for pregnancy .. .. .                 | 360             | ..              | ..             | 360           |
| Received for destruction .. .. .           | 1               | 4               | 44             | 49            |
| Carcasses received for post-mortem .. .. . | 1               | 4               | 225            | 230           |
| Total .. .. .                              | 1,078           | 79              | 916            | 2,075         |

**Radiology.**—During the period under report 17 cases were attended upon for radiographic examination, all from the small animal wards. Of these, 10 cases were charged for and the rest done free of charge for diagnostic and demonstration purposes.

**Ultra-Violet therapy.**—Four cases were treated.

**Diseases among livestock attending the hospital—Rabies.**—The total number of brains examined for Rabies was 50 as against 37 for the corresponding period of last year. The results of examination in the College and Pasteur Institute, Coonoor, are as shown below:—

| Kind of animal. | Our results. |               | Pasteur Institute result. |               |
|-----------------|--------------|---------------|---------------------------|---------------|
|                 | Positive.    | Inconclusive. | Positive.                 | Inconclusive. |
| Dog .. .. .     | 30           | 16            | 30                        | 16            |
| Cattle .. .. .  | 2            | 1             | 2                         | 1             |
| Pony .. .. .    | 1            | ..            | 1                         | ..            |
| Total .. .. .   | 33           | 17            | 33                        | 17            |

Vaccination against rabies in dogs was done free of cost for 106 cases during the period in addition to 5 vaccinations against rabies with the one dose vaccine of Haffkine Institute, Bombay.

A case of piroplasmosis in a horse due to *Babesia equi* was met with.

**Nervous form of Ranikhet disease.**—A batch of 13 birds from Hosur Cattle Farm showing nervous symptoms was admitted into the hospital for investigation. Result of investigation showed it to be the nervous form of ranikhet disease.

**Shoeing forge.**—The number of horses shod and feet repaired including bullocks were 194 during the period under report. Most of the horses shod and whose feet were repaired belonged to the Madras City Police. The forge plays an important role in the practical training of students in the art of scientific shoeing.

**Fees.**—The number of cases admitted in the College hospital and fee realized during the years 1951-52, 1952-53 and during the period under report, are given below:—

| Year.                                                 | Number of cases admitted. | Fee realized. |
|-------------------------------------------------------|---------------------------|---------------|
|                                                       |                           | RS. A. P.     |
| 1951-52 .. .. .                                       | 8,668                     | 17,057 14 2   |
| 1952-53 .. .. .                                       | 11,346                    | 19,909 15 3   |
| 1953-54 (From 1st April 1953 to 30th September 1953). | 6,417                     | 7,968 9 6     |

**Pharmacy.**—The total number of prescriptions dispensed during the period under report in the Pharmacy was 13,495 of which 153 were for private practice, 989 for the Horse Ward, 4,641 for the Cattle Ward and 7,712 for the Dog Ward, with a daily average of 73.74.

**15. Laboratories.**—The number of specimens received during the period under report for examination in the departments of Bacteriology, Pathology, Parasitology and Clinical Laboratory was 7,240. The sources from which the materials were received are as follows:—

|                                                                                                         |       |
|---------------------------------------------------------------------------------------------------------|-------|
| 1 From the staff of the department in the field .. .. .                                                 | 3,126 |
| 2 From the wards and laboratories of the Madras Veterinary College .. .. .                              | 2,688 |
| 3 Livestock Research Stations and other farms of the department.                                        | 1,050 |
| 4 Veterinary Investigation Officer, Ranipet, including Assistant Disease Investigation Officers .. .. . | 214   |
| 5 Corporation of Madras .. .. .                                                                         | 7     |
| 6 Agricultural Department .. .. .                                                                       | 14    |
| 7 Forest Department .. .. .                                                                             | 70    |
| 8 Co-operative Department .. .. .                                                                       | 12    |
| 9 Private boards including other States .. .. .                                                         | 59    |
| Total .. .. .                                                                                           | 7,240 |

The following table shows the results of examination of the specimens:—

| Serial number.                   | Description. | Number of specimens positive. |
|----------------------------------|--------------|-------------------------------|
| 1 Adementinoma .. .. .           | .. .. .      | 1                             |
| 2 Adenocarcinoma .. .. .         | .. .. .      | 2                             |
| 3 Adenochondro-fibroma .. .. .   | .. .. .      | 4                             |
| 4 Adenoma .. .. .                | .. .. .      | 4                             |
| 5 Anæmic changes .. .. .         | .. .. .      | 3                             |
| 6 Anaplasma marginale .. .. .    | .. .. .      | 1                             |
| 7 Anthrax .. .. .                | .. .. .      | 40                            |
| 8 Auto-vaccine .. .. .           | .. .. .      | 7                             |
| 9 Avian leucosis complex .. .. . | .. .. .      | 51                            |
| 10 Babesia bigemina .. .. .      | .. .. .      | 30                            |
| 11 Babesia cabali .. .. .        | .. .. .      | 1                             |
| 12 Babesia canis .. .. .         | .. .. .      | 9                             |
| 13 Babesia gibsoni .. .. .       | .. .. .      | 2                             |
| 14 Babesia motasi .. .. .        | .. .. .      | 1                             |
| 15 Babesia sergenti .. .. .      | .. .. .      | 2                             |
| 16 Basal cell carcinoma .. .. .  | .. .. .      | 1                             |
| 17 Black-quarter .. .. .         | .. .. .      | 8                             |
| 18 Bovine Lymphangitis .. .. .   | .. .. .      | 25                            |
| 19 Chondrosarcoma .. .. .        | .. .. .      | 1                             |

| Serial number. | Description.                      | Number of specimens positive. |
|----------------|-----------------------------------|-------------------------------|
| 20             | Cnemidocoptes sp.                 | 3                             |
| 21             | Cysts and growths                 | 4                             |
| 22             | Dermoid cyst                      | 4                             |
| 23             | Demodex                           | 26                            |
| 24             | Endo and Ecto parasites           | 59                            |
| 25             | Entameba                          | 1                             |
| 26             | Enteritis                         | 21                            |
| 27             | Epithelioma                       | 2                             |
| 28             | Fibroma                           | 6                             |
| 29             | Hæmoproteus columbae              | 1                             |
| 30             | Hæmorrhagic septicæmia            | 16                            |
| 31             | Helminthic lesions                | 6                             |
| 32             | Hepatozoan canis                  | 10                            |
| 33             | Hepatic cirrhosis                 | 20                            |
| 34             | Inflammatory tissues              | 21                            |
| 35             | Johne's disease                   | 28                            |
| 36             | Leiomyoma                         | 3                             |
| 37             | Lipoma                            | 1                             |
| 38             | Mastitis (milk samples)           | 54                            |
| 39             | Melanoma                          | 6                             |
| 40             | Microfilaria                      | 3                             |
| 41             | Miscellaneous                     | 16                            |
| 42             | Mixed cell sarcoma                | 3                             |
| 43             | Nephritis                         | 1                             |
| 44             | Notoedres sp.                     | 2                             |
| 45             | Oocysts of Eimeria                | 91                            |
| 46             | Oocysts of Isospora               | 1                             |
| 47             | Ova of Ancylostomes sp.           | 211                           |
| 48             | Ova of Ascaris                    | 115                           |
| 49             | Ova of Capillaria sp.             | 2                             |
| 50             | Ova of D. caninum                 | 8                             |
| 51             | Ova of Diphyllbothrim             | 1                             |
| 52             | Ova of Moniezia                   | 3                             |
| 53             | Ova of S. Nasalis                 | 68                            |
| 54             | Ova of S. Spindalis               | 6                             |
| 55             | Ova of Spirocerca lupi            | 30                            |
| 56             | Ova of Strongyle sp.              | 459                           |
| 57             | Ova of Strongyloides avian        | 1                             |
| 58             | Ova of Trematodes                 | 134                           |
| 59             | Ova of Trichuris sp.              | 13                            |
| 60             | Papilloma                         | 5                             |
| 61             | Pneumonia                         | 9                             |
| 62             | Rabies                            | 33                            |
| 63             | Rainey's corpuscles               | 14                            |
| 64             | Rickettsia canis                  | 7                             |
| 65             | Rickettsia (bovine)               | 4                             |
| 66             | Sarcocysts                        | 7                             |
| 67             | Sarcoptes                         | 26                            |
| 68             | Sporangia of Rhinosporidium       | 1                             |
| 69             | Schistosoma nasalis               | 2                             |
| 70             | Squamous cell carcinoma           | 36                            |
| 71             | Theileria mutans                  | 195                           |
| 72             | Theileria sp.—sheep               | 15                            |
| 73             | Trichophyton                      | 50                            |
| 74             | Tuberculosis                      | 1                             |
| 75             | Trypanosoma evansi (bovine)       | 33                            |
| 76             | Trypanosoma evansi (equines)      | 10                            |
| 77             | Trypanosoma evansi (canines)      | 1                             |
| 78             | Venereal sarcoma                  | 4                             |
| 79             | Fibro-sarcoma                     | 1                             |
|                | Negative                          | 2,098                         |
|                | Materials of insignificant nature | 4,706                         |
|                | Materials unfit for examination   | 365                           |
|                |                                   | 71                            |
|                | Total                             | 2,098                         |
|                | Grand Total                       | 5,142                         |
|                |                                   | 7,240                         |

16. *Diagnostic and Analytical work carried out by various departments of the College—Bacteriology Department.*—During the period under report, the number of specimens received for diagnostic purpose in the Bacteriology department was 1,272. The nature and number of materials received for the various examinations and tests are as shown hereunder :—

1. Microscopical examination—

|                                                       |     |
|-------------------------------------------------------|-----|
| (i) Smears consisting of blood, pus and tissue smears | 791 |
| (ii) Bowel washing and rectal pinch smears            | 54  |
| Total                                                 | 845 |

2. Cultural examination—

|                                     |     |
|-------------------------------------|-----|
| (i) Blood swabs                     | 69  |
| (ii) Pus swabs                      | 87  |
| (iii) Ear swabs                     | 20  |
| (iv) Vaginal and uterine swabs      | 6   |
| (v) Stomach and intestinal contents | 7   |
| (vi) Ascitic fluid and urine        | 6   |
| (vii) Tissues swabs                 | 21  |
| (viii) Bile                         | 2   |
| (ix) Tissues                        | 26  |
| (x) Milk of cows for mastitis       | 53  |
| Total                               | 297 |

3. Biological tests—

|                                                                                               |     |
|-----------------------------------------------------------------------------------------------|-----|
| (i) Blood and tissues swabs                                                                   | 29  |
| (ii) Tissues                                                                                  | 67  |
| (iii) Soil samples                                                                            | 1   |
| (iv) Bone pieces (Gristle) Hide fleshings and skin scrapings for issue of health certificates | 5   |
| Total                                                                                         | 102 |

4. Serological test—

|                                      |       |
|--------------------------------------|-------|
| Sera, synovial and testicular fluids | 28    |
| Grand total                          | 1,272 |

*Biological tests.*—Biological tests were conducted with the materials suspected for Anthrax, Blackquarter, etc., with the following results :—

| Serial number and diseases. | Positive. | Negative. | Total. |
|-----------------------------|-----------|-----------|--------|
| (1) Anthrax                 | (2) 11    | (3) 61    | (4) 72 |
| 2 Blackquarter              | 4         | 16        | 20     |
| 3 Hæmorrhagic septicæmia    | 3         | 18        | 21     |
| 4 Tuberculosis              | ..        | 2         | 2      |
| 5 Safety test               | ..        | 8         | 8      |
| Total                       | ..        | 123       | ..     |

*Auto-vaccine.*—During the period under report, auto-vaccines were prepared and supplied, the affections being Ottorrhœa in dogs and chronic wounds in elephants. The use of auto-vaccines gave encouraging results in the treatment of chronic affections.

*Pathology department.*—During the period under report, 340 autopsies were performed. The details are as under :—

|                             |     |
|-----------------------------|-----|
| 1 Dogs                      | 45  |
| 2 Cattle                    | 13  |
| 3 Horses and ponies         | 13  |
| 4 Cats                      | 2   |
| 5 Gibbon                    | 1   |
| 6 Poultry including 1 goose | 266 |
| Total                       | 340 |

Among the autopsies conducted, the following interesting conditions were met with :—

- (1) Generalised cysticercosis—dog.
- (2) Intussusception—cat.
- (3) Carcinoma bio-myomatousum—hen.
- (4) Rupture of liver—horse.
- (5) Suppurative nephritis—dog.
- (6) Bovine lymphangitis with involvement of lung—bullock.

*Parasitology department.*—The total number of clinical materials for examination consisting of blood smears, faecal samples, skin scrapings, etc., was 3,507.

*Physiology department.*—The total number of specimens examined during the period under report was 353 as detailed hereunder :—

| Serial number and nature of specimens.<br>(1) | Canines.<br>(2) | Bovines.<br>(3) | Equines.<br>(4) | Others.<br>(5) | Total.<br>(6) |
|-----------------------------------------------|-----------------|-----------------|-----------------|----------------|---------------|
| 1 Urine .. .. .                               | 143             | 12              | 7               | 2              | 164           |
| 2 Blood for total cell count .. ..            | 20              | ..              | 1               | ..             | 21            |
| 3 " Hæmo-globin estimation .. ..              | 12              | ..              | 2               | ..             | 14            |
| 4 Blood smears for differential count.        | 36              | 74              | 8               | 1              | 119           |
| 5 Serum for calcium estimation .. ..          | ..              | 13              | 1               | ..             | 14            |
| 6 " phosphorous estimation .. ..              | ..              | 8               | ..              | ..             | 8             |
| 7 " magnesium estimation .. ..                | ..              | 13              | 1               | ..             | 14            |
| 8 Ascitic fluid .. .. .                       | ..              | ..              | 1               | 1              | 2             |
| 9 Fluid from abdomen .. .. .                  | 1               | ..              | ..              | ..             | 1             |
| 10 Bile .. .. .                               | ..              | 1               | ..              | ..             | 1             |
| 11 Glucose toleration test .. .. .            | 2               | ..              | ..              | ..             | 2             |
| 12 Urethral calculi .. .. .                   | ..              | 1               | ..              | 1              | 2             |
| 13 Milk for the presence of acetone ..        | ..              | 1               | ..              | ..             | 1             |
| Total .. .. .                                 | 214             | 123             | 21              | 5              | 363           |

The following abnormal constituents were noticed in the samples of urine examined :—

| Constituents.<br>(1)  | Canines.<br>(2) | Bovines.<br>(3) | Equines.<br>(4) | Others.<br>(5) | Total.<br>(6) |
|-----------------------|-----------------|-----------------|-----------------|----------------|---------------|
| Albumin .. .. .       | 46              | 4               | ..              | ..             | 51            |
| Bile pigments .. .. . | 9               | 1               | ..              | 1              | 10            |
| Sugar .. .. .         | 4               | ..              | ..              | ..             | 4             |
| Casts .. .. .         | 2               | ..              | ..              | ..             | 2             |
| Blood .. .. .         | ..              | 2               | ..              | ..             | 2             |
| Pus cells .. .. .     | 8               | 1               | ..              | ..             | 9             |
| Acetone .. .. .       | 3               | ..              | ..              | ..             | 3             |
| Total .. .. .         | 72              | 8               | ..              | 1              | 81            |

*Hygiene department.*—Two water samples collected from the newly constructed well of this College were analysed.

*Animal Husbandry department.*—The College livestock section and poultry unit were continued to be attached to this section.

*Animal Nutrition department.*—During the period under report, five samples of different feeds were analysed for their nutrient composition. Two samples of cashewnut browns and cashewnut factory sweepings, received from the Superintendent, District Livestock Farm, Koila, were analysed and found to contain large amount of undefined resin of unknown composition and excess of fat. They were, therefore, unsuitable for poultry feeding without being defatted and even then they could be used only in a very small amount. Two samples of fish meal manufactured by the Government Fisheries Technological Station, Kozhikode, and the Stanes & Co., Mangalore, were examined and the product of the former was found better, consistent with increased rate in price and was recommended for feeding livestock while the other was not recommended. A sample of cotton seed cake manufactured by the Rallis India, Limited, is under investigation as to its suitability for feeding livestock. A balanced concentrate mixture from the

available feeds at Circars was computed and recommended for use in the feeding of milch animals in those districts. The nutritive value of tamarind seed was furnished with its composition to the Allied Industries, Hyderabad.

17. *Special features—Bacteriology department—Anthrax.*—One hundred and sixty-nine materials were received for examination of which 40 were found to be positive.

Three samples of hide fleshings, one of bone grit and one of goat skin scrapings, being a representative sample of the respective consignments intended for export were examined for the issue of Anthrax free certificates. Out of this, the last one, viz., goat skin scrapings was found positive for Anthrax by biological test.

*Tuberculosis.*—Out of seven materials received for examination from suspected cases of Tuberculosis, none was found to be positive.

*Brucellosis.*—Twenty-two samples of sera, four of synovial fluid and two of testicular fluids were put to serological test and were declared negative.

*Johne's disease.*—Eighty materials consisting of bowel washings and rectal pinch smears were examined from clinical and suspected cases of this disease. In 26 materials microscopical examination revealed acid fast bacteria morphologically indistinguishable from *Mycobacterium paratuberculosis*.

*Hæmorrhagic septicæmia.*—One hundred and fifty-one materials consisting of heart blood, Oedema fluid smears and swabs were examined microscopically and biologically of which 16 were found positive.

*Mastitis.*—Fifty-three materials of milk smears and milk from clinically suspected cases of Mastitis were examined both microscopically and culturally. The causal organisms detected are furnished hereunder :—

|                                            |    |
|--------------------------------------------|----|
| (1) Staphylococci .. .. .                  | 24 |
| (2) Streptococci .. .. .                   | 2  |
| (3) Diphtheroids .. .. .                   | 2  |
| (4) <i>Coli ærogenes</i> .. .. .           | 11 |
| (5) No growth obtained on incubation .. .. | 14 |
| Total .. .. .                              | 53 |

*Small animals colony.*—The successful breeding and maintenance of small animals such as rabbits, guinea pigs, mice, white rats and pigeons for experimental purposes were continued and their stock position was satisfactory for the period under report.

*Pathology department—Avian Leucosis complex.*—This disease was detected in 51 cases from materials received for histopathological examination.

*Coccidiosis.*—This disease was detected in 70 cases of chicks received for autopsy.

*Johne's disease* was detected on autopsy in two cases, one in a cow and the other in a buffalo.

*Tuberculosis* was detected on autopsy in one cow.

*Parasitology department—Schistosoma spindalis.*—Infection was recorded in five cattle and in one sheep. Numerous hydatid cysts were found in the liver in a lion that died in the Madras Zoo.

*Thelazia bubalis* was found in the subcutaneous abscess of a dog.

*Theileria infection* was detected in 14 blood smears received from the Kurukuppi Sheep Farm of which one had a concurrent infection of *Babesia motasi*.

*Rickettsia canis* was detected in four dogs and similar bodies were seen in the blood smears of four cattle also.

*Anaplasma marginale* was observed in one bullock.

*Sporangia of Rhinosporidium* was seen in the nasal growth of a heifer.

*Piroplasmiasis* was detected in a horse due to *Babesia equi*.

Twelve blood smears from sheep of Kurikuppi farm and two smears from cattle revealed Rainey's corpuscles.

18. *Manufacture of biological products—Ranikhet-disease—Vaccine section.*—All the eggs for production of Ranikhet disease vaccine and chickens for tests and experiments were supplied from the Poultry unit of this College. Three brews of vaccine constituting 300,000 doses were manufactured during the period under report. As many as 278,000 doses of vaccine were issued to this State for use in the field and 50,000 doses to the neighbouring States of Travancore and Cochin, Nagpur, etc. The reports on the number of birds protected were awaited.

The students of the III and IV-year B.V.Sc. classes and Veterinary Assistant Surgeons of the Refresher Course had training in the section in the technique of the manufacture of the vaccine and the mode of injection and precautions to be taken in its successful application in the field.

*Auto-vaccine—Vide under Bacteriology Department—Helminthology section.*—During the period under report, work related to investigation on Amphistomiasis of ruminants to study the identity of the parasites and the intensity of natural infections.

*Poultry.*—At the beginning of the period under report, the stock position of the Poultry unit attached to this College was as shown hereunder:—

|                     |     |      |    |    |    |    |    |    |    |    |
|---------------------|-----|------|----|----|----|----|----|----|----|----|
| White Leghorn cocks | Do. | hens | .. | .. | .. | .. | .. | .. | .. | 4  |
|                     |     |      | .. | .. | .. | .. | .. | .. | .. | 39 |
|                     |     |      |    |    |    |    |    |    |    | —  |
|                     |     |      |    |    |    |    |    |    |    | 45 |
|                     |     |      |    |    |    |    |    |    |    | —  |

Total .. 45

But owing to death and culling of birds, the stock position at the end of the period under report was reduced to 31 as shown hereunder:—

|                     |     |      |    |    |    |    |    |    |    |    |
|---------------------|-----|------|----|----|----|----|----|----|----|----|
| White Leghorn cocks | Do. | hens | .. | .. | .. | .. | .. | .. | .. | 4  |
|                     |     |      | .. | .. | .. | .. | .. | .. | .. | 27 |
|                     |     |      |    |    |    |    |    |    |    | —  |
|                     |     |      |    |    |    |    |    |    |    | 31 |
|                     |     |      |    |    |    |    |    |    |    | —  |

Total .. 31

The number of eggs produced during the period under report was 2,030 and they were disposed as follows:—

|                                                                            |       |       |
|----------------------------------------------------------------------------|-------|-------|
| (1) Supply to the sections of this College                                 | EGGS. | 119   |
| (2) Supply for Ranikhet-disease Vaccine section for production of vaccine. |       | 1,306 |
| (3) Sold to public for hatching                                            |       | 181   |
| (4) Supply to the Ranikhet-disease Vaccine section for hatching.           |       | 50    |
| (5) Fed to birds                                                           |       | 237   |
| (6) Sold to public for table purpose                                       |       | 132   |
| (7) Balance left on hand                                                   |       | 5     |
|                                                                            |       | —     |
| Total ..                                                                   |       | 2,030 |
|                                                                            |       | —     |

#### IV. VETERINARY BIOLOGICAL AND RESEARCH INSTITUTE, RANIPET.

19. The institute continued to work implementing the provisions of the Indian Factory Act and the Industries Development and Regulating Act, 1951.

20. *Livestock and fodder.*—Three hundred and seventeen adult he-buffaloes, 287 buffalo calves, 19 bull calves, 3 heifer calves, 1,053 goats and 111 sheep were purchased during the period under report.

Three hundred and thirty-nine adult he-buffaloes, 163 buffalo calves, 14 bull calves, 9 heifer calves, 196 goats and 45 sheep were salvaged after the preparation of the biological products and resold to the contractors.

The adult he-buffaloes, buffalo calves, bull calves, heifer calves, goats and sheep required for preparation and test of biological products in the institute were obtained on contract basis as in previous years. Some chicks and rabbits required for experiments were purchased locally. The mice required for use in the institute were obtained from the King Institute, Guindy, and the Madras Veterinary College. The guinea-pigs, some of the rabbits and mice were bred in the institute. A small poultry unit was also maintained for eggs and chicks required for the manufacture and testing of some of the vaccines.

*Cultivation of cattle fodder.*—Due to want of sufficient quantity of water and the fencing of the compound, only a small quantity of chulam was raised in about 2 acres of land at the institute during the period.

The various articles of cattle fodder except bengalgram and salt were purchased on contract basis.

21. *Production of biological products—(a) Anti-rinderpest serum.*—The stock of anti-rinderpest serum on hand at the beginning of the year was 307,810 doses of 5 c.c. each. During the period, 9 brews of the product consisting of 315,340 doses were manufactured. In addition 3 brews of anti-rinderpest serum consisting of 102,240 doses were under test during the period under report. Three hundred and seventeen buffaloes were purchased during the period and used in the manufacture of the product and on an average a buffalo produced 1,518.47 doses. The total quantity of serum issued during the period was 641,520 doses of 5 c.c. each. The demand for this product was mostly from the Andhra districts viz., East Godavari, West Godavari, Krishna, Nellore, Cuddapah, Kurnool and Chittoor. All the brews of anti-rinderpest serum manufactured were tested for sterility, safety and potency before issue to the field staff. Eighty-four buffalo calves were used for testing this product during the period.

(b) *Rinderpest bull virus.*—Eighty-two buffalo calves were used for the production and maintenance of this virus during the period. Eight thousand three hundred and twenty-five c.c. of the product were manufactured and of these 4,625 c.c. were used for immunizing buffaloes for anti-rinderpest serum production and carrying out necessary tests.

Seed bull virus was supplied to the Hyderabad and Mysore States during the period under report.

(c) *Rinderpest goat virus.*—There was a heavy demand for this product during the period under report due to the prevalence of rinderpest outbreaks in the northern districts. During the period, 681 goats were used for the manufacture of this product. One hundred and eighty-nine goats could not be bled due to unsatisfactory reactions and due to regulating production according to the demands from field staff.

During the period 274,784 c.c. of goat virus were manufactured out of which 239,540 c.c. were issued to the field staff for controlling outbreaks of rinderpest.

The Mukteswar 'W' line of virus was maintained and used at the institute for goat virus production.

Seed virus was supplied to Hyderabad and Mysore States during the period under report.

(d) *Hæmorrhagic septicæmia vaccine.*—The stock of this vaccine at the beginning of the period was 35,136 doses of 5 c.c. each. During the period under report 16 brews of the vaccine consisting of 379,640 doses of 5 c.c. each were manufactured. Each brew of the vaccine was tested culturally and

biologically before issue to the field. Fifty-seven buffalo calves and 19 rabbits were used for testing the vaccine and for the other experiments in the section. The quantity of the vaccine issued during the period was 392,462 doses of 5 c.c. each. The virulence of the organisms used in the vaccine manufactured was maintained by passage through susceptible buffalo calves.

(e) *Blackquarter vaccine*.—The stock of this product on hand at the beginning of the period was 6,238 doses of 5 c.c. each. During the period under report, 4 brews of the vaccine consisting of 257,960 doses of 5 c.c. were manufactured. Each brew of the vaccine was tested for sterility, safety and potency in calves, sheep and guinea-pigs before issue to the field. Thirty-eight buffalo calves, 40 bull calves, 9 heifer calves, 16 sheep and 175 guinea-pigs were used for testing the vaccine and for other experiments in the section. The quantity of the vaccine issued during the period was 252,758 doses of 5 c.c. each.

(f) *Bovine lymphangitis vaccine*.—Vaccine sufficient for 134 animals was on hand at the beginning of the period. One brew of the vaccine yielding 138 courses was manufactured during the period. The number of courses of vaccine issued to the field staff was 160.

(g) *Sheep-pox vaccine*.—Two brews of vaccine yielding 4,105 doses were manufactured and supplied to the field staff during the period. One hundred and fourteen sheep were utilized for the manufacture of product and for the use of experiments in the section.

(h) *Fowl-pox vaccine*.—Sixty doses of pigeon-pox scab vaccine were manufactured at the beginning of the period. Later this was replaced by fowl-pox and pigeon-pox vaccines in freeze-dried form grown on the C. A. Membrane of developing chicks. One brew of fowl-pox vaccine comprising of 198 ampoules of 100 doses each was prepared during the period. The test carried out yielded satisfactory results and the vaccine was issued to the field staff for general use both in outbreaks and free areas.

One hundred and fifty-nine ampoules of freeze-dried pigeon-pox vaccine consisting of 7,950 doses were on hand at the beginning of the period. Seven thousand two hundred doses of fowl-pox vaccine and 1,910 doses of pigeon-pox vaccine were issued to the staff for use in the field.

Seven pigeons were used for the manufacture of the scab vaccine and eight chicks were used for testing the vaccines.

(i) *Fowl cholera vaccine*.—Two brews of the vaccine yielding 1,450 doses of 1 c.c. each were manufactured during the period. Four fowls were used for testing the product.

*Other sera and vaccines*.—The requirements, of anthrax spore vaccine by Livestock Inspector, Kozhikode, were obtained from Mukteswar and issued.

22. *Experiments and research*.—(a) *Rinderpest*.—During the period under report four suspected materials collected from cattle and sheep for rinderpest were received for biological test. The three materials received from cattle proved positive for rinderpest while the one from the sheep was found negative.

(b) *Lapinized rinderpest virus*.—Further experimental work on adapting the laboratory strain of rinderpest bovine virus to local rabbits was continued during the period. The strain which had already undergone 118 serial passages in rabbits during the previous year was passaged further and during the above period 36 more serial passages from 119 to 154 were made. The strain has been maintained quite successfully as seen by the characteristic reactions and lesions in the injected rabbits. As judged by the safety and potency tests conducted on buffalo calves and adult buffaloes (serum makers) at various passage levels, this strain promises to provide a very useful product as a prophylactic agent for use against rinderpest virus cannot be safely used. Buffalo calves used as controls at the 120th, 130th and 140th passages evinced only very mild thermal reaction to the virus and

withstood a subsequent challenge with virulent bovine virus. Safety and potency tests conducted at the 118th passage on 10 buffaloes at the 144th passage on 5 buffaloes and at the 105th passage on 17 buffaloes showed that all the buffaloes evinced very mild thermal reaction to the virus and withstood challenge with virulent bull virus later. Titration experiments carried out with the 150th passage freeze-dried virus material on buffalo calves to assess the minimum infective dose of the Madras strain of lapinized virus gave titre of 1—1,000. The 100th, 125th and 150th passages of the lapinized virus materials were freeze-dried and preserved in deep freeze for further study. Apart from the above experimental work with the Madras strain of lapinized virus, a batch of kabete strain of lapinized virus (KLM 4). KLM 4 was obtained with the help of Mr. Alton and some experimental vaccine was produced and freeze-dried. This batch was titrated on buffalo calves to assess its m.l.d. and its titre was found to be very low, viz., less than 1—50. Three batches of kabete lapinized vaccine prepared (KLM 1, KLM 2, KLM 3) were tested for safety and potency on three batches of adult he-buffaloes (serum makers). Even 0.1 gram. of the freeze-dried product per animal failed to protect 5 of the 10 buffaloes used in the test. Further work with the Madras strain of lapinized virus to assess its m.l.d. viability, possibility of evolving a reactor virus and other allied experiments are in progress. Ninety-five rabbits and 4 buffalo calves were used for the experiments and in maintaining the virus.

(c) *Hæmorrhagic septicæmia*.—Serological typing of various strains of pastuerella available at the institute and those received from actual outbreaks of hæmorrhagic septicæmia in the field were undertaken to find out the difference in their antigenicity, if any. The typing was done using mice as the test animals. All the eleven strains typed so far were found to be serologically identical.

(d) *Adjuvant vaccine*.—As the present broth vaccine is found to confer immunity of a short duration only an adjuvant vaccine using an addition of liquid paraffin and lanolin to a cell suspension of formalin-inactivated pastuerella organisms on the lines recommended by Dr. Bain of Australia was prepared and tested. This vaccine in doses of 2 c.c. was found to confer sufficient immunity to withstand a challenge dose of over 1,000 m.l.d.s of virulent pasteurella organisms. The immunity conferred by the vaccine was found durable for two months after vaccination. Further study on the new vaccine is in progress. The vaccine was used to protect all the farm animals at the Livestock Research Station, Lam, Guntur, without any untoward results. The successful evolution of this new vaccine is expected to throw more possibilities for an effective control of hæmorrhagic septicæmia in cattle and buffaloes of our farmers in this State.

Thirteen specimens suspected for hæmorrhagic septicæmia consisting of heart blood swabs and long bones were received during the period under report. Five of these proved positive for hæmorrhagic septicæmia on biological test and the organisms isolated have been typed and found to be serologically identical with those available at the institute.

(e) *Blackquarter*.—The scheme to improve the quality of blackquarter vaccine was taken up during the period. A comparative study of the vaccines prepared in the usual way using Nogouchi's medium and cystine broth medium was commenced during the period. It was found that the vaccine prepared using Nogouchi's medium conferred a slightly better immunity than the one prepared using cystine broth. Since the results were not statistically significant, it was proposed to repeat the experiments in bull calves, buffalo calves and guinea-pigs. The work is in progress.

Experiments were also carried out to find out if the addition of 1 per cent alum to the vaccine as an adjuvant will improve the immunising value of the vaccine. It was found that the alum precipitated vaccine was far superior in its immunizing value than the routine vaccine without alum.

During the period under report about 10,800 doses of Cl. Welchii anaculture using types B and D were prepared and supplied to the Assistant Disease

Investigation Officer (Sheep and Goats) for combating outbreaks of Enterotoxaemia in sheep in the State. The reports received so far indicate that this product is quite useful in the control of the disease.

Biological tests were conducted with two materials received from the field suspected for black-quarter and the strains isolated are under study with a view to incorporate them for the production of the vaccine.

(f) *Sheep-pox*.—The local strain of sheep-pox virus is being maintained by passage through sheep. One batch of sheep-pox vaccine using a Rumanian Strain of sheep-pox virus and another batch of vaccine using a local strain of sheep-pox virus were prepared in freeze-dried form and a series of experiments were carried out with these vaccines during the period. Sheep-pox vaccine prepared from the Rumanian strain was tested on a number of sheep employing different routes and using varying concentrations of vaccine. The nature of reaction noticed in the vaccinated animals was not quite satisfactory and some more experiments have been designed with this product. The freeze dried virus (Rumanian strain) was found to be viable for a period of twenty-one days when kept at room temperature.

Experiments were also conducted with a vaccine prepared from the freeze-dried material of the local strain by vaccinating sheep by different routes and the nature of reaction and other aspects are under study. Further experiments are in progress.

One batch of sensitized vaccine using a local strain of sheep-pox was prepared and tested in sheep. The reactions were found to be mild, producing slight swelling at the place of vaccination and the vaccinated sheep withstood the challenge with virulent virus very well. This product has to be tried on a large scale and all aspects pertaining to its safety and potency have to be closely studied before its value as an immunising agent can be assessed.

Sheep-pox vaccine (local strain) prepared in 50 per cent glycerine kept at room temperature for 7 days was found to be viable. The vaccinated sheep withstood the challenge and no reactions were noticed.

Experiments to cultivate the sheep-pox in embryonating eggs were continued during the period. The alternate passage of virus between sheep and C.A. membrane on 12-day old developing eggs was also started afresh and further studies on this aspect of work is in progress.

(g) *Brucella Abortus Vaccine and Antigens*.—Three brews of *Brucella Abortus* vaccine was prepared on the outlines of the Bureau of Animal Husbandry, Washington D.C., comprising 1,200 doses of 5 c.c. each during the period and 1,030 doses were issued to the Veterinary Investigation Officer and the field staff for experimental vaccination against contagious abortion in selected areas.

During the period 2,100 c.c. of brucella tube antigen and 150 c.c. of plate antigen were prepared. In the institute 4,450 c.c. of tube antigen were utilized for conducting series of agglutination tests and 25 c.c. of plate antigen were supplied to the Veterinary Investigation Officer, Ranipet. Small quantities of B. Melitensis tube antigen (400 c.c.) and plate antigen (15 c.c.) were also prepared during the period.

All the batches of vaccine have been tested on calves and guinea-pigs for safety and potency and no untoward reactions were noticed in the vaccinated animals.

Daily a detailed study of the agglutination titre of the blood sera of the vaccinated calves from the day of vaccination for a period of two months was made during the period. The results of the tests are being recorded. Further tests are in progress. Three heifer calves, 3 bull calves and 6 guinea-pigs were utilized for testing the batches of vaccine prepared.

(h) *Anthrax spore vaccine*.—Experiments in connexion with the preparation of anthrax spore vaccine at this institute were carried out during the period. One batch of experimental anthrax spore vaccine comprising of 3,200 doses was manufactured from a virulent strain obtained from the Indian Veterinary Research

Institute, Mukteswar. This brew was tested on sheep and goats with varying doses, the number of spores per dose ranging between 1 million spores to 5 million spores per dose. From the tests conducted with this vaccine animals that received 5 million spores per dose withstood a challenge of 50 m.l.ds. The Veterinary Investigation Officer and the Assistant Disease Investigation Officer (Sheep and Goats) have been requested to use this product on experimental scale in the field.

(i) *Anti-anthrax serum*.—The experimental anti-anthrax serum manufactured during the previous year was issued to the field staff for protecting animals in actual outbreaks of anthrax. Twelve thousand three hundred and forty doses of the product were issued to the field staff and the reports received were satisfactory.

23. *Food and Agriculture Organization Technical Assistance*.—(a) The Veterinary Expert of the Food and Agriculture Organization, Mr. G. G. Alton, continued his work in the Institute till 19th August 1953 when he left on the termination of his period of assignment. During his stay a few more batches of rinderpest goat tissue vaccines, lapinized rinderpest vaccine and vaccines for fowl-pox, sheep-pox and Ranikhet disease were prepared in a freeze-dried form on an experimental scale. He carried out some field campaigns and experimental vaccinations with freeze-dried products manufactured by him and visited some of the villages to study the reaction of the vaccinated animals.

During the period under report, two research microscopes, a vacuum pump, a vacuum gauge, a universal thermostatic water bath and a few other minor equipments were received from the Food and Agriculture Organization for use in the Institute.

(b) *Freeze-dried rinderpest vaccine (powder)*.—During the period under review, 20 batches comprising of 235,225 doses of freeze-dried rinderpest vaccine were manufactured. Every batch of vaccine produced was tested for safety, potency and purity and the exact titre of virus in each batch was ascertained before issue to the field. Experiments were also conducted to ascertain the viability at room temperature and under transport conditions. Also experiments were conducted to determine the period of viability of the vaccine after reconstitution. The vaccine was tested at 2 hours, 3 hours and 4 hours after the reconstitution of the vaccine and kept at room temperature. The vaccine was found viable for four hours after reconstitution after which it begins to deteriorate.

This vaccine has been issued in large quantities to different parts of the State for experimental trial in the field and is found to be quite good in combating outbreaks of rinderpest. Two lakhs five thousand and seventy-five doses of freeze-dried rinderpest vaccine were issued for use in the field during the period.

(c) *Rinderpest goat tissue extract vaccine*.—As an experimental study a few batches of spleen tissue extract vaccine were prepared and issued for trial in the field after necessary tests in the laboratory. In one or two areas this vaccine was found to be not very effective as an immunizing agent and as such the manufacture of this vaccine has been suspended temporarily. During the period 51,650 doses of the product were produced, of which 46,350 doses were issued to the field staff for trial.

The freeze-drying unit supplied by the Food and Agriculture Organization worked satisfactorily during the period.

During the period under report the following products were freeze-dried in the freeze-drying machine :—

|                                             |    |             |
|---------------------------------------------|----|-------------|
| (1) Rinderpest goat tissue vaccine (powder) | .. | 20 batches. |
| (2) Rinderpest goat tissue extract vaccine  | .. | 10 "        |
| (3) Lapinized rinderpest vaccine            | .. | 4 "         |
| (4) Ranikhet disease vaccine                | .. | 3 "         |
| (5) Fowl-pox vaccine                        | .. | 1 batch.    |
| (6) Sheep-pox vaccine                       | .. | 2 batches.  |

## LABORATORY.

24. (a) *Specimens examined*.—During the period under report 2,379 specimens were examined. Of these 2,360 specimens were blood and wet smears, 2 were scrapings and 19 specimens were faeces. Of the above materials 74 specimens gave positive results as detailed below:—

|                                                  |    |
|--------------------------------------------------|----|
| (1) B. Subtilis and anthracoid organisms .. .. . | 25 |
| (2) P.M. Invaders .. .. .                        | 4  |
| (3) B. Mutans .. .. .                            | 1  |
| (4) Trypanosomes .. .. .                         | 26 |
| (5) B. Anthracis .. .. .                         | 3  |
| (6) Fungus spores .. .. .                        | 7  |
| (7) Sarcoptes .. .. .                            | 2  |
| (8) Spriochaetes .. .. .                         | 1  |
| (9) Pseudomonas .. .. .                          | 4  |
| (10) Coccobacillus .. .. .                       | 1  |
|                                                  | —  |
|                                                  | 74 |
|                                                  | —  |

Fifteen specimens consisting of skin and muscle were received from the field suspected for anthrax. Of these three proved positive for anthrax on biological test.

(b) *Post-mortem examinations*.—During the period under report 913 post-mortems were conducted, the details of which are as follows:—

|                   |     |
|-------------------|-----|
| Goats .. .. .     | 831 |
| Calves .. .. .    | 63  |
| Buffaloes .. .. . | 18  |
| Sheep .. .. .     | 1   |
|                   | —   |
|                   | 913 |
|                   | —   |

During post-mortem on goats, round worms belonging to the *Hæmonchus* group were frequently met with. Paramphistomes and liver flukes were commonly met with in buffalo calves and adult buffaloes.

(c) *Sale of biological products*.—During the period a sum of Rs. 1,558-6-0 was realized by the sale of biological products to neighbouring States and private veterinary practitioners. A statement showing quantity of biological products sold is furnished below:—

|                                        |              |
|----------------------------------------|--------------|
| Anti-rinderpest serum .. .. .          |              |
| Goat virus .. .. .                     | 3,600 doses. |
| Bull virus .. .. .                     | 1,375 c.c.   |
| Blackquarter vaccine .. .. .           | 85 "         |
| Hæmorrhagic septicæmia vaccine .. .. . | 1,860 doses. |
| Fowl cholera vaccine .. .. .           | 31,040 "     |
| Bovine lymphangitis vaccine .. .. .    | 200 "        |
|                                        | 1 course.    |

25. *Five-year Plan Scheme*.—The scheme for purchase of laboratory equipment and furniture sanctioned for Rs. 30,000 in G.O. Ms. No. 1505, Development, dated 4th April 1951, and the purchase of books for the library sanctioned for Rs. 10,000 in G.O. Ms. No. 1504, Development, dated 4th April 1951, were included in the Five-year Plan Schemes.

The expenditure incurred in respect of these two schemes during the period is Rs. 926 and total progressive expenditure to the end of 30th September 1953 is Rs. 29,864 leaving a balance of Rs. 10,136 unspent. Purchases are being made as and when sanction is received and proposals for purchase of furniture and books for the balance amount are being submitted and the purchase will be completed shortly. The progress as such is satisfactory.

## V. LIVESTOCK.

## ADMINISTRATION.

26. (i) Sri T. Murari held charge of the office of the Deputy Director of Animal Husbandry (Livestock) during the entire period (from 1st April to 30th September 1953).

(ii) Sri D. Pattabhiraman held charge of the office of the Deputy Director of Animal Husbandry for Key Villages during the same period.

(iii) Both the above officers toured the State and inspected the work done in livestock farms and institutions and livestock improvement work in the field regularly.

(iv) The following institutions, etc., were in charge of the officers noted against each:—

|                                                                            |                                                                                                                                                                                                                          |
|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (1) Superintendent, Livestock Research Station, Hosur.                     | Sri G. Venkatachalam (throughout the period).                                                                                                                                                                            |
| (2) Superintendent, Livestock Research Station, Lam, Guntur.               | Sri M. Kameswara Rao, from 1st April to 30th September 1953.<br>Sri C. Sambasiva Rao, from 29th and 30th September 1953.                                                                                                 |
| (3) Superintendent, Dairy cum Bull Farm, Visakhapatnam.                    | Sri J. C. P. Fernandez (throughout the period).                                                                                                                                                                          |
| (4) Superintendent, District Livestock Farm, Koila, South Kanara district. | Sri K. Thomas Benjamin (throughout the period).                                                                                                                                                                          |
| (5) Superintendent, District Livestock Farm, Thiruvazhankunnu (Malabar).   | Sri George Ebenezer (throughout the period).                                                                                                                                                                             |
| (6) Superintendent, Combined Sheep and Cattle Farm, Kurukuppi.             | Sri M. S. R. Anjaneyalu (throughout the period).                                                                                                                                                                         |
| (7) Superintendent, District Livestock Farm, Pudukkottai.                  | Sri S. C. Sundarachari, from 1st April to 27th May 1953.<br>Sri K. S. Shanmugasundaram, from 28th May to 30th September 1953.                                                                                            |
| (8) Superintendent, Kangayam Cattle Improvement Scheme, Palayakottai.      | Sri K. Kandaswamiraju (throughout the period).                                                                                                                                                                           |
| (9) Poultry Development Officer, Madras ..                                 | Sri H. Narahari Rao (throughout the period).                                                                                                                                                                             |
| (10) Sheep and Goat Development Officer ..                                 | Sri N. V. Krishna Rao, from 1st April to 31st May 1953 (on leave from 1st June to 15th July 1953) and from 16th July to 30th September 1953.<br>Sri R. Vijayarangam, from 1st June to 15th July 1953 (in leave vacancy). |
| (11) Special Officer, Artificial Insemination, Madras.                     | Sri C. K. Subbu Singh, from 1st to 15th April 1953.<br>Sri R. Viramani Ayyar, from 25th April to 30th September 1953.                                                                                                    |

NOTE.—The Veterinary Assistant Surgeon-in-charge of the Artificial Insemination Centre Madras was in charge of the office from 14th to 24th April 1953.

(12) Inspector of Key Villages, Kangayam .. Sri G. B. Radhakrishnan (throughout the period).

(13) Inspector of Key Villages, Ongole .. Sri M. C. Chellam (throughout the period).

Sri C. K. Subbu Singh was deputed to the United Kingdom for a special course of training in Artificial Insemination under the Commonwealth Technical Co-operation Scheme sponsored by the Government of the United Kingdom for a period of six months from 1st May 1953.

## LIVESTOCK-CATTLE.

27. *Livestock Research Stations, District Livestock Farms, etc.—Livestock Research Station, Hosur*—(a) *Strength*.—There were 1,338 animals in the beginning of the year as against 1,417 in the previous year. During the half-year under report, there were 119 births and 27 animals were received from outside. The number of animals which were disposed of or which died during the period was 205 (150 sales, 35 transfers and 20 deaths). The strength on 30th September 1953 was 1,279 as detailed below:—

| Breed.         | Cows.   | Heifers.  | Young bulls. | Breeding bulls. | Calves. | Work cattle. | Total. |
|----------------|---------|-----------|--------------|-----------------|---------|--------------|--------|
| (1)            | (2)     | (3)       | (4)          | (5)             | (6)     | (7)          | (8)    |
| Scindhi ..     | 163     | 118       | 148          | 9               | 98      | 8            | 544    |
| Kangayam ..    | 139     | 109       | 88           | 15              | 107     | 41           | 499    |
| Hallikar ..    | 19      | 13        | 16           | 17              | ..      | 11           | 28     |
| Cross-breed .. | 39      | 16        | 33           | 3               | 10      | 15           | 73     |
| Gir ..         | ..      | ..        | ..           | ..              | 31      | ..           | 122    |
| Tharparkar ..  | ..      | ..        | ..           | ..              | ..      | 5            | 5      |
| Horses ..      | 2       | 2         | ..           | 1               | ..      | ..           | 5      |
| Murrah ..      | (mares) | (fillies) | 2            | (stallion)      | 1       | ..           | 3      |
| Total ..       | 362     | 258       | 287          | 46              | 246     | 80           | 1,279  |

The small difference in the strength as on 1st April 1953 and as on 30th September 1953 is not due to any special cause, but sales.

(b) *Dairy*—(i) *Scindhi herd*.—On an average there were 160.5 cows in the herd of which 81.4 remained in milk and yielded 162,935.5 lb. of milk with a daily individual average of 11.0 lb. for the cows in milk and 5.6 lb. for the herd as against 11.0 lb. and 6.3 lb. respectively in the year 1952-53.

Among the cows which completed their lactation during the period one yielded over 8,000 lb., one over 6,000 lb., one over 5,000 lb. and nine over 4,000 lb.

Particulars in respect of some of the good performers are given below:—

| Cow number. | Milk yield in lb. | Number of days in milk. | Daily average for the lactation in lb. |
|-------------|-------------------|-------------------------|----------------------------------------|
| 215 .. ..   | 8,188             | 360                     | 22.7                                   |
| 299 .. ..   | 6,100             | 308                     | 19.8                                   |
| 228 .. ..   | 5,601             | 336                     | 16.7                                   |

(ii) *Kangayam herd*.—On an average there were 153.5 cows in the herd of which 79.9 remained in milk and yielded 75,805.5 lb. of milk with a daily individual average of 5.1 lb. for the cows in milk and 2.7 lb. for the herd as against 5.2 lb. and 2.1 lb. respectively in the year 1952-53. Particulars of some of the good performers which completed their lactation during the period are given below:—

| Cow number. | Milk yield in lb. | Number of days in milk. | Daily average for the lactation in lb. |
|-------------|-------------------|-------------------------|----------------------------------------|
| 720 .. ..   | 2,858             | 282                     | 10.1                                   |
| 718 .. ..   | 2,316             | 283                     | 8.2                                    |
| 497 .. ..   | 2,035             | 274                     | 7.4                                    |

(iii) *Cross-bred*.—On an average there were 19.3 cows in the herd of which 9 remained in milk and yielded 18,615.5 lb. of milk with a daily individual

average of 11.7 lb. for the cows in milk and 5.4 lb. for the herd as against 11.5 lb. and 6.5 lb. respectively in 1952-53. Particulars of two of the good performers which completed their lactation during the period are given below:—

| Cow number. | Milk yield in lb. | Number of days in milk. | Daily average for the lactation in lb. |
|-------------|-------------------|-------------------------|----------------------------------------|
| 464 .. ..   | 4,931             | 322                     | 15.3                                   |
| 461 .. ..   | 3,878             | 326                     | 11.9                                   |

(iv) *Gir herd*.—On an average there were 39.3 cows in the herd of which 21.2 remained in milk and yielded 46,248.5 lb. of milk with an individual daily average of 11.9 lb. for the cows in milk and 6.6 lb. for the herd as against 11.3 lb. and 7.6 lb. respectively in the year 1952-53. Particulars of two of the good performers are given below:—

| Cow number. | Milk yield in lb. | Number of days in milk. | Daily average for the lactation in lb. |
|-------------|-------------------|-------------------------|----------------------------------------|
| 23 .. ..    | 6,485             | 300                     | 21.6                                   |
| 33 .. ..    | 5,033             | 315                     | 16.0                                   |

(c) *Veterinary Hospital and disease position*—(i) *Veterinary Hospital*.—The particulars of cases treated, etc., in the Veterinary Hospital attached to the farm during the period are given below:—

|                                                            |       |
|------------------------------------------------------------|-------|
| Number of cases treated ..                                 | 462   |
| Number of animals castrated ..                             | ..    |
| Daily average attendance ..                                | 42.32 |
| Number of specimens examined ..                            | 323   |
| Number of specimens sent to the Madras Veterinary College. | 57    |

(ii) *Disease position—Contagious diseases*.—There was no outbreak of rinderpest, haemorrhagic septicaemia, foot and mouth disease or brucellosis.

*Anthrax*.—There was no outbreak during the period. However preventive inoculations with anti-anthrax serum were continued in April 1953 and 1,045 animals were protected against the disease.

*Blackquarter*.—There was one suspected attack in August 1953. One thousand two hundred and fifteen animals were then protected against the disease.

*Non-contagious diseases*.—Particulars of cases treated against some of the conditions are given below:—

| Name of the disease. | Number of cases treated. |
|----------------------|--------------------------|
| Ephemeral fever ..   | 59                       |
| Mastitis ..          | 16                       |
| Coccidiosis ..       | 7                        |
| Helminthiasis ..     | 4                        |
| Mange ..             | 22                       |
| Naval ill ..         | 11                       |
| Theileriasis ..      | 1                        |
| Rabies ..            | 1                        |
| Cancer ..            | 1                        |
| Retained placenta .. | 8                        |

*Johne's disease*.—Six cases were confirmed for this disease. Of these two died; the remaining four were disposed of and their intestines were seized and destroyed.

(d) *General*.—The health of all the farm animals remained very satisfactory during the period. A few weak animals were specially fed and attended to individually.

The treatment of massaging of cows and heifers in advanced pregnancy was continued as in the previous year, and it has improved the docility and dairy temperament to the animals.

(e) *Sterility work done*.—The F.A.O. Expert Mr. Bengt Lundgren visited the Farm in June 1953 and examined 64 animals. He came across both sterile and sub-fertile animals. The number of animals he examined and the result of his findings are detailed below :—

(i) *Sindhi herd*—(1) *Persistent corpus luteum* was detected in the following animals :—

Nos. 267, 237, 565, 617, 631, 127, 486, 681, 660\*, 629, 613, 612 and 580. Total—13.

\* No. 660 was transferred to Bapatla.

(2) *Infantile Genitalia*.—No. 596—the animal is being watched.

(3) *Fibrosed ovaries*.—No. 146 (pretty old).

(4) *Pyometra*.—No. 241 (used as work cattle).

The following animals were found pregnant by him :—

Nos. 248, 475, 229, 561, 609, 599 and 592.

(5) *To be examined again*.—He has asked to examine the following animals once again :—

Nos. 252, 185 and 174.

*Gir herd*.—“Cystic ovaries” were detected in Gir Cow No. 15. The following animals were found pregnant by him :—

Nos. 57, 49, 45, 41, 35, 27 and 24.

(ii) *Kangayam herd*—

(1) *Cystic ovaries*.—Nos. 801, 819 and 691.

Nos. 819 and 691 were auctioned.

(2) *Persistent corpus luteum*.—Nos. (485-A), 840, 910, 912, (810-A), (746-A), (733-A), 731, 712, 706, (693-A), (689-A), (675-A), 886, 871. Total 15.

The following animals were found pregnant by him :—

Nos. 874, 890, 761-A, 644-A, 607-A, 605-A, 955, 893, 864-A, 854, 838, 833, 829 and 834.

The animals examined by him are being observed and are examined periodically. Treatment is undertaken on the lines suggested by the Expert. After the visit of the F.A.O. Expert, the work on sterility was continued. The following cases were met with till 30th September 1953 :—

(iii) *Scindhi herd*—

(1) *Persistent corpus luteum*.—Nos. 626, 644, 670, 178, 281, 601, 649 and 174. (No. 644 was transferred to Bapatla.)

(2) *Cystic Ovary*.—Scindhi Cow No. 576—On second examination, Corpus luteum was removed.

(3) *Anoestrus*.—Nos. 251, 258, 611, 554 and 639.

(iv) *Kangayam herd*.—Persistent corpus luteum—Nos. (781 A), (594-A), 892, 825, 845, 847, 707, 762 and 908.

Out of these, corpus luteum could not be enucleated in Nos. 845 and 847,

(v) *Gir herd*.—Anoestrus—Cow No. 31.

*Cross-bred*—

(1) No. 447—Cystic Degeneration.

(2) No. 450—Anoestrus.

All the above conditions are being promptly treated with good results.

A batch of Veterinary Assistant Surgeons of this Department who were undergoing training in Artificial Insemination were also trained by the F.A.O. Expert at the Livestock Research Station, Hosur, in the examination of sterility and pregnant cases for a period of five days.

A. These animals were auctioned.

28. *Livestock Research Station, Lam, Guntur*—(a) *Strength*.—The strength of livestock on 1st April 1953 was 311. There were 16 births and 15 receipts from outside. Thirteen animals were disposed of, 9 transferred to other stations and there were 20 deaths. The strength on 30th September 1953 was 300, as detailed below :—

| Breed.    | Cows. | Heifers. | Young bulls. | Breeding bulls. | Calves. | Work cattle. | Total. |
|-----------|-------|----------|--------------|-----------------|---------|--------------|--------|
| (1)       | (2)   | (3)      | (4)          | (5)             | (6)     | (7)          | (8)    |
| Ongole .. | 108   | 36       | 28           | 12              | 29      | 21           | 234    |
| Murrah .. | 18    | 22       | 21           | 4               | 1       | ..           | 66     |
| Total ..  | 126   | 58       | 49           | 16              | 30      | 21           | 300    |

(b) *Dairy*—(i) *Ongole herd*.—There were on an average 110.3 cows in the herd of which 37.2 remained in milk and yielded 48,899 lb. of milk with an individual daily average of 7.2 lb. of milk for the cows in milk, and 2.4 lb. for the herd as against 6.2 lb. and 2.7 lb., respectively in the year 1952-53.

Ongole cow No. 416 was a good performer and gave 4,193 lb. of milk during a lactation period of 349 days with a daily average yield of 12 lb.

(ii) *Murrah herd*.—On an average there were 17.5 animals in the herd of which 6 remained in milk and yielded 5,262 lb. of milk with a daily individual average of 4.8 lb. for the animals in milk and 1.7 lb. for the herd as against 7.2 lb. and 3.5 lb., respectively in 1952-53. The decrease in the yield was due to all the animals being in a state of advanced lactation. There were no good performers worth mentioning in the herd.

29. *Young Stock Farm, Chintaladevi*—(i) *Strength*.—The strength of livestock on 1st April 1953 was 177. There were 5 births and 6 receipts. Twenty-one animals were either transferred to other stations or sold away and there were 4 deaths. The strength on 30th September 1953 was 163 as detailed below :—

| Breed.     | Cows. | Heifers. | Young bulls. | Breeding bulls. | Calves. | Work cattle. | Total. |
|------------|-------|----------|--------------|-----------------|---------|--------------|--------|
| (1)        | (2)   | (3)      | (4)          | (5)             | (6)     | (7)          | (8)    |
| Ongole ..  | 14    | 60       | 52           | 3               | 8       | 21           | 158    |
| Scindhi .. | 1     | ..       | 4            | ..              | ..      | ..           | 5      |
| Total ..   | 15    | 60       | 56           | 3               | 8       | 21           | 163    |

(ii) *Dairy*.—On an average there were 16 cows in the herd of which 12 remained in milk and yielded 21,915 lb. of milk with a daily individual average of 10.1 lb. for the cows in milk and 7.6 lb. for the herd as against 6.9 lb. and 6.6 lb., respectively in 1952-53.

Particulars of two good performers are given below :—

| Number of the cow. | Total milk yield in lb. | Number of days in milk. | Daily average for the lactation. |
|--------------------|-------------------------|-------------------------|----------------------------------|
| 3 ..               | 3,092                   | 261                     | 11.8                             |
| 472 ..             | 4,471                   | 371                     | 12.0                             |

30. *Combined Sheep and Cattle Farm, Kurukuppi*—(a) *Strength*.—The strength of livestock on 1st April 1953 was 423. There were 50 births and 1 receipt from outside. Four animals were disposed of, 13 transferred to other stations and there were 11 deaths. The strength on 30th September 1953 was 446 as detailed below :—

| Breed.      | Cows. | Heifers. | Young bulls. | Breeding bulls. | Calves. | Work cattle. | Total. |
|-------------|-------|----------|--------------|-----------------|---------|--------------|--------|
| (1)         | (2)   | (3)      | (4)          | (5)             | (6)     | (7)          | (8)    |
| Hallikar .. | 157   | 67       | 102          | 5               | 59      | 39           | 429    |
| Murrah ..   | 7     | 3        | 1            | 1               | 5       | ..           | 17     |
| Total ..    | 164   | 70       | 103          | 6               | 64      | 39           | 446    |

(b) *Dairy*—(i) *Hallikar herd*.—There were on an average 134.23 cows in the herd of which 65.85 remained in milk and yielded 79,720.5 lb. of milk with an

individual daily average of 6.6 lb. of milk for the cows in milk and 3.2 lb. for the herd as against 7.5 lb. and 3.2 lb., respectively of the previous year.

Some of the good performers in the herd are given below :—

| Cow number. | Milk yield in lb. | Number of days in milk. | Daily average for the lactation in lb.. |
|-------------|-------------------|-------------------------|-----------------------------------------|
| 71 .. .. .  | 2,480             | 284                     | 8.7                                     |
| 176 .. .. . | 3,248.5           | 298                     | 10.9                                    |
| 163 .. .. . | 2,517.0           | 261                     | 9.6                                     |
| 90 .. .. .  | 2,364.0           | 251                     | 9.3                                     |
| 114 .. .. . | 2,569.0           | 251                     | 10.2                                    |

(ii) *Murrah herd*.—On an average, there were 7.5 cows in the herd of which 3.1 cows remained in milk and yielded 10,478 lb. of milk with a daily individual average of 17.2 lb. for the animals in milk and 7.9 lb. for the herd as against 13.7 lb. and 8.2 lb., respectively of the previous year.

Some of the good performers in the herd are given below :—

| Number of cow. | Total milk yield in lb. | Number of days in milk. | Daily average for the lactation in lb. |
|----------------|-------------------------|-------------------------|----------------------------------------|
| 107 .. .. .    | 8,179                   | 405                     | 20.2                                   |
| 167 .. .. .    | 5,379                   | 314                     | 17.2                                   |

31. *Dairy-cum-Bull Farm, Visakhapatnam*—(a) *Strength*.—The strength of livestock on 1st April 1953 was 602. There were 102 births (42 heifers and 60 bull-calves). Thirty-five animals were disposed of and there were 70 deaths. The strength on 30th September 1953 was 599 as detailed below :—

| Breed.       | Cows. | Heifers. | Young bulls. | Breeding bulls. | Calves. | Work cattle. | Total. |
|--------------|-------|----------|--------------|-----------------|---------|--------------|--------|
| (1)          | (2)   | (3)      | (4)          | (5)             | (6)     | (7)          | (8)    |
| Murrah .. .. | 318   | 67       | 63           | 7               | 115     | ..           | 570    |
| Ongole .. .. | ..    | ..       | ..           | ..              | ..      | 29           | 29     |
| Total .. ..  | 318   | 67       | 63           | 7               | 115     | 29           | 599    |

(b) *Dairy*—(i) *Murrah herd*.—There was no Jafferbadi herd. The stock consisted only of Murrah buffaloes. On an average, there were 320.7 animals in the herd of which 163.1 animals remained in milk and yielded 374,888.5 lb. of milk with a daily individual average of 12.6 lb. for the animals in milk and 6.5 lb. for the herd as against 11.9 lb. and 5.8 lb., respectively in the year 1952-53, recording an increased yield.

Particulars of some of the good performers are given below :—

| Number of the animal. | Total milk yield for the lactation in lb. | Number of days in milk. | Daily average yield for the lactation in lb. |
|-----------------------|-------------------------------------------|-------------------------|----------------------------------------------|
| 527 .. .. .           | 4,217                                     | 233                     | 18.1                                         |
| 560 .. .. .           | 5,978                                     | 378                     | 15.8                                         |
| 495 .. .. .           | 6,646                                     | 359                     | 18.5                                         |
| 498 .. .. .           | 4,844                                     | 292                     | 16.6                                         |
| 155 .. .. .           | 4,207                                     | 338                     | 12.5                                         |
| 319 .. .. .           | 4,338                                     | 310                     | 14.0                                         |
| 366 .. .. .           | 4,401                                     | 302                     | 14.6                                         |
| 37 .. .. .            | 6,170                                     | 394                     | 15.7                                         |
| 60 .. .. .            | 6,223                                     | 402                     | 15.5                                         |
| 181 .. .. .           | 5,815                                     | 376                     | 15.5                                         |
| 281 .. .. .           | 4,456                                     | 310                     | 14.1                                         |
| 317 .. .. .           | 5,924                                     | 357                     | 16.7                                         |
| 337 .. .. .           | 5,107                                     | 342                     | 15.0                                         |
| 503 .. .. .           | 5,912                                     | 298                     | 19.8                                         |

(ii) The standardisation of milk to 4 per cent and its pasteurization before distribution was continued. The milk is being sold only in sealed bottles. There are about 400 customers at the end of the period. The distribution is being done through a van at six centres which are popular.

(iii) Statement of milk and milk products sold during the period and the past three years are given below :—

| Particulars.                   | 1950-51. | 1951-52. | 1952-53. | 1953-54.<br>(1st April to 30th September 1953) |
|--------------------------------|----------|----------|----------|------------------------------------------------|
|                                | LB.      | LB.      | LB.      | LB.                                            |
| Whole milk produced .. .. .    | 649,402  | 860,388  | 774,201  | 371,889                                        |
| Whole milk sold .. .. .        | 25,156   | ..       | ..       | ..                                             |
| Standardized milk sold .. .. . | 460,486  | 638,311  | 483,177  | 228,979                                        |
| Butter sold .. .. .            | 3,160    | 7,127    | 14,029   | 7,019                                          |
| Ghee sold .. .. .              | 14,900   | 15,625   | 4,375    | 4,517                                          |

The sale position of milk and milk products in the period under report is very satisfactory.

(c) *Veterinary hospital and disease position*—*Veterinary Hospital*.—The particulars of cases treated, etc., in the Veterinary hospital attached to the farm during the period are given below :—

|                                                               |      |
|---------------------------------------------------------------|------|
| Number of cases treated .. .. .                               | 379  |
| Number of animals castrated .. .. .                           | Nil. |
| Daily average attendance .. .. .                              | 35.3 |
| Number of specimens examined .. .. .                          | 113  |
| Number of specimens sent to Madras Veterinary College .. .. . | 279  |

32. *District Livestock Farm, South Kanara*—(a) *Strength*.—The strength of livestock on 1st April 1953 was 264\*. There were 62 births, one transfer and 35 deaths during the period. The strength on 30th September 1953 was 290\* as detailed below :—

| Breed.         | Cows. | Heifere. | Young bulls. | Breeding bulls. | Calves. | Work cattle. | Total. |
|----------------|-------|----------|--------------|-----------------|---------|--------------|--------|
| (1)            | (2)   | (3)      | (4)          | (5)             | (6)     | (7)          | (8)    |
| Murrah .. ..   | 53    | 29       | 9            | 2               | 30      | ..           | 123    |
| Dharwar .. ..  | 6     | ..       | 5            | 1               | 4       | ..           | 16     |
| Scindhi .. ..  | 20    | 9        | 16           | 3               | 14      | ..           | 62     |
| Gir .. .. .    | 6     | 4        | 4            | 1               | 3       | ..           | 18     |
| Local .. .. .  | 20    | 15       | 2            | 1               | 14      | ..           | 52     |
| Hallikar .. .. | ..    | ..       | ..           | ..              | ..      | 19           | 19     |
| Total .. ..    | 105   | 57       | 36           | 8               | 65      | 19           | 290    |

\* NOTE.—These figures exclude particulars relating to the dogs in the farm, which have been omitted in this report.

(b) *Dairy*—(i) *Murrah herd*.—On an average there were 55.2 animals in the herd of which 34.2 remained in milk and yielded 88,586 lb. of milk with a daily individual average of 14.1 lb. for the animals in milk and 8.8 lb. for the herd as against 11.9 lb. and 8.3 lb., respectively in the year 1952-53.

Particulars of some of the good performers are given below :—

| Number of the animal. | Total milk yield for the lactation in lb. | Number of days in milk. | Daily average yield for the lactation in lb. |
|-----------------------|-------------------------------------------|-------------------------|----------------------------------------------|
| 28 .. .. .            | 5,111                                     | 317                     | 16.1                                         |
| 17 .. .. .            | 5,061                                     | 324                     | 15.3                                         |
| 22 .. .. .            | 5,206                                     | 349                     | 14.9                                         |

(ii) *Dharwar herd*.—On an average there were six animals in the herd of which 5.9 animals remained in milk and yielded 9,690 lb. of milk with a daily individual average of 8.9 lb. for the animals in milk and 8.8 lb. for the herd as against 5.6 lb. and 4.5 lb. respectively in the year 1952-53.

Particulars of two of the good performers in this herd are given below :—

| Number of the animal. | Total milk yield for the lactation in lb. | Number of days in milk. | Daily average yield for the lactation in lb. |
|-----------------------|-------------------------------------------|-------------------------|----------------------------------------------|
| 5 .. .. .             | 2,394                                     | 258                     | 9.3                                          |
| 2 .. .. .             | 2,106                                     | 272                     | 7.7                                          |

(iii) *Scindhi herd*.—On an average there were 20 cows in the herd of which 18 remained in milk and yielded 44,256 lb. of milk with a daily individual average of 13.6 lb. for the cows in milk and 12.1 lb. for the herd as against 11.1 lb. and 7.6 lb., respectively in the year 1952-53.

Particulars of some of the good performers are given below :—

| Number of the animal. | Total milk yield for the lactation in lb. | Number of days in milk. | Daily average yield for the lactation in lb. |
|-----------------------|-------------------------------------------|-------------------------|----------------------------------------------|
| 369 .. .. .           | 5,191                                     | 377                     | 13.8                                         |
| 249 .. .. .           | 4,307                                     | 325                     | 13.3                                         |
| 491 .. .. .           | 4,020                                     | 318                     | 12.6                                         |

(iv) *Gir herd*.—On an average there were six cows in this herd of which 5.5 remained in milk and yielded 11,508 lb. of milk with a daily individual average of 11.2 lb. for the cows in milk and 10.4 lb. for the herd as against 13.3 lb. and 7.9 lb., respectively in 1952-53.

Particulars of two good performers in the herd are given below :—

| Number of the animal. | Total milk yield for the lactation in lb. | Number of days in milk. | Daily average yield for the lactation in lb. |
|-----------------------|-------------------------------------------|-------------------------|----------------------------------------------|
| 7 .. .. .             | 3,206                                     | 296                     | 10.8                                         |
| 10 .. .. .            | 3,132                                     | 291                     | 10.8                                         |

(v) *Local herd*.—On an average there were 20 cows in the herd of which 14.4 remained in milk and yielded 7,139 lb. of milk with a daily individual average of 2.8 lb. for the cows in milk and 2 lb. for the herd as against 1.9 lb. and 0.8 lb. respectively in 1952-53. There were no good performers worth mentioning in this herd.

33. *District Livestock Farm, Malabar*—(a) *Strength*.—The strength of cattle on 1st April 1953 was 127. There were 15 births, 4 were received from outside, 2 animals were disposed of and one transferred to an outside station, and there were 9 deaths during the period. The strength on 30th September 1953 was 134 as detailed below :—

| Breed.         | Cows. | Heifers. | Young bulls. | Breeding bulls. | Calves. | Work Cattle. | Total. |
|----------------|-------|----------|--------------|-----------------|---------|--------------|--------|
| (1)            | (2)   | (3)      | (4)          | (5)             | (6)     | (7)          | (8)    |
| Murrah .. ..   | 23    | 14       | 15           | 3               | 17      | ..           | 72     |
| Dharwar .. ..  | 6     | 2        | ..           | 1               | 5       | ..           | 14     |
| Scindhi .. ..  | 5     | 1        | ..           | 7               | 5       | ..           | 20     |
| Kangayam .. .. | 3     | ..       | ..           | ..              | ..      | 18           | 21     |
| Mysore .. ..   | ..    | ..       | ..           | ..              | ..      | 4            | 4      |
| Local .. ..    | ..    | ..       | ..           | ..              | ..      | 2            | 2      |
| Sahiwal .. ..  | ..    | ..       | ..           | ..              | ..      | ..           | 1      |
| Total .. ..    | 37    | 17       | 17           | 12              | 27      | 24           | 134    |

(b) *Dairy*—(i) *Murrah herd*.—On an average there were 23.8 cows in the herd of which 15.0 remained in milk and yielded 40,538.5 lb. of milk with a daily individual average of 9.3 lb. for the cows in milk and 6.3 lb. for the herd as against 13.5 lb. and 6.6 lb., respectively in the year 1952-53.

(ii) *Dharwar herd*.—Out of six animals in the herd, 4.3 remained in milk on an average and yielded 5,736 lb. of milk, giving a daily individual average of 7.2 lb. for cows in milk and 5.2 lb. for the herd as against 7.7 lb. and 4.8 lb., respectively in 1952-53.

(iii) *Scindhi herd*.—Out of five cows in the herd 4.3 remained in milk, on an average, and yielded 8,494 lb. of milk with a daily individual average of 10.7 lb. for the cows in milk and 9.2 lb. for the herd as against 14.1 lb. and 7.2 lb., respectively in the year 1952-53.

(iv) The fall in average in all the breeds was mainly due to extreme drought condition that prevailed during the period.

34. *District Livestock Farm, Pudukkottai*—(a) *Strength*.—The strength of livestock on 1st April 1953 was 128. There were eleven births and one death, eight animals were transferred or disposed of and two animals received from other stations. The strength on 30th September 1953 was 132 as detailed below :—

| Breed.           | Cows. | Heifers. | Young bulls. | Breeding bulls. | Calves. | Work cattle. | Total. |
|------------------|-------|----------|--------------|-----------------|---------|--------------|--------|
| (1)              | (2)   | (3)      | (4)          | (5)             | (6)     | (7)          | (8)    |
| Scindhi .. ..    | 14    | 14       | 6            | 3               | 4       | ..           | 41     |
| Kangayam .. ..   | 24    | 12       | 15           | 6               | 5       | 7            | 69     |
| Sahiwal .. ..    | 2     | ..       | ..           | ..              | 1       | ..           | 3      |
| Cross-bred .. .. | 5     | 3        | 2            | ..              | 6       | 1            | 17     |
| Murrah .. ..     | ..    | ..       | ..           | 2               | ..      | ..           | 2      |
| Total .. ..      | 45    | 29       | 23           | 11              | 16      | 8            | 132    |

(b) *Dairy*—(i) *Scindhi herd*.—On an average there were 15.4 cows in the herd of which 7.2 remained in milk and yielded 12,738 lb. of milk with an individual daily average of 9.7 lb. for the cows in milk and 4.5 lb. for the herd as against 10.0 lb. and 6.3 lb. respectively in 1952-53.

One good performer was cow No. 114 which yielded 4,714 lb. in a lactation period of 352 days with a daily average yield of 13.4 lb.

(ii) *Kangayam herd*.—On an average there were 26 cows in the herd of which 11.9 remained in milk and yielded 13,304 lb. of milk with an individual daily average of 6.4 lb. for the cows in milk and 2.8 lb. for the herd as against 5.5 lb. and 4.0 lb. respectively in 1952-53. The decrease in the average yield for the herd during the period was due to the proportion of cows in milk being less during the period than that in 1952-53.

Particulars of some of the good performers in this herd are given below :—

| Number of the animal. | Total milk yield in lb. | Number of days in milk. | Daily average for lactation in lb. |
|-----------------------|-------------------------|-------------------------|------------------------------------|
| 808 .. .. .           | 2,420                   | 427                     | 5.7                                |
| 885 .. .. .           | 1,978                   | 348                     | 5.7                                |
| 49 .. .. .            | 1,623                   | 263                     | 6.2                                |

(iii) *Sahiwal*.—Out of an average of two cows in this breed, 1.5 cows remained in milk and yielded 3,413 lb. of milk with an individual daily average of 12.9 lb. for the cows in milk and 9.3 lb. for the herd as against 8.5 lb. and 3.4 lb., respectively in 1952-53. The increase in the average was due to the proportion of milking cows to the herd being more than that in 1952-53. No animal in this herd completed lactation during the period covered by this report.

(iv) *Cross-bred*.—On an average there were 4.2 cows in this herd of which 2.9 remained in milk and yielded 6,770 lb. of milk with an individual daily average of 12.2 lb. for the cows in milk and 8.7 lb. for the herd as against 12.5 lb.

and 8.6 lb. respectively in 1952-53. No cow completed lactation during the half year.

35. *Mortality in all farms.*—There has been a total mortality of 166 animals in all the farms during the period of which 45 were in white cattle and 121 in buffaloes.

Out of 45 deaths in cattle, 17 were among young calves. Out of 121 deaths in buffaloes, 59 deaths in calves account d for. The mortality among calves at the Dairy-cum-Bull Farm, Visakhapatnam, was 32. The mortality which was more in the previous years has been brought under control at the Dairy-cum-Bull Farm where the rainfall recorded during the period under report was 22.95 inches as against 13.87 inches of the corresponding period of the previous year.

Out of 31 deaths affiong Murrah buffaloes at the District Livestock Farm, South Kanara, 21 were among calves during the period under report when the total rainfall was 113.68 inches. To reduce mortality among young Murrah calves, in the wet season, the mating period of the she-buffaloes had been changed in such a way as to regulate the calving only in the dry period of the year. The results are being watched.

36. *Season and crop*—(a) *Livestock Research Station, Hosur Cattle Farm*—(i) *Rainfall and irrigation.*—The total rainfall during the period was 23.67 inches in 46 days. The season was favourable in the beginning. Fodder crops were sown and perennial grasses planted in about 85 acres. Later, there being no rains after sowing the standing crops had to be irrigated which was possible as the tank had enough water.

(ii) *Pasture.*—The total area under pasture was 1,079 acres. About 30 acres of this were under Guinea grass, Buffalo grass, Kolakattai, etc., and the rest under spear grass. Due to the early rains there was good growth in the beginning but later due to failure of rains, the grasses began to wither and the prospects for hay-making (in the second-half year) were not very bright.

(iii) *Silage.*—Silage was produced with fodder crops, such as cholam, maize Teosinte and grasses. The total quantity ensilaged was 312,641 lb.

(iv) *Fodder supply.*—The supply of green fodder was satisfactory throughout. The total quantity of fodder issued during the period was 19,64,819 lb.

(b) *Livestock Research Station, Lam, Guntur*—(i) *Rainfall.*—The total rainfall recorded during the period was 20.43 inches in 51 days.

(ii) *Pasture and cultivation.*—Out of a total area of 357.05 acres, an area of 210.84 acres is under cultivation, the remaining portions being under pasture. The south-west monsoon having been favourable, sowings were completed in time and fodder position for the rest of the year is satisfactory.

(c) *Young Stock Farm, Chintaladevi*—(i) *Rainfall.*—The total rainfall recorded was 15.09 inches in 21 days between May and September 1953.

(ii) *Cultivation, etc.*—Out of a total of 762 acres, an area of only 57.03 acres was brought under cultivation during the period as the monsoon was weak.

The total harvested yield of fodder amounted to 39,000 lb. during the period under report.

(d) *Combined Sheep and Cattle Farm, Kurukuppi*—*Rainfall.*—The total rainfall recorded during the south-east monsoon period was 9.35 inches. The seasonal conditions were generally encouraging.

*Cultivation.*—The area under irrigated cultivation was 64 acres and that under non-irrigated cultivation 108 acres. The quantity of fodder harvested was 768,349 lb. from irrigated lands. The crops in non-irrigated lands were not harvested before the end of September 1953.

(e) *Dairy-cum-Bull Farm, Visakhapatnam*—(i) *Rainfall and irrigation.*—The total rainfall during the period was 22.95 inches in 32 days as against 13.87 inches spread over in 42 rainy days of the previous year. About a dozen of new picotahs were erected and the total area maintained under irrigation was about 35.00 acres. Two oil engine pumpsets also supplemented the rainfall for irrigation.

The area under perennial grasses was increased from 11.55 acres to 15.60 acres, thus augmenting a constant supply of green fodder to some extent.

(ii) The following quantities of fodder crops were harvested and fed to cattle during the period :—

|                                | LB.     |
|--------------------------------|---------|
| (1) Guinea grass .. .. .       | 122,961 |
| (2) Napier grass .. .. .       | 8,745   |
| (3) Rhodes .. .. .             | 46,481  |
| (4) Buffalo grass .. .. .      | 39,521  |
| (5) Kolukattai .. .. .         | 1,082   |
| (6) Panicum antidotah .. .. .  | 3,845   |
| (7) Jonna and mixtures .. .. . | 403,421 |
| (8) Sunnhemp .. .. .           | 1,150   |
| (9) Teosinte .. .. .           | 3,701   |
| (10) Berseem .. .. .           | 200     |
| (11) Sesbania .. .. .          | 2,003   |
| (12) Pigeon pea .. .. .        | 672     |
| Total ..                       | 633,782 |

(f) *District Livestock Farm, South Kanara*—(i) *Rainfall.*—The total rainfall for the period was 113.68 inches in 89 days.

(ii) *Pasture and cultivation.*—Out of a total area of 760 acres an area of 500 acres is under pasture for production of hay and silage.

The area under cultivation was about 28 acres. The following quantities of fodder crops were harvested and fed to cattle during the period :—

| Name of crop.        | Area harvested in acres. | Yield in lb. |
|----------------------|--------------------------|--------------|
| Maize .. .. .        | 1.00                     | 2,500        |
| Guinea grass .. .. . | 4.75                     | 81,800       |
| Sunn hemp .. .. .    | 4.05                     | 27,410       |

(g) *District Livestock Farm, Malabar*—(i) *Rainfall.*—The total rainfall for the period was 87.2 inches in 93 days.

(ii) *Pasture and cultivation.*—The total area under cultivation was about 70 acres (both irrigated and non-irrigated) and that under pasture 81 acres.

(iii) Details of crops harvested during the period are given below :—

| Kind of fodder.                    | Area harvested in acres.             | Yield obtained in lb. |
|------------------------------------|--------------------------------------|-----------------------|
| (i) Irrigated garden lands ..      | Different kinds of grass—5.45        | 124,779               |
| (ii) Non-irrigated garden lands .. | Different kinds of straw, etc.—38.82 | 495,970               |
| (iii) Pasture .. .. .              | Different kinds of grass—14.6        | 129,455               |

(iv) *Silage making.*—Silage was made in six silo pits, the total quantity made being 225,337 lb.

(h) *District Livestock Farm, Pudukkottai.*—The entire area of 4.02 acres available in this farm for fodder cultivation was under fodder crops during the period. The quantity of green fodder produced was 186,994 lb.

37. *Prevention of soil erosion in Livestock Farms.*—Suitable measures were taken to prevent soil erosion in some of the Livestock Farms where such steps were necessary as indicated below :—

(a) *District Livestock Farm, South Kanara.*—The rainfall in this place is high and the sun severe. The land is full of ups and downs and is devoid of vegetation. The soil which is already poor is subject to soil erosion and hence measures to prevent soil erosion have to be taken in this farm. Measures so taken are as given below :—

- (1) Strengthening the existing bunds.
- (2) Planting Guinea grass and Napier grass slips along bunds.

(b) *District Livestock Farm, Malabar.*—Contour bunds were raised and breaches in bunds repaired. Cuttings of Kuduzuvine were planted on the bunds and slopes to prevent soil erosion.

*District Livestock Farm, Pudukkottai.*—Canal bunds were terraced and buffalo grass transplanted there in order to prevent soil erosion.

38. The cost of management of the several Livestock Farms during 1st April to 30th September 1953 is furnished below :—

| Farms.<br>(1)                                     | Receipts.<br>(2) |    |    | Expenditure.<br>(3) |    |    |
|---------------------------------------------------|------------------|----|----|---------------------|----|----|
|                                                   | RS.              | A. | P. | RS.                 | A. | P. |
| 1 Livestock Research Station, Hosur Cattle Farm.  | 38,679           | 12 | 8  | 1,91,238            | 2  | 9  |
| 2 Livestock Research Station, Lam (Chintaladevi). | 9,196            | 3  | 6  | 1,11,445            | 4  | 9  |
| 3 Combined Sheep and Cattle Farm, Kurukuppi.      | 6,500            | 0  | 0  | 1,12,815            | 5  | 6  |
| 4 Dairy-cum-Bull Farm, Visakhapatnam.             | 1,08,423         | 3  | 6  | 2,34,181            | 3  | 5  |
| 5 District Livestock Farm, South Kanara.          | 35,965           | 0  | 3  | 67,984              | 1  | 9  |
| 6 District Livestock Farm, Malabar ..             | 7,558            | 10 | 3  | 53,184              | 4  | 6  |
| 7 District Livestock Farm, Pudukkottai.           | 6,790            | 12 | 0  | 34,659              | 12 | 9  |
| 8 Salvage Farm, Kambakkam, Kancha.                | 6,754            | 15 | 0  | 36,960              | 6  | 3  |
| 9 Sheep Farm, Ootacamund .. ..                    | 85               | 9  | 6  | 15,677              | 3  | 0  |
| Total ..                                          | 2,19,954         | 2  | 8  | 8,58,145            | 12 | 8  |

#### 39. Livestock Research Station, Hosur Cattle Farm.—

|                                              | RS.      | A. | P. |
|----------------------------------------------|----------|----|----|
| Receipts .. .. .                             | 38,679   | 12 | 8  |
| Expenditure on maintenance of cattle .. .. . | 1,22,089 | 14 | 10 |

The farm issued 19 bulls during the period as against 65 bulls during 1952-53. In addition 147 head of cattle which were not up to the mark required for breeding were sold. At the end of the period, the farm had 269 young bulls (148 Scindhi, 88 Kangayam and 33 Gir). The discontinuance of the male stock distribution scheme during this period also especially when a large number of bulls were available closed an outlet for their disposal. A market for Scindhi and Gir bulls outside the State is being explored.

The farm has built up a fine herd of Scindhis which continued to be highly commended by visitors from outside the State.

#### 40. Livestock Research Station, Lam and Chintaladevi.—

|                                              | RS.    | A. | P. |
|----------------------------------------------|--------|----|----|
| Receipts .. .. .                             | 9,196  | 3  | 6  |
| Expenditure on maintenance of cattle .. .. . | 82,996 | 10 | 6  |

During the period eleven bulls were issued. The young stock at the end of the period consisted of 80 Ongoles, 21 Murrahs and 4 Scindhis.

The introduction of the Murrahs and grading of local buffaloes in Guntur, Krishna, East and West Godavari districts have been entirely due to the bulls issued from this farm.

#### 41. Combined Sheep and Cattle Farm, Kurukuppi.—

|                                              | RS.      | A. | P. |
|----------------------------------------------|----------|----|----|
| Receipts .. .. .                             | 6,500    | 0  | 0  |
| Expenditure on maintenance of cattle .. .. . | 1,12,315 | 5  | 6  |

The farm issued two bulls during the period for stud purposes. The young stock on the farm numbered 103 bulls including a Murrah.

#### 42. Dairy-cum-Bull Farm, Visakhapatnam.—

|                                              | RS.      | A. | P. |
|----------------------------------------------|----------|----|----|
| Receipts .. .. .                             | 1,08,423 | 3  | 6  |
| Expenditure on maintenance of cattle .. .. . | 1,42,283 | 11 | 3  |

The farm issued one bull during the period and the strength of young bulls at the end of the period was 63.

#### 43. District Livestock Farm, Koila, South Kanara,—

|                                              | RS.    | A. | P. |
|----------------------------------------------|--------|----|----|
| Receipts .. .. .                             | 35,965 | 0  | 3  |
| Expenditure on maintenance of cattle .. .. . | 44,749 | 12 | 0  |

The farm is situated at a distance of about 40 miles from Mangalore and has been able to continue to market its milk to Mangalore. This has contributed to the receipts.

The farm issued one bull and the number of young bulls in the different breed is 36.

#### 44. District Livestock Farm, Malabar.—

|                                              | RS.    | A. | P. |
|----------------------------------------------|--------|----|----|
| (a) Receipts .. .. .                         | 7,558  | 10 | 3  |
| Expenditure on maintenance of cattle .. .. . | 22,048 | 6  | 10 |

(b) The approach road to the farm is still under construction by the Public Works Department. Much pioneering work has been done during the period. Twenty five acres of scrub jungles were newly reclaimed by human labour.

(c) A small herd of Sindhi and Murrah with a few Tellicherry goats were continued to be maintained. This farm has not been so successful as the South Kanara farm, in disposal of milk due to lack of facilities. The farm issued one bull for stud purpose. At the end of the period the farm had a strength of 17 young bulls in the different breeds.

#### 45. District Livestock Farm, Pudukkottai.—

|                                              | RS.    | A. | P. |
|----------------------------------------------|--------|----|----|
| Receipts .. .. .                             | 6,790  | 12 | 0  |
| Expenditure on maintenance of cattle .. .. . | 21,965 | 4  | 3  |

The farm has only 7 acres of land situated in the town. The proposal to acquire 1,000 acres of grazing areas in the nearby reserve forest is under consideration. If the additional area is secured, the farm can be developed into a dairy farm as there is a good market for milk.

#### 46. Salvage Farm at Kambakkam Kancha.—

|                     | RS.    | A. | P. |
|---------------------|--------|----|----|
| Receipts .. .. .    | 6,754  | 15 | 0  |
| Expenditure .. .. . | 36,960 | 6  | 3  |

#### CATTLE IMPROVEMENT AND DEVELOPMENT.

47. (1) *Bulls issued from Government Farms.*—The number of bulls issued from each of the livestock farms for stud purposes during the period is given below :—

| Serial number and name of the farm.                       | Number of bulls issued. |
|-----------------------------------------------------------|-------------------------|
| (1) Livestock Research Station, Hosur Cattle Farm .. .. . | 19                      |
| (2) Livestock Research Station, Lam, Guntur .. .. .       | 11                      |
| (3) Combined Sheep and Cattle Farm, Kurukuppi .. .. .     | 2                       |
| (4) Dairy-cum-Bull Farm, Visakhapatnam .. .. .            | 1                       |
| (5) District Livestock Farm, Malabar .. .. .              | 1                       |
| (6) District Livestock Farm, South Kanara .. .. .         | 3                       |
| (7) District Livestock Farm, Pudukkottai .. .. .          | Nil.                    |
| (8) Young Stock Farm, Chintaladevi .. .. .                | Nil.                    |

(2) *Kangayam Cattle Improvement Scheme.*—(a) This is an Indian Council of Agricultural Research Scheme which was started on 31st July 1942 and has been functioning since then in the cattle farm of the Pattagar of Palayakottai at Palayakottai. The object of the scheme is to improve the milking qualities of the Kangayam cow without impairing the draught qualities of the males by selective breeding and management.

The strength of livestock as on 1st April 1953 and 30th September 1953 is given below :—

|                                          | Strength<br>on 1st April<br>1953. | Strength<br>on 30th September<br>1953. |
|------------------------------------------|-----------------------------------|----------------------------------------|
| Cows in milk .. .. .                     | 59                                | 67                                     |
| Dry and nearing parturition cows .. .. . | 53                                | 55                                     |
| Heifers over two years old .. .. .       | 42                                | 39                                     |
| Heifers over one year old .. .. .        | 21                                | 31                                     |
| Heifer calves below one year old .. .. . | 35                                | 36                                     |
| Young bulls over two years old .. .. .   | 33                                | 25                                     |
| Young bulls over one year old .. .. .    | 30                                | 37                                     |
| Bull calves below one year old .. .. .   | 38                                | 50                                     |
| Bullocks .. .. .                         | 52                                | 52                                     |
| Breeding bulls .. .. .                   | 4                                 | 4                                      |
| Total .. .. .                            | 367                               | 393                                    |

(b) *Cows in milk.*—On an average there were 67.4 cows in milk every month yielding 10,177 lb. of milk per month with a daily individual average of 5 lb. of milk as against 5.7 lb. in 1952-53.

(c) *Calvings.*—There were 47 births out of which 28 were bull calves and 19 heifer calves. All the calves were normal. The average birth weights, etc., of calves are given below :—

|                                               | LB.  |
|-----------------------------------------------|------|
| Average birth weight of a calf .. .. .        | 44.5 |
| Average birth weight of a bull calf .. .. .   | 44.7 |
| Average birth weight of a heifer calf .. .. . | 44.4 |
| Maximum birth weight of a calf .. .. .        | 55.0 |
| Minimum birth weight of a calf .. .. .        | 33.0 |

(d) *Experimental work.*—Records of milk yields of cows, fat content in milk and pedigree are being maintained.

The udder of each pregnant heifer is massaged about 6 to 8 weeks before calving with a view to stimulating milk secretion and remove nervousness of the animals when they come to lactation.

The birth weight of calves is recorded and the weight of each calf taken every fortnight in order to study the rate of growth.

Work bullocks are tested for mhothe work, ploughing fields and dragging loads and records are being maintained. For this purpose, a committee of local experts has been constituted.

(3) *Scheme for the salvage of dry cows.*—This scheme is worked at the salvage farm, Kambakkam. The number of cows on 1st April 1953 was 247 and that on 30th September 1953, 265. Particulars of admission, etc., during the period are given below :—

|                                                      |     |
|------------------------------------------------------|-----|
| Number of cows as on 1st April 1953                  | 247 |
| Admissions .. .. .                                   | 159 |
| Number of cows returned after calving .. .. .        | 96  |
| Number of cows returned before calving .. .. .       | 23  |
| Number of cows returned as unfit for salvage .. .. . | 19  |
| Number of cows which died .. .. .                    | 3   |
| Number of cows as on 30th September 1953 .. .. .     | 265 |

*Bulls and services.*—There were four Ongole bulls, one Scindhi and one Gir in beginning. One Ongole bull was replaced by one Scindhi bull during the period. The total number of services performed by the bulls was 153.

*Pasture.*—Due to want of rains, grazing was not sufficient till July 1953 and all the animals had to be fed with concentrates. Timely rains in June and July improved the condition of the pastures after July.

*Agricultural operations.*—Agricultural operations were undertaken during the period under report immediately after rains and fodder crops were raised. Actually, only 12.48 acres were available for raising fodder crops including 1.9 acres within the farm and cholam and maize were raised in the area of 10.58 acres outside the farm, while Australian drought resistant grass which was raised only in about 60 cents last year, was extended to the entire available area of 1.9 acres within the farm. Cholam and maize came up fairly while the Australian drought resistant grass came up very well and it is now well established in the farm. The first cutting of the grass commenced on 13th September 1953 and till the end of the period (i.e.) 30th September 1953, 6,085 lb. were cut and fed to animals.

(4) *Artificial insemination.*—Artificial insemination work continued to be done in all the five centres, viz., Madras, Coimbatore, Guntur, Ootacamund, and Madurai (Tallakulam) under the control of the Special Officer, Artificial Insemination, Madras.

Particulars of the number of bulls used, collections and inseminations made, etc., at the above Artificial Insemination Centres are given below :—

| Name of the artificial<br>insemination<br>centre. | Number<br>of bulls<br>used. | Number<br>of semen<br>collections<br>made. | Number of<br>inseminations<br>carried<br>out. | Number of<br>cases of<br>pregnancies<br>verified. | Number of<br>artificial<br>insemination<br>calves<br>inspected. |
|---------------------------------------------------|-----------------------------|--------------------------------------------|-----------------------------------------------|---------------------------------------------------|-----------------------------------------------------------------|
| (1)                                               | (2)                         | (3)                                        | (4)                                           | (5)                                               | (6)                                                             |
| Madras .. .. .                                    | 7                           | 146                                        | 1,820                                         | 463                                               | 107                                                             |
| Coimbatore .. .. .                                | 7                           | 160                                        | 2,457                                         | 323                                               | 204                                                             |
| Guntur .. .. .                                    | 5                           | 42                                         | 176                                           | 158                                               | 29                                                              |
| Ootacamund .. .. .                                | 4                           | 91                                         | 485                                           | 160                                               | 202                                                             |
| Madurai .. .. .                                   | 3                           | 89                                         | 344                                           | 87                                                | ..                                                              |

*Re-inseminations.*—About 10 per cent of the inseminated animals came back for re-inseminations at various intervals. There were a number of cases in which cows that had not conceived through natural services were successfully inseminated.

*Experimental work—Semen studies.*—All the semen samples collected were evaluated for various characteristics. Representative samples were taken periodically and their morphology and concentration studied. The semen of all the breeding bulls used for artificial insemination was of a high quality. Study of the percentage of abnormal sperms was undertaken in the semen samples used for artificial insemination work and the percentage was found to be within the normal range.

*Sterility cases handled.*—A routine examination of the cows brought for artificial insemination was carried out and it was observed that granular vaginitis, cervicitis, cystic ovaries, anoestrous conditions, endometritis and pyometra were mainly responsible for the large percentage of non-conception among the cows. Whenever such cases were met with, the owners were advised to have the cases treated at the nearest Veterinary Institution. The total number of cases of infertility handled during the period was 167. By the study of a number of samples it was found that the sperms in an average sample of semen preserved with egg yolk citrate dilution were active till about the fifth day of collection after which they began to decline in motility. Most of the samples of semen were utilized within three days at the various centres.

(5) *Key village scheme*—(a) *Key village centres*.—There were seven key village centres on 1st April 1953 as shown below. There were no additions during the period 1st April 1953 to 30th September 1953.

| Name of key village (Artificial Insemination Centre). | Breeding tract.  | Number of key villages attached to the centre. |
|-------------------------------------------------------|------------------|------------------------------------------------|
| (1)                                                   | (2)              | (3)                                            |
| Ammanabrole .. .. .                                   | Ongole .. .. .   | 4                                              |
| Nidubrole .. .. .                                     | Ongole .. .. .   | 4                                              |
| Vellakoil .. .. .                                     | Kangayam .. .. . | 6                                              |
| Kangayam .. .. .                                      | Kangayam .. .. . | 2                                              |
| Anamalai (Cinchona) .. .. .                           | Scindhi .. .. .  | 2                                              |
| Anamalai (Valparai) .. .. .                           | Scindhi .. .. .  | 2                                              |
| Livestock Research Station, Hosur Cattle Farm.        | Hallikar .. .. . | 2                                              |

Details of work done in the above mentioned Key Village Centres are tabulated below:—

| Name of key village (Artificial Insemination Centre). | Number of bulls in the Centre and Key Villages. | Number of semen collections made. | Number of inseminations done. | Number of natural services performed. |
|-------------------------------------------------------|-------------------------------------------------|-----------------------------------|-------------------------------|---------------------------------------|
| (1)                                                   | (2)                                             | (3)                               | (4)                           | (5)                                   |
| Ammanabrole .. .. .                                   | 6                                               | 52                                | 146                           | 58                                    |
| Nidubrole .. .. .                                     | 4                                               | 47                                | 99                            | 116                                   |
| Vellakoil .. .. .                                     | 8                                               | 56                                | 292                           | 273                                   |
| Kangayam .. .. .                                      | 7                                               | 98                                | 296                           | 155                                   |
| Anamalai (Cinchona) .. .. .                           | 7                                               | 21                                | 65                            | 39                                    |
| Anamalai (Valparai) .. .. .                           | 9                                               | ..                                | 2                             | 10                                    |
| Hosur Cattle Farm .. .. .                             | 9                                               | 72                                | 217                           | 75                                    |

In addition to artificial insemination work done at the key village centres semen is being taken to sub-centres and artificial insemination work done in the villages also.

Inseminated cows are periodically verified for pregnancy and re-inseminations done wherever necessary.

Infertile cases with infantile genitalia and cows that had calved once or twice but not come to heat subsequently with atrophy of the genitalia have been treated successfully by feeding them with germinated gram.

(b) *Key farm centres in private institutions*.—The six key farm centres opened in 1952-53 continued to function during the period as shown below:—

|                        |                                        |
|------------------------|----------------------------------------|
| Palayakottai .. .. .   | Palayakottai cattle farm.              |
| Neikarapatti .. .. .   | Narendra dairy farm.                   |
| Idayakottai .. .. .    | Edayakottai cattle farm.               |
| Kilamoongiladi .. .. . | Ghandi Ashram.                         |
| Valarpuram .. .. .     | Madras Co-operative Milk Supply Union. |
| Kilacheri .. .. .      |                                        |

Details of work done in the above key farm centres are given below:—

| Name of key farm (Artificial Insemination Centre). | Number of bulls stationed at the centre. | Number of natural services done. | Number of semen collections made. | Number of inseminations done. |
|----------------------------------------------------|------------------------------------------|----------------------------------|-----------------------------------|-------------------------------|
| Palaymkottai .. .. .                               | 6                                        | 389                              | 24                                | 44                            |
| Neikarapatti .. .. .                               | 7                                        | 104                              | 125                               | 533                           |
| Idayakottai .. .. .                                | 6                                        | 42                               | 61                                | 326                           |
| Kilamoongiladi .. .. .                             | 6                                        | 44                               | 38                                | 121                           |
| Valarpuram .. .. .                                 | 6                                        | 1                                | 16                                | 87                            |
| Kilacheri .. .. .                                  | 6                                        | 17                               | 51                                | 157                           |

(6) *Village Livestock Improvement Scheme*.—The general features of the scheme out by this department and through Co-operative Societies are that all the

unwanted male stock in the area should be castrated and only the services of the approved bulls be made available to the cows in the area. The animals around the area should be protected against all cattle diseases. The cows and the progeny should be tattooed and necessary records with regard to breeding, pedigree, and production, etc., be maintained. The scheme also provides for payment of a subsidy of Rs. 5 per mensem for heifer calves born to the cows registered for proper maintenance.

The firkas which have been allotted to this department for working this scheme are Saliamangalam (Tanjore district), Malli (Ramanathapuram district), Kumbala (South Kanara district), Alur (Bellary district) and Dendalur (West Godavari district).

A summary of work done by this department in the above centres is given below:—

(1) *Saliamangalam*.—Three Umblacheri breeding bulls are stationed at this centre. During the period of this report these bulls performed 141 services; 39 calves were born and 14 inspected in the area during the period. Thirteen animals were registered, 36 scrub bulls castrated. The Livestock Improvement Act is in force in this area.

(2) *Malli*.—Two Kangayam and two Murrah buffalo bulls are stationed here of which two (one Kangayam and one Murrah buffalo bull) did not commence serving. The other two bulls served 39 animals. The number of cows and buffaloes registered were 39 and 29 castrations were done. The Livestock Improvement Act was in force in this area.

(3) *Kumbala*.—The buildings and equipment have been made ready but work has not yet started. The area is under the Community Project Administration. The question as to whether the scheme should now be worked by this department or by the Community Project Department has not been decided.

(4) *Dendalur*.—The working of the scheme was not started during the period under report.

(5) *Alur*.—The three Hallikar breeding bulls stationed at Alur under the scheme continued to serve the cows of the seven villages covered by the scheme. Ninety-five services were performed by the bulls during the period and 54 calves were born to the bulls. One scrub bull was castrated during the period. Five hundred and fifty-four cows were registered under the scheme. Nineteen calves were registered for subsidy. The Livestock Improvement Act was enforced in the area.

*Sugali cattle and aid to Sugalis in Kurnool district*.—Two Ongole bulls were stationed at Sugalimeta during the period for the benefit of the Sugalis. The number of services performed was 12.

There is one stockman-compounder specially sanctioned for improvement of Sugali cattle. The total expenditure incurred during the period was Rs. 576-0-9.

*Ongole Cattle Breeders' Association*.—The Ongole Cattle Breeders' Association sanctioned in G.O. Ms. No. 1523, Development, dated 4th April 1951, continued to function during the period under report.

The association has enlisted 130 breeders as new members during the period and it had a total membership of 581 breeders at the end of the period under report. Three Ongole bulls were maintained at stud. Thirty-five scrub bulls were castrated, 84 non-contagious cases were treated and 2,262 cattle were protected against rinderpest. Nine Ongole bulls were sold through this association. Seven hundred and nine Ongole cattle of the breeders which were tattooed and registered continued to be in the Central Herd book during the year. The requirements of the Ongole cattle for foreign Governments were brought to the notice of the association.

*Co-operative cattle breeding association, societies, etc.*—(i) The Anamalai Hills Cattle Society continued to work for the improvement of the Scindhi breed. Two Key village artificial insemination centres are also working in this place, one at Cinchona and the other at Valparai.

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(ii) The Anchetty Cattle Breeding Society in Salem district maintains six bulls of which four have been included in the premium scheme. The total number of services performed by the bulls was 84.

(iii) There is a Co-operative Cattle Breeding Society at Odugathur in North Arcot district. This was started in 1949 with six bulls. But during the period under report there were only two bulls and even these two bulls did not perform any service as they are not being maintained properly. This society is not functioning satisfactorily.

(iv) The Kalasapakkam Co-operative Cattle Breeding Society (in North Arcot district) also continued to function. There are two Kangayam bulls owned by this society, and included in the premium scheme. The total number of services done by both the bulls during the period was 37.

(v) The Kannivadi Cattle Breeding Society (in Madurai district) owns ten bulls distributed to suitable custodians. These bulls have been included in the premium scheme. A stockman-compounder has been specially sanctioned for this society.

(vi) The Co-operative Cattle Breeding Association, Anapartti (East Godavari district) has two Murrah buffalo bulls of which one has been included in the premium scheme.

(vii) In Guntur district, there is a Co-operative Cattle Breeding Society at Devarampadu which owns an Ongole bull. Besides this, there are two Co-operative Cattle Breeding and Marketing Societies (functioning under the Co-operative Department) one in Ongole taluk and the other in Narasaraopet taluk.

(viii) There is a Co-operative Cattle Breeding Society in Alur firka (of Nellore district) which owns 6 stud bulls.

(ix) The Co-operative Cattle Breeding Society at Panyam (in Kurnool district) owns two Ongole bulls both of which are in the premium scheme.

**Bulls under premium scheme.**—At the end of the period under report there were 723 bulls under premium scheme. They performed 26,005 services. Eight thousand seven hundred and eighty-six calves were born and 5,999 calves were inspected by the staff during the period.

**Grants in aid to district boards—Coimbatore District Board.**—(a) During the period under report this District Board purchased 50 bulls at a total cost of Rs. 39,180 and distributed them to the ryots. The grant given by Government for this purpose was Rs. 10,000.

(b) The total number of bulls in this scheme as on 30th September 1953, was 63. During the period these bulls served 699 animals. The number of calves born during the period was 270. No other district board availed of this grant during the period.

**Government Malestock Distribution Scheme.**—No bulls were distributed under this scheme during the period. The total number of bulls (that had been distributed in previous years) under this scheme as on 30th September 1953 was 309 and they performed 12,079 services, 3,992 calves were born and 2,494 calves were inspected during the period.

The number of bulls stationed in Veterinary Institutions for stud purpose as on 30th September 1953 was 127. They performed 3,561 services, 1,606 calves were born and 1,144 calves were inspected during the period.

**Other schemes—(i) Bulls with Hill Tribes, etc.**—One Ongole bull given to Sri Gundumuthadu belonging to the Hill Tribe of Tunikichervu village (Bhadrachalam taluk) in 1951 continued to be maintained by the custodian. Six services were performed by the bull and 7 calves were born during the period under report.

(ii) **Koya Uplift Scheme.**—Two Ongole bulls distributed under this scheme continued during the period. They performed 100 services. The number of calves born during the period was 40.

(iii) **Agency Development Scheme.**—Under this scheme there were 5 Ongole, 1 Scindhi, 2 Gir and 4 Murrah buffalo bulls on 1st April 1953. One Gir and 2 Murrah buffalo bulls died during the period. The number of bulls on 30th September 1953 was 9. The bulls performed 69 services during the period. Fifty-three calves were born and 20 inspected during the period.

(iv) **Toda welfare.**—There were 10 Jafferbadi buffaloes and 3 calves with the Todas on 1st April 1953. Out of these, 2 buffaloes were disposed of by sale in auction and 2 calves died during the period. There were 6 buffaloes and one calf with the Todas on 30th September 1953.

It is reported that the Todas take little interest in the buffaloes entrusted to their care under the scheme.

The number of approved bulls in this State and the services performed during the year 1952-53 and for the period 1st April 1953 to 30th September 1953 are furnished below :—

|                       | 1952-53. | 1st April to 30th September 1953. |
|-----------------------|----------|-----------------------------------|
| Number of bulls—      |          |                                   |
| Bulls .. .. .         | 1,282    | 1,126                             |
| Buffalo bulls .. .. . | 337      | 301                               |
| Number of services—   |          |                                   |
| Bulls .. .. .         | 75,205   | 41,952                            |
| Buffalo bulls .. .. . | 24,537   | 9,331                             |
| Inseminations .. .. . | 10,540   | 7,667                             |

48. **Private dairies.**—There are a number of co-operative organizations, like Milk Supply Unions in the important towns and cities which collect milk from rural parts and supply the same to residents in towns. Apart from the above, the following are the private dairies that were functioning during the period in the districts mentioned :—

| District.               | Particulars of the dairy.                                  |
|-------------------------|------------------------------------------------------------|
| Guntur .. .. .          | Private dairy at Mutianapalli.                             |
| Tiruchirappalli .. .. . | (1) St. Joseph's College Dairy Farm, Tiruchirappalli.      |
|                         | (2) Southern Railway Dairy Farm, Golden Rock.              |
|                         | (3) Dalmia Cement Dairy Farm, Dalmiapuram.                 |
|                         | (4) Central Jail Dairy Farm, Tiruchirappalli.              |
| Madurai .. .. .         | (1) Sacred Heart's College Dairy, Shenbaganur, Kodaikanal. |
|                         | (2) Narendra Dairy Farm, Neikarapatti.                     |
|                         | (3) Dairy Farm, Idayakottai.                               |
|                         | (4) Dairy Farm, 'Angu Vilas,' Dindigu.                     |
| Ramanathapuram .. .. .  | A private dairy at Kanadukathan.                           |
| Tirunelveli .. .. .     | (1) Vaniankulam Estate Dairy Farm.                         |
|                         | (2) A private dairy run by the Missionaries of Donavoor.   |
| Nilgiris .. .. .        | Municipal Dairy, Ootacamund.                               |
| Coimbatore .. .. .      | A private dairy at Modakurichi.                            |
| Malabar .. .. .         | (1) Dairy Farm run by Sri M. K. Nambission at Iritty.      |
|                         | (2) Vijaya Dairy Farm, Badagara.                           |

49. **Sheep and goats—Sheep breeding—(a) Sheep Farm, Ootacamund—(i) Buildings.**—The completed buildings, office and sheep sheds were taken over. The Wool Analysis Laboratory was accommodated in suitable rooms in the Secretariat buildings allotted to this department.

(ii) *Strength*.—The strength on 1st April 1953, the changes which took place during the half-year and the strength on 30th September 1953 are tabulated below :—

| Particulars.               | Rams. | Ewes. | Young stock. |            | Total. | Scindh cows. | Cross bred bullocks. |
|----------------------------|-------|-------|--------------|------------|--------|--------------|----------------------|
|                            |       |       | Ram lambs.   | Ewe lambs. |        |              |                      |
| 1 Stock on 1st April 1953. | 39    | 205   | 67           | 48         | 359    | 2            | 2                    |
| 2 Births ..                | ..    | ..    | 49           | 45         | 94     | ..           | ..                   |
| 3 Deaths ..                | 1     | 6     | 6            | 6          | 19     | ..           | ..                   |
| 4 Transfers ..             | + 45  | + 31  | - 45         | - 31       | ..     | ..           | ..                   |
| 5 Sales ..                 | 1     | 7     | 12           | 8          | 28     | ..           | ..                   |
| Total ..                   | 82    | 223   | 53           | 48         | 406    | 2            | 2                    |

There were no private owned sheep as the owners had taken away their stock consequent on the raising of the fee to Re. 1 per animal per month.

(iii) *Mating*.—The mating programme was drawn up taking into account the wool analysis records of rams and ewes as obtained from the Poona laboratory along with the phenotypical characters. The mating was done, as usual, in March-April.

(iv) *Shearing and wool yield*.—Shearing was done during September 1953. A total quantity of 83 lb. of wool was obtained from 77 lambs and 5 adults during the period. The average wool yield is as follows :—

|               | LB.  |
|---------------|------|
| Lambs .. .. . | 1.08 |
| Ewes .. .. .  | 1.00 |

The highest yield for a ram lamb is 2 lb. 4 oz. and for a ewe lamb is 1 lb. 6 oz.

(v) *Season and rainfall*.—(i) There was a total rainfall of 50.2 inches in 101 days.

(ii) *Cultivation and pasture*.—The following crops and grasses were tried with varying results during the period :—

Berseem, Oats, Italian Rye, Lucerne, Maize, Perennial Rye, Tuber grass, Festuca grass, Kikuyu grass, Love grass, Smooth broome.

Teosinte was not successful.

Berseem in Field No. 1 has been giving a good yield. In the reclaimed areas the growth of oats was not good. Love grass, Festuca grass and Smooth broome all of which are of American origin have been transplanted in fresh areas and they were giving fair and good yields.

Tuber grass and perennial rye were extended to fresh areas during the period. Buffalo grass was also extended to fresh areas. Salt bush plants are not thriving well. Kikuyu grass continued to thrive well in many of the areas and they have been planted round the newly constructed sheep sheds and main office building. Blue gum seedlings were transplanted round the Shola. Accacia seedlings have been raised in the Nursery and have been planted in Pasture area and also near the sheep sheds. Pasture area to an extent of 50 acres has been limed during the year.

The position regarding grazing was normal but grazing was not possible on many days due to inclement weather or continuous rain.

(b) *Livestock Research Station, Hosur Cattle Farm*.—(i) A scheme known as the "Madras Sheep Breeding Scheme" sponsored by the Indian Council of Agricultural Research was functioning in this farm till 31st March 1952 when the Indian Council of Agricultural Research stopped financing the scheme. Since then that scheme is being run by this State in addition to the normal work of sheep-breeding that had been going on in the farm.

(ii) The objects of sheep-breeding are as follows :—

- (1) To evolve white woolly sheep for dual purpose.
- (2) To make available Bikanir rams for introduction among the flocks of woolly sheep in the State in order to improve their wool qualities.
- (3) To study the suitability of the Nilgiri breed to the conditions in the plains.

(iii) The following breeds of sheep are maintained in the farm :—

- (1) Bellary flock.
- (2) Bikanir flock.
- (3) Bikanir × Bellary graded flock.
- (4) Nilgiri rams.
- (5) Nilgiri × Bellary graded ewe.

(iv) A statement showing the receipts and disposal of sheep during the period 1st April to 30th September 1953 is given below :—

|                         | Stock on 1st April 1953. | Receipts. | Births. | Deaths. | Disposals. | Balance on 30th September 1953. |
|-------------------------|--------------------------|-----------|---------|---------|------------|---------------------------------|
| Bellary .. ..           | 31                       | ..        | 4       | 7       | 8          | 20                              |
| Bikanir .. ..           | 183                      | ..        | 12      | 18      | 10         | 167                             |
| Nilgiri rams .. ..      | 3                        | ..        | ..      | ..      | ..         | 3                               |
| Bikanir × Bellary rams. | 97                       | ..        | 15      | 14      | 14         | 84                              |
| Nilgiri × Bellary rams  | 3                        | ..        | ..      | ..      | 2          | 1                               |
| Total .. ..             | 317                      | ..        | 31      | 39      | 34         | 275                             |

(v) *Mating*.—Different rams of different breeds were allowed to mate different ewes of different breeds during April-May 1953 mating season, and the results of mating are given below :—

| Serial number and breed of ram used for mating. | April-May mating.   |                        |                       | Remarks.]                                                                                    |
|-------------------------------------------------|---------------------|------------------------|-----------------------|----------------------------------------------------------------------------------------------|
|                                                 | Number of ewes put. | Number of ewes served. | Number of lambs born. |                                                                                              |
| 1 Bellary ..                                    | 843                 | 3                      | 3                     | The ewes were put for mating during June-July 1953 and lambs were born during November 1953. |
| 2 Bellary ..                                    | 796                 | 6                      | 6                     |                                                                                              |
| 3 Bikanir ram.                                  | 3                   | 12                     | 12                    | Four lambs were born during October 1953.                                                    |
| 4 Bikanir ram.                                  | 10                  | 12                     | 12                    | Three lambs were born during October 1953.                                                   |
| (Grading work) Bikanir × Bellary—               |                     |                        |                       |                                                                                              |
| 5 Bikanir ram.                                  | 3                   | 14                     | 14                    | Three lambs were born during October 1953.                                                   |
| 6 Bikanir ram.                                  | 10                  | 20                     | 19                    | Four lambs were born during October 1953.                                                    |
| Total .. ..                                     | ..                  | 67                     | 66                    | 35 - 14 = 21 plus 10.*                                                                       |

\* Ten lamb: born during April 1953, ram: were mated during October-November 1952 season.

(vi) *Shearing*.—The sheep were shorn by improved methods, viz, by means of improved hand shears and shearing machine. All the sheep were weighed after shearing (i.e.) in September 1953. The average body weights are given below :—

| Serial number and name of breed. |       | Average body weight after clipping. |     |       |     |            |     |       |     |
|----------------------------------|-------|-------------------------------------|-----|-------|-----|------------|-----|-------|-----|
|                                  |       | Adults.                             |     |       |     | Yearlings. |     |       |     |
|                                  |       | Rams.                               |     | Ewes. |     | Rams.      |     | Ewes. |     |
|                                  |       | LB.                                 | OZ. | LB.   | OZ. | LB.        | OZ. | LB.   | OZ. |
| 1 Bellary                        | .. .. | 124                                 | 11  | 67    | 13  | 71         | 8   | 49    | 0   |
| 2 Bikanir                        | .. .. | 89                                  | 7   | 55    | 9   | 60         | 0   | 38    | 11  |
| 3 Nilgiris                       | .. .. | 94                                  | 5   | ..    | ..  | ..         | ..  | ..    | ..  |
| Bikanir × Bellary—               |       |                                     |     |       |     |            |     |       |     |
| 4 First cross                    | .. .. | ..                                  | ..  | 55    | 0   | ..         | ..  | ..    | ..  |
| 5 Second cross                   | .. .. | 113                                 | 0   | 63    | 15  | 99         | 0   | 51    | 4   |
| 6 Third cross                    | .. .. | 145                                 | 0   | 64    | 4   | 85         | 0   | 52    | 7   |
| 7 Fourth cross                   | .. .. | 88                                  | 8   | 47    | 0   | 57         | 0   | ..    | ..  |
| Nilgiris × Bellary—              |       |                                     |     |       |     |            |     |       |     |
| 8 First cross                    | .. .. | ..                                  | ..  | 64    | 0   | ..         | ..  | ..    | ..  |

(vii) *Wool yield*.—Particulars of the sheep shorn, average wool yield are given below.

(viii) *Bellary flock*.—The number of sheep shorn was 5 rams and 13 ewes which yielded 21-7 lb. of wool giving an average of 1 lb. 13 oz., and 15-3 oz. for rams and ewes respectively. Because of the small number of sheep most of which were old, the yield has gone down.

(ix) *Bikanir flock*.—Twenty-six rams and 98 ewes were shorn, which yielded 199-9 lb. of wool giving an average of 2-4 lb. and 1-7 lb. for rams and ewes respectively.

(x) *Bikanir × Bellary graded flock*.—Twenty-one rams and 41 ewes were shown which yielded 106-15 lb. of wool, giving an average of 2-7 lb. and 1-6 lb. for rams and ewes respectively.

(xi) *Nilgiri rams*.—Two rams were shorn, which yielded 1-4 lb. of wool giving an average of 10 oz. per ram.

(xii) *Nilgiris × Bellary graded ewe*.—Only one ewe was shorn and it yielded 0-13 oz. of wool.

(xiii) *Wool grading*.—The clipped wool was graded and sorted according to the region of the body, colour, age, breed and quality. All the available wool was disposed of by sale in auction.

(xiv) *Mandya flock*.—This flock was introduced in this farm under the Five-Year Plan. The object in this is to make available Mandya rams for introduction among the flocks of hairy sheep in the State in order to improve their mutton qualities. The particulars of stock, receipts, etc., are given below :—

| Stock on 1st April 1953. | Births. | Deaths. | Disposals. | Stock on 30th September 1953. |
|--------------------------|---------|---------|------------|-------------------------------|
| 125                      | 5       | ..      | 7          | 123                           |

(xv) *Mating*.—During the April-May season 27 ewes were mated to one ram. During the period 1st April to 30th September 1953, only 5 lambs (rams) were born. The average birth weight of lambs was 5 lb. 14 oz.

(c) *Combined Sheep and Cattle Farm, Kurukuppi*.—(i) The strength on 1st April 1953 was 547. There were 3 births and 77 deaths. Fifteen animals were transferred to other stations and 110 (cullled out sheep) were disposed of. The strength on 30th September 1953 was 348.

(ii) *Shearing*.—Three hundred and seventy-one sheep were shorn during the period. Two hundred and eighty lb. of white wool and 35 lb. of coloured wool were obtained. The average wool yield of the different classes of sheep is given below :—

|                           | LB. |
|---------------------------|-----|
| Bikanir ram               | 1-8 |
| Bellary rams              | 1-1 |
| Cross-bred F. 1 rams      | 2-5 |
| Bellary ram lambs         | 0-8 |
| Cross-bred ram lambs      | 0-8 |
| Cross-bred F. 2 lambs     | 1-0 |
| Bellary ewes              | 0-7 |
| Cross-bred F. 1 ewes      | 1-2 |
| Bellary ewe               | 0-6 |
| Cross-bred F. 1 ewe lambs | 0-8 |
| Cross-bred F. 1 ewe lambs | 0-9 |

(iii) The heavy mortality among sheep in this farm was due to an outbreak of sheep-pox in February 1953 which prevailed till the second week of May 1953.

50. *Mortality of sheep in sheep farms*.—(a) Comparative figures of mortality in the different farms during the period under report and in the year 1952-53 are given below :—

|                                              | During the period<br>1st April to<br>30th September<br>1953. | In the year<br>1952-53. |
|----------------------------------------------|--------------------------------------------------------------|-------------------------|
| Sheep Farm, Ootacamund                       | 19                                                           | 32                      |
| Livestock Research Station, Hosur            | 39                                                           | 41                      |
| Combined Sheep and Cattle Farm,<br>Kurukuppi | 77                                                           | 148                     |

(b) The deaths were due to the following causes :—

(i) *Sheep Farm, Ootacamund*—

|                       |    |
|-----------------------|----|
| Enteritis             | 3  |
| Pneumonia             | 3  |
| Weakness and debility | 9  |
| Other causes          | 4  |
| Total                 | 19 |

(ii) *Livestock Research Station, Hosur Cattle Farm*—

|                                        |    |
|----------------------------------------|----|
| Intersusception                        | 3  |
| John's disease                         | 5  |
| Coccidiosis                            | 1  |
| Anæmia and debility                    | 10 |
| Enterotoxæmia and enteritis            | 4  |
| Peritonitis                            | 1  |
| Born weak                              | 4  |
| Shock                                  | 1  |
| Tape worm infection, Verminous toxæmia | 10 |
| Total                                  | 39 |

## (iii) Combined Sheep and Cattle Farm, Kurukuppi—

|                                |           |
|--------------------------------|-----------|
| Sheep pox .. .. .              | 61        |
| Theileriasis .. .. .           | 5         |
| Shock due to impaction .. .. . | 1         |
| Cachexia .. .. .               | 1         |
| Gastro-enteritis .. .. .       | 1         |
| Pneumonia .. .. .              | 1         |
| Hæmorrhage .. .. .             | 1         |
| Enteritis .. .. .              | 3         |
| Anthrax .. .. .                | 2         |
| Other causes .. .. .           | 1         |
| <b>Total ..</b>                | <b>77</b> |

51. *Sheep and goat improvement*—(i) *Seed farms*.—Three seed farms for improving the Bellary breed of sheep in Anantapur district were sanctioned and three individuals have been sanctioned a loan of Rs. 2,500 each for the purchase of 120 sheep. The farm at Lepakshi run by Sri L. Rameswara Rao has been supplied with four rams from Government farms for stud purposes. Sri L. Rameswara Rao has also purchased the stock out of the loan sanctioned to him. The other two farms one at Gownimekalapalli and the other at Kurubarahalli are also functioning but the owners have not yet purchased the additional stock for which the loan has been sanctioned.

(ii) *Loan flock in Nellore district*.—This farm, started and run by Sri T. Rami Reddi with Government loan and departmental assistance, has been functioning since 1951-52. Due to an outbreak of anthrax, resulting in the death of 19 sheep, there was a set-back during the period under report also (as in 1951-52). Vaccinations were conducted and the outbreak was controlled. The strength of the flock on 30th September 1953 was 236 consisting of 4 rams, 141 ewes and 91 lambs.

(iii) *Sheep shearing and demonstrations unit*.—All the six units continued to function during the period. Demonstrations on the improved methods of washing, shearing, grading of wool, etc., were conducted and propaganda regarding scientific management and breeding of sheep and goats carried out. Demonstrations on deworming and deticking were done in 12 selected centres and by recording the weights of treated and control groups, the fact that there was gain in weight through deworming and deticking operations was brought home to the flock-owners.

The work done by the units is given below :—

|                                                                 |        |
|-----------------------------------------------------------------|--------|
| 1 Number of villages visited .. .. .                            | 601    |
| 2 Number of shearing demonstrations conducted .. .. .           | 133    |
| 3 Number of sheep washed .. .. .                                | 4,964  |
| 4 Number of sheep shorn with improved hand shears .. .. .       | 5,138  |
| 5 Number of shepherds trained in the art of shearing .. .. .    | 237    |
| 6 Number of castrations done .. .. .                            | 670    |
| 7 Number of sheep dewormed .. .. .                              | 5,437  |
| 8 Number of sheep deticked .. .. .                              | 21,691 |
| 9 Number of exhibitions and shows attended .. .. .              | 14     |
| 10 Number of rams and bucks inspected .. .. .                   | 312    |
| 11 Number of societies and loan flocks, etc., inspected .. .. . | 6      |

(iv) *Grading scheme for mutton sheep*.—This scheme for grading up local sheep in Vijayavada taluk of Krishna district and Hosur taluk of Salem district sanctioned for a period of six years and commenced in 1952-53 continued to function during the period under report.

(v) *Goat rearing*.—Breeding of Tellicherry goats continued at the District Livestock Farm, Malabar.

(a) *Strength*.—The strength on 1st April 1953 was 54. There were 21 births, 19 disposals and 12 deaths during the period. The strength on 30th September 1953 was 44, consisting of 3 bucks, 25 does and 16 kids.

(b) *Dairy*.—On an average, there were 19.7 goats in the herd of which 14.7 remained in milk and yielded 5,473 lb. of milk with a daily individual average of 2 lb. for the goats in milk and 1.5 lb. for the herd as against 1.7 lb. and 0.8 lb., respectively, in 1952-53.

(vi) *Scheme for the improvement of milch goats in South Kanara district*.—On 1st April 1953, there were 12 bucks distributed under the Government Male Stock Distribution Scheme. One buck died, during the period under report, due to Helminthiasis. The number of bucks in the scheme on 30th September 1953 was 11. The number of services performed by the bucks during the period was 448; the number of kids born was 268 and the number inspected 137.

## VI. POULTRY FARMING AND DEVELOPMENT.

52. (i) *Livestock Research Station, Hosur Cattle Farm*.—White Leghorn, Rhode Island Reds and Black Minorca were maintained in this farm.

(ii) *Strength*.—The strength on 1st April 1953 was 958. One thousand two hundred and forty-four chicks were hatched out during the period. Four hundred and thirty-one birds were sold away for breeding purposes. The number of birds culled out and sold for table was 374. Thirty birds were transferred to Poultry Demonstration Units. Three hundred and ninety-one chicken died. Sixty-nine birds the majority of which were bad cases of Avian leucosis complex, were destroyed. The strength on 30th September 1953 was 907, as detailed below :—

| Breed.                    | Cocks.    | Hens.      | Chicks.    | Total.     |
|---------------------------|-----------|------------|------------|------------|
| White Leghorn .. .. .     | 5         | 47         | 267        | 319        |
| Rhode Island Reds .. .. . | 13        | 75         | 403        | 491        |
| Black Minorca .. .. .     | 2         | 12         | 82         | 96         |
| Australorps Cross .. .. . | ..        | ..         | 1          | 1          |
| <b>Total ..</b>           | <b>20</b> | <b>134</b> | <b>753</b> | <b>907</b> |

(iii) *Egg production*.—The opening balance on 1st April 1953 was 427. The receipts and disposals of egg during the period and the closing balance on 30th September 1953 are detailed below :—

|                                                    |              |
|----------------------------------------------------|--------------|
| Stock on 1st April 1953 .. .. .                    | 427          |
| Receipts (collections) .. .. .                     | 9,045        |
| <b>Total ..</b>                                    | <b>9,472</b> |
| <b>Disposals—</b>                                  |              |
| Kept for hatching .. .. .                          | 3,413        |
| Sold for hatching .. .. .                          | 1,312        |
| Sold for table .. .. .                             | 3,890        |
| Broken and fed to chicks .. .. .                   | 569          |
| Transfer to Artificial Insemination Centre .. .. . | 179          |
| <b>Total ..</b>                                    | <b>9,363</b> |

Balance on 30th September 1953 .. .. . 109

(iv) *Laying hens*.—There were on an average 106.7 laying hens as against 139.7 in 1952-53. The overall average yield per bird of the first, second and third year production birds was 13.3 eggs per month.

Some of the high yielding pullets which completed their pullet year production during the period under report are given below :—

| Breed.            | Pullet No. | Pullet year production. |
|-------------------|------------|-------------------------|
|                   |            | EGGS.                   |
| White Leghorn     | 414        | 202                     |
| Do.               | 521        | 203                     |
| Do.               | 526        | 221                     |
| Do.               | 527        | 229                     |
| Do.               | 535        | 204                     |
| Do.               | 536        | 245                     |
| Rhode Island Red. | 424        | 258                     |
| Do.               | 446        | 256                     |
| Do.               | 466        | 275                     |
| Do.               | 470        | 213                     |
| Do.               | 487        | 218                     |
| Do.               | 505        | 261                     |
| Do.               | 520        | 202                     |

53. *Livestock Research Station, Lam, Guntur*—(i) *Strength*.—The stock on 1st April 1953 was 398 Rhode Island Reds; 133 chicks were hatched; 6 cockerels and 10 pullets were received from the Indian Veterinary Research Institute, Izatnagar. Two hundred and sixty-three birds were sold to public and there were 94 deaths. The stock on 30th September 1953 was 190 as detailed below :—

|        |    |    |    |    |    |    |     |
|--------|----|----|----|----|----|----|-----|
| Hens   | .. | .. | .. | .. | .. | .. | 38  |
| Chicks | .. | .. | .. | .. | .. | .. | 152 |
|        |    |    |    |    |    |    | 190 |

(ii) *Egg production*.—There was an opening balance of 117 eggs on 1st April 1953. The receipts and disposal and the balance on 30th September 1953 are given below :—

|                         |    |    |    |    |       |
|-------------------------|----|----|----|----|-------|
| Stock on 1st April 1953 | .. | .. | .. | .. | 117   |
| Receipts (collections)  | .. | .. | .. | .. | 1,931 |
| Total                   | .. | .. | .. | .. | 2,048 |

*Disposals*—

|                                               |    |    |    |    |       |
|-----------------------------------------------|----|----|----|----|-------|
| Set for hatching                              | .. | .. | .. | .. | 310   |
| Sold for hatching                             | .. | .. | .. | .. | 348   |
| Sold for table                                | .. | .. | .. | .. | 1,166 |
| Broken and fed to chicks                      | .. | .. | .. | .. | 176   |
| Transferred to Artificial Insemination Centre | .. | .. | .. | .. | 10    |

Total .. 2,010

Balance on 30th September 1953 .. .. 138  
The percentage of hatchability was 42.9

54. *Poultry Research Station, Madras*.—The breeds maintained at this station are: White Leghorn, Rhode Island Red, Black Minorca and Light Sussex. Indigenous ones are also maintained here.

(i) *Strength*.—The stock on 1st April 1953 was 785 (781 chicken and 4 geese). Five hundred and seventeen chickens were received by hatch and 24 received

from other stations. Four hundred and forty-six were sold for breeding and 124 for table. Fifty-four were transferred to other places; 198 birds died or were destroyed and one was lost (stolen). The balance on 30th September 1953 was 503 (499 chickens and 4 geese) as detailed below :—

| Breed.                 | Cocks. | Hens. | Chicks. | Total. |
|------------------------|--------|-------|---------|--------|
| (1)                    | (2)    | (3)   | (4)     | (5)    |
| White Leghorn          | 8      | 33    | 34      | 75     |
| Rhode Island Red       | 10     | 48    | 64      | 122    |
| Black Minorca          | 4      | 22    | 135     | 161    |
| Light and White Sussex | 3      | 15    | 34      | 52     |
| Indigenous             | 4      | 18    | 67      | 89     |
| Total                  | 29     | 136   | 334     | 499    |
| Geese                  | ..     | ..    | ..      | 4      |
|                        |        |       |         | 503    |

(ii) *Performance of birds*.—Trap-nesting was done for all the laying birds. Particulars of collection of eggs, average yield, etc., are given below :—

| Breed.                 | Average number of laying hens. | Number of eggs collected. | Average egg yield per half-year. | Remarks.                                                                                                                                   |
|------------------------|--------------------------------|---------------------------|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| (1)                    | (2)                            | (3)                       | (4)                              | (5)                                                                                                                                        |
| White Leghorn          | 39                             | 1,489                     | 38.2                             | Due to adverse seasonal conditions the majority of the laying birds were continuously in moult and this condition affected the production. |
| Rhode Island Red       | 46                             | 1,670                     | 36.3                             |                                                                                                                                            |
| Black Minorca          | 23                             | 847                       | 36.8                             |                                                                                                                                            |
| Light and White Sussex | 14                             | 525                       | 37.5                             |                                                                                                                                            |
| Indigenous             | 16                             | 509                       | 31.8                             |                                                                                                                                            |

Comparative figures of body weight of the different breeds are given below :—

| Breed.           | 1953-54 (half-year). | 1952-53. | 1951-52. |
|------------------|----------------------|----------|----------|
|                  | LB. OZ.              | LB. OZ.  | LB. OZ.  |
| White Leghorn    | 3 9                  | 3 10     | 3 10     |
| Rhode Island Red | 5 5                  | 5 6      | 5 ..     |
| Black Minorca    | 3 12                 | 3 12     | 4 6      |
| Light Sussex     | 5 6                  | 5 8      | .. ..    |
| Indigenous       | 3 14                 | 3 14     | 3 14     |

The weight of birds continued to be stationary and the small difference is due to the presence of young pullets.

(iii) *Egg production*.—The stock of eggs on 1st April 1953 was 463. Particulars of receipts and disposal during the period, etc., are given below :—

|                                        |    |    |    |       |
|----------------------------------------|----|----|----|-------|
| Stock on 1st April 1953                | .. | .. | .. | 463   |
| Receipts—                              |    |    |    |       |
| Collections                            | .. | .. | .. | 5,040 |
| From Livestock Research Station, Hosur | .. | .. | .. | 350   |
| Total                                  | .. | .. | .. | 5,853 |

|                          |    |    |    |    |       |
|--------------------------|----|----|----|----|-------|
| Disposals—               |    |    |    |    |       |
| Kept for hatching        | .. | .. | .. | .. | 1,962 |
| Sold for hatching        | .. | .. | .. | .. | 743   |
| Sold for table           | .. | .. | .. | .. | 2,240 |
| Transfers                | .. | .. | .. | .. | 228   |
| Broken and fed to chicks | .. | .. | .. | .. | 446   |
| Total                    | .. | .. | .. | .. | 5,619 |

Balance on 30th September 1953.. .. 234

Two thousand two hundred and forty eggs sold for table represent 44 per cent of the total production of eggs during the period. Severe culling was adopted as many morphologically unfit eggs were rejected to improve the quality of the stock. Nearly 50 per cent of eggs sold for table represents the production during the summer months from April to July when most of the infertile eggs unfit for breeding purposes are produced by separating the cocks. Eggs produced by pullets in the first three months before they are put in breeding pens were also sold for table.

55. *Investigation and research*—(1) *Selective breeding among indigenous breeds of poultry*.—This work was continued during the period. The object of this is to increase egg yield, and size of the eggs, and to minimize the period of broodiness. The work was done with groups of local birds from Kalahasti and Visakhapatnam areas. The results of the performance of the birds have been satisfactory with improved feeding and breeding.

(2) *Sexual maturity among indigenous hens*.—Observations made in respect of hens that began first laying during the period show that the average number of days taken for maturity was 224 as against 230 in 1952-53.

(3) *Broodiness among indigenous birds*.—Attempts to break down broodiness considerably by teasing the birds with young vigorous cockerels, etc., and keeping broody hens in open pens were continued but there was no marked improvement. The birds in nature are intensively broody for prolonged periods and to get over this hereditary character, it may take many more years of breeding among them. In general, it can be stated that a strain of indigenous birds has been evolved by selective breeding, showing an all-round improvement but it requires further breeding to fix these desirable characters. These birds breed true to grey plumage.

(4) *District Poultry Farm, Visakhapatnam*.—White Leghorn, Rhode Island Red and Desi were maintained in this farm.

(i) *Strength*.—The strength on 1st April 1953 was 390. Three hundred and fifty-one chicks were hatched out during the period. Forty birds were sold away for breeding purposes. The number of birds culled out and sold for table was 133. Four adults and 211 chicken died. The strength on 30th September 1953 was 353 as detailed below:—

| Breed.           | Cocks. | Hens. | Chicks. | Total. |
|------------------|--------|-------|---------|--------|
| White Leghorn    | 7      | 26    | 103     | 136    |
| Rhode Island Red | 9      | 39    | 167     | 215    |
| Desi             | ..     | 2     | ..      | 2      |
|                  | 16     | 67    | 270     | 353    |

(ii) *Egg production*.—The opening balance on 1st April 1953 was 137. The receipts and disposals of eggs during the period and the closing balance on 30th September 1953 are detailed below:—

|                         |    |    |    |       |
|-------------------------|----|----|----|-------|
| Stock on 1st April 1953 | .. | .. | .. | 137   |
| Receipts (collections)  | .. | .. | .. | 3,645 |
| Total                   | .. | .. | .. | 3,782 |

|                          |    |    |    |    |       |
|--------------------------|----|----|----|----|-------|
| Disposals—               |    |    |    |    |       |
| Kept for hatching        | .. | .. | .. | .. | 828   |
| Sold for hatching        | .. | .. | .. | .. | 867   |
| Sold for table           | .. | .. | .. | .. | 1,891 |
| Broken and fed to chicks | .. | .. | .. | .. | 144   |
| Total                    | .. | .. | .. | .. | 3,730 |

Balance .. .. 52

The average egg yield per bird was as follows:—

Rhode Island Red—11.78

White Leghorn—9.64

(5) *District Livestock Farm, South Kanara*.—This farm maintains White Leghorn, Rhode Island Red and Desi breeds. There were a few birds of Rhode Island Red-Desi cross also.

(i) *Strength*.—On 1st April 1953 there were 373 birds. During the period under report 305 chicks were received by hatch, 129 birds were sold for breeding and twelve transferred to Veterinary Hospital, Tirunelveli; 173 birds were culled out and sold and 78 died. The strength on 30th September 1953 was 286 as detailed below:—

| Breed.                      | Cocks. | Hens. | Chicks. | Total. |
|-----------------------------|--------|-------|---------|--------|
| White Leghorn               | 3      | 23    | 73      | 99     |
| Rhode Island Red            | 14     | 45    | 103     | 162    |
| Desi                        | ..     | 11    | ..      | 11     |
| Desi-Rhode Island Red cross | ..     | 6     | 8       | 14     |
| Total                       | 17     | 85    | 184     | 286    |

(ii) *Egg production*.—The stock of eggs on 1st April 1953 was 642. Receipts, disposal, etc., during the period are given below:—

|                         |    |    |    |    |       |
|-------------------------|----|----|----|----|-------|
| Receipts—               |    |    |    |    |       |
| Stock on 1st April 1953 | .. | .. | .. | .. | 642   |
| Collection              | .. | .. | .. | .. | 4,907 |
|                         |    |    |    |    | 5,549 |

|                   |    |    |    |    |       |
|-------------------|----|----|----|----|-------|
| Disposals—        |    |    |    |    |       |
| Kept for hatching | .. | .. | .. | .. | 762   |
| Sold for hatching | .. | .. | .. | .. | 367   |
| Sold for table    | .. | .. | .. | .. | 3,607 |
| Transfers         | .. | .. | .. | .. | 59    |
| Fed to chicks     | .. | .. | .. | .. | 567   |
| Total             | .. | .. | .. | .. | 5,362 |

Balance on 30th September 1953 .. .. 187

(iii) *Performance of birds*.—Particulars of the average number of laying hens, yield, etc., during the period are given below:—

| Breed.                      | Average number of laying hens per month. | Egg yield for the period. | Average egg yield per month. | Average egg yield per hen per month. |
|-----------------------------|------------------------------------------|---------------------------|------------------------------|--------------------------------------|
| White Leghorn               | 26.2                                     | 1,423                     | 237.2                        | 9.1                                  |
| Rhode Island Red            | 52.7                                     | 2,628                     | 438.0                        | 8.4                                  |
| Rhode Island Red-Desi cross | 4.3                                      | 305                       | 50.9                         | 11.9                                 |
| Desi                        | 11.3                                     | 551                       | 91.9                         | 8.1                                  |

The percentage of hatchability was 41.92.

(6) *District Poultry Farm, Chittoor.*—(i) The farm maintained White Leghorn and Rhode Island Red breeds. The flock opened with 199 birds at the beginning of the year. There were 102 receipts by hatch, 11 receipts from outside, two deaths, 98 sales and five transfers, thus leaving a balance of 207 birds at the end of 30th September 1953 as detailed below :—

| Breed.                | Cocks. | Hens. | Chicks. | Total. |
|-----------------------|--------|-------|---------|--------|
| White Leghorn .. ..   | 3      | 22    | 111     | 136    |
| Rhode Island Red .. . | 2      | 4     | 65      | 71     |
| Total .. ..           | 5      | 26    | 176     | 207    |

(ii) *Eggs production.*—The stock on 1st April 1953 was nil. Receipts, disposal, etc., of eggs during the period are given below :—

|                         |    |    |    |    |    |       |
|-------------------------|----|----|----|----|----|-------|
| Receipts—               |    |    |    |    |    |       |
| Stock on 1st April 1953 | .. | .. | .. | .. | .. | ..    |
| Collection .. ..        | .. | .. | .. | .. | .. | 1,064 |
| Total .. ..             |    |    |    |    |    | 1,064 |

|                                |    |    |    |    |    |       |
|--------------------------------|----|----|----|----|----|-------|
| Disposals—                     |    |    |    |    |    |       |
| Kept for hatching .. ..        | .. | .. | .. | .. | .. | 470   |
| Sold for hatching .. ..        | .. | .. | .. | .. | .. | 116   |
| Sold for table .. ..           | .. | .. | .. | .. | .. | 333   |
| Broken and fed to chicks .. .. | .. | .. | .. | .. | .. | 145   |
| Transfer .. ..                 | .. | .. | .. | .. | .. | ..    |
| Total .. ..                    |    |    |    |    |    | 1,064 |

Balance on 30th September 1953—Nil.

The percentage of hatchability worked out to 21.7 over the total eggs and 47.7 over the fertile eggs.

(7) *District Poultry Farm, Cuddapah.*—This farm maintains Rhode Island Reds and White Leghorns.

(i) *Strength.*—The strength on 1st April 1953 was 393. Four hundred and nineteen chickens were received by hatch. Two hundred and twenty-eight birds were sold for breeding and 139 for table. Thirty-seven were transferred to other stations and 65 died. The balance on 30th September 1953 was 343 as shown below :—

| Breed.                | Cocks. | Hens. | Chicks. | Total. |
|-----------------------|--------|-------|---------|--------|
| Rhode Island Red .. . | 3      | 34    | 197     | 234    |
| White Leghorn .. ..   | 1      | 12    | 96      | 109    |
| Total .. ..           | 4      | 46    | 293     | 343    |

It has since been reported by the District Veterinary Officer, Cuddapah, at the closing balance on 31st March 1953 was only 393 and not 394 as reported at year.

(ii) *Egg production.*—The stock on 1st April 1953 was 357. Receipts, disposal, etc., of eggs during the period are given below :—

|                         |    |    |    |    |    |       |
|-------------------------|----|----|----|----|----|-------|
| Receipts—               |    |    |    |    |    |       |
| Stock on 1st April 1953 | .. | .. | .. | .. | .. | 357   |
| Collections .. ..       | .. | .. | .. | .. | .. | 3,125 |
| Total .. ..             |    |    |    |    |    | 3,482 |

|                                |    |    |    |    |    |       |
|--------------------------------|----|----|----|----|----|-------|
| Disposals—                     |    |    |    |    |    | 953   |
| Kept for hatching .. ..        | .. | .. | .. | .. | .. | 347   |
| Sold for hatching .. ..        | .. | .. | .. | .. | .. | 1,538 |
| Sold for table .. ..           | .. | .. | .. | .. | .. | 117   |
| Transfer .. ..                 | .. | .. | .. | .. | .. | 251   |
| Broken and fed to chicks .. .. | .. | .. | .. | .. | .. | ..    |

Total .. 3,206

Balance on 30th September 1953 .. .. 276

(8) *District Poultry Farm, Cannanore.*—This farm maintains Rhode Island Red and White Leghorns.

(i) *Strength.*—The flock opened with 516 birds. Two hundred and ninety-two birds were received by hatch. Two hundred and twenty-six birds were sold. Twenty-three transferred and five died. The strength on 30th September 1953 was 554 as detailed below :—

| Breed.                | Cocks. | Hens. | Chicks. | Total. |
|-----------------------|--------|-------|---------|--------|
| Rhode Island Red .. . | 6      | 78    | 345     | 429    |
| White Leghorn .. ..   | 2      | 33    | 90      | 125    |
| Total .. ..           | 8      | 111   | 435     | 554    |

(ii) *Egg production.*—The stock on 1st April 1953 was 191. Receipts, disposal, etc., of eggs during the period are given below :—

|                         |    |    |    |    |    |    |       |
|-------------------------|----|----|----|----|----|----|-------|
| Receipts—               |    |    |    |    |    |    | 191   |
| Stock on 1st April 1953 | .. | .. | .. | .. | .. | .. | 5,164 |
| Collections .. ..       | .. | .. | .. | .. | .. | .. | ..    |
| Total .. ..             |    |    |    |    |    |    | 5,355 |

|                                        |    |    |    |    |    |    |       |
|----------------------------------------|----|----|----|----|----|----|-------|
| Disposals—                             |    |    |    |    |    |    | 1,184 |
| Kept for hatching .. ..                | .. | .. | .. | .. | .. | .. | 2,735 |
| Sold for hatching .. ..                | .. | .. | .. | .. | .. | .. | 1,170 |
| Sold for table .. ..                   | .. | .. | .. | .. | .. | .. | 231   |
| Transfers and eggs fed to chicks .. .. | .. | .. | .. | .. | .. | .. | ..    |
| Total .. ..                            |    |    |    |    |    |    | 5,320 |

Balance on 30th September 1953 .. .. 35

(9) *Poultry units in veterinary institutions.*—(i) Forty Poultry Demonstration Units in Veterinary Institutions have been functioning during the period.

(ii) Statement showing the receipts of birds and eggs in these units are annexed.

(iii) The receipts and the cost of management of the Poultry Research Station, Madras, and the District Poultry Farms, Chittoor, Cuddapah and Cannanore during the period from 1st April to 30th September 1953 are furnished below :—

| Farms.                              | Receipts. |     |     |                                          |     |     | Expenditure. |     |      |                |      |      |
|-------------------------------------|-----------|-----|-----|------------------------------------------|-----|-----|--------------|-----|------|----------------|------|------|
|                                     | Realized. |     |     | Value of birds, eggs, etc., transferred. |     |     | Recurring.   |     |      | Non-recurring. |      |      |
|                                     | (2)       | (3) | (4) | (5)                                      | (6) | (7) | (8)          | (9) | (10) | (11)           | (12) | (13) |
| (1)                                 | RS.       | A.  | P.  | RS.                                      | A.  | P.  | RS.          | A.  | P.   | RS.            | A.   | P.   |
| 1 Poultry Research Station, Madras. | 1,491     | 12  | 6   | 284                                      | 4   | 0   | 7,641        | 13  | 2    | 199            | 2    | 11   |
| 2 District Poultry Farm, Chittoor.  | 88        | 10  | 1   | 88                                       | 10  | 1   | 2,362        | 14  | 1    | —              | —    | —    |
| 3 District Poultry Farm, Cannanore. | 1,217     | 15  | 2   | 1,192                                    | 6   | 6   | 2,737        | 1   | 5    | 2,712          | 0    | 0    |
| 4 District Poultry Farm, Cuddapah.  | 1,214     | 9   | 6   | 6                                        | 8   | 0   | 5,444        | 14  | 1    | 135            | 0    | 0    |

56. The work in the Poultry Farms and the Demonstration Units in Veterinary Institutions shows that during the period under report 56,966 eggs were produced, of which 16,112 were sold for setting and 12,602 used for hatching. Four thousand four hundred and thirty-six chicks were hatched. It would be seen that more than 50 per cent of eggs were sold or utilized for hatching, which is satisfactory, 2,603 birds were sold for breeding and 987 for table.

57. Among the Poultry Farms, the District Poultry Farm, Cannanore, sold the largest number of eggs for hatching and hatched 292 chicks. The Hosur Farm had also good record of sale for hatching. The production was lowest at the District Poultry Farm, Chittoor, with 1,064 eggs and a sale of 347 for hatching.

58. Among the Poultry Demonstration Units in Veterinary Institutions, the Units at Hindupur, Tanjore, Tallakulam, Ootacamund, Mangalore, Madanapalle and Erode produced more than 1,000 eggs and sold over 500 eggs for setting. Taking the number of chicks hatched, the Veterinary Hospital, Erode, leads with 250 chicks followed by Pollachi with 181 chicks. The other institution that hatched more than 100 chicks is Dharapuram.

59. It is noteworthy that some of the veterinary institutions had a better record of production and sale than some of the poultry farms.

Some of the units especially at Kakinada, Vellore, Kurnool, Kallakurichi and Tirunelveli produced less than 150 eggs.

60. A statement of mortality among poultry in farms from 1st April to 30th September 1953 is appended below:—

| Serial number and farms.                                  | Deaths. | Percentage of mortality. |
|-----------------------------------------------------------|---------|--------------------------|
| 1 Livestock Research Station, Hosur Cattle Farm . . . . . | 391     | 17.8                     |
| 2 Livestock Research Station, Guntur . . . . .            | 94      | 17.2                     |
| 3 Poultry Research Station, Madras . . . . .              | 198     | 15.0                     |
| 4 District Poultry Farm, Visakhapatnam . . . . .          | 215     | 29.0                     |
| 5 District Livestock Farm, South Kanara . . . . .         | 78      | 11.5                     |
| 6 District Poultry Farm, Chittoor . . . . .               | 2       | 0.6                      |
| 7 District Poultry Farm, Cuddapah . . . . .               | 65      | 8.0                      |
| 8 District Poultry Farm, Cannanore . . . . .              | 5       | 0.82                     |

61. The majority of the deaths in the farms were from the young stock.

62. *Poultry rearing in private poultry farms.*—(i) The American Arcot Mission, Katpadi Scheme, has been functioning with 12 model village poultry farms as well as three auxiliary centres, viz., (1) Arni (North Arcot district), (2) Muttathur (South Arcot district) and (3) Burrakayalakota (Chittoor district). The poultry development work has been in progress in the areas round about Katpadi for more than 15 to 16 years for which Government subsidy is granted.

(ii) There were 24 cockerels, 290 hens and 135 chicks in the breeds of White Leghorn and Rhode Island Red at the 12 model village poultry farms on 30th September 1953. Two thousand eight hundred and thirty-six eggs were sold for hatching at these units during the period.

63. *Firka Development Schemes.*—The six centres at Gopannapalem (West Godavari district), T. Kallupatti (Madurai district), Kinnigoli (South Kanara district), Malli (Ramanathapuram district), Alur (Bellary district) and Saliamangalam (Tanjore district) continued to function during the period under report.

64. *Yenadi Reclamation Scheme for Poultry Improvement.*—The scheme was sanctioned for a further period of one year at the following units from the dates noted against each:—

|                       |                                      |
|-----------------------|--------------------------------------|
| Amudalakona . . . . . | 5th September 1952—Rhode Island Red. |
| Vadamalpet . . . . .  | 1st September 1952—White Leghorn.    |

There were 14 country hens and 12 chicks in Vadamalpet unit and two Rhode Island Red cockerel, 15 country hens and 13 chicks in Amudalakona unit on 30th September 1953.

No birds were distributed during the period under report.

65. *North Arcot district.*—(i) The American Arcot Mission, Katpadi, continued to maintain 12 model village poultry farms during this year also. The Mission distributed 102 cockerels for grading up village poultry at the rate of Rs. 2 per cock.

(ii) Originally 13 units of 3 to 5 hens and a cock were started in the Block Development Area under the Rural Welfare Scheme and of them only 10 units were working satisfactorily during the period under report. These units have produced 2,020 eggs of which 185 eggs were set up at the units, 47 eggs were sold for hatching, 1,699 eggs were sold for table and 89 eggs were broken and fed to chicks.

66. *Chittoor district.*—The American Arcot Mission, Katpadi, with subsidy from Government continued to popularize poultry-keeping as a cottage industry with its auxiliary centre at Burrakayalakotta with Rhode Island Red birds. Three hundred and eighty-four eggs were sold for hatching and 79 eggs were sold for table during the period.

67. *South Arcot.*—The poultry unit at Muttathur is being run by the American Arcot Mission, Katpadi, for which a sum of Rs. 704 was paid as subsidy during this period.

68. *Tiruchirappalli district.*—(i) The Poultry Unit at the Central Jail, Tiruchirappalli, is having a strength of three cockerels, eight hens and eleven chicks of White Leghorn breed at the end of period under report.

(ii) There were 41 poultry units with private parties with 660 birds of exotic breeds in the district. The total number of eggs collected was 7,444 of which 1,451 eggs were set for hatching. About 40 to 50 per cent of eggs set were hatched out.

(iii) Thirty-two backyard poultry units were started under the guidance and help of the departmental staff during the period under report.

(iv) Two hundred and eighty-six eggs were set for hatching by artificial incubation by two private parties under the guidance of the departmental staff out of which 180 chicks were hatched out.

69. *Salem district.*—(i) There were two private poultry farms, one at Mallur village with 187 birds on 30th September 1953 and the other at Chinnabelagendapalli with 190 birds. Both the farms sold about 1,800 eggs for setting during the period.

(ii) A sum of Rs. 200 was sanctioned for poultry development in Rural Welfare areas. With this amount a model poultry unit in a small scale was started at Thamarapatti village in Attur taluk. Six White Leghorn cocks were also distributed in Chinnaseragapadi village for grading up the village poultry.

(iii) The grading up of village poultry started in the previous years in three centres of Rural Welfare area in Kanakkapalayam and Valacombai in Attur taluk and Achethipalli in Hosur taluk is progressing satisfactorily.

(iv) There are about 18 other private poultry farms in the districts.

70. *Madurai district.*—The Poultry Farm opened at the Tamilnad Grama Sevak Vidyalayam at Kallupatti with Rhode Island Red breed continued to function with a strength of two cocks, four hens and 28 chicks. Two hundred and thirty-one eggs were collected of which 211 eggs were sold for hatching and eight eggs were set for hatching at the farm.

71. *South Kanara district.*—The Poultry Farm at Kinigoli which was started during 1952–53 continued to function with a strength of two cocks, 14 hens and 26 chicks of Rhode Island Red breed at the end of the period under report. Four hundred and sixty-five eggs were collected of which 215 eggs were kept for hatching, 34 eggs were sold for setting, 154 eggs were sold for table, 42 were fed to chicks thus leaving a balance of 20 at the end of the period under report.

72. *Tanjore district.*—A poultry production centre which was opened in the Firka Development area at Saliamangalam with White Leghorn breed of birds continued to function. There were six cocks, nine hens and two chicks at the end of the

period. One hundred and ninety-five eggs were collected of which 101 were sold for setting and 47 were kept for hatching.

In the National Extension Service areas cockerels of exotic breeds were distributed to the interested ryots to grade up local indigenous birds.

73. (i) *Coimbatore district*.—Fifty-one cockerels have been distributed in the Avanashi firka area during the period.

(ii) Twenty cockerels were purchased and distributed in the rural reconstruction areas under Collector's discretionary grant.

74. *Horses and pony breeding*.—(i) The stallions at Veterinary Institutions, Coimbatore and Dharapuram, were auctioned due to old age. The stallions stationed at Pollachi, Erode, Tiruppur and Gobichettipalayam continued to be at stud during the period.

(ii) The number of services performed by the stallions are furnished below :—

|                           | Number of services. |
|---------------------------|---------------------|
| Pollachi .. .. .          | 10                  |
| Coimbatore .. .. .        | ..                  |
| Erode .. .. .             | 16                  |
| Tiruppur .. .. .          | 19                  |
| Gobichettipalayam .. .. . | 1                   |
| Dharapuram .. .. .        | 11                  |
|                           | —                   |
|                           | 57                  |
|                           | —                   |

(iii) Besides a stallion and two mares with two fillies are available at Livestock Research Station, Hosur Cattle Farm.

75. *Pig rearing*.—(i) Yorkshire and African pigs are reared in the Roman Catholic Institution at Shenbaganur, Kodaikanal.

(ii) Pig breeding is continued at the farm near Pudupakkam village in Chingleput taluk by Messrs. R. M. Buch, and there were about 50 pigs including Berkshire pigs.

(iii) Berkshire pigs are reared at the following places in Tiruchirappalli district :—

|                                                   |     |
|---------------------------------------------------|-----|
| (a) St. Joseph's College, Tiruchirappalli .. .. . | 200 |
| (b) St. Paul's Seminary, Tiruchirappalli .. .. .  | 10  |
| (c) Dr. Rajan's Farm, Thiruvengimalai .. .. .     | 50  |
| (d) Sri Thangarajan, Anoor .. .. .                | 5   |

(iv) Berkshire breed of pigs are reared at the piggery maintained by the U.L.C.M. Rural Reconstruction Scheme in Guntur.

76. *Cattle shows and exhibition*.—(a) *Private cattle shows*.—One cattle show by the S.P.C.A., Tanjore, was conducted during the period.

(b) *One-day cattle show*.—(i) A one-day cattle show was held at Kannapuram, East Godavari district, for which a sum of Rs. 800 was sanctioned by the Director of Harijan Welfare, Madras.

(ii) Two one-day cattle shows were held in Coimbatore district, one at Ootacamund for which a sum of Rs. 100 was granted by Government and the other at Andhiyur for which a sum of Rs. 200 was granted by Government.

(iii) A cattle show was also held at Ongole in Guntur district for which a sum of Rs. 1,000 was granted by Government.

77. *Propaganda*.—The department participated in the various exhibitions held at Madras, Tiruchirappalli, Salem, Tirunelveli, Tuticorin, Palghat, Cannanore, Kozhikode and Cherplasseri in Malabar district.

78. There are several private tanneries at Eluru, Rajahmundry, Vinukonda, Guntur, South Kanara, Tiruchirappalli, Madurai, Chingleput and Salem districts.

A statement showing the export and import of livestock products during the period 1st April to 30th September 1953 is furnished below :—

| Commodity.                        | Exports.  |             |     |               |                                                |          |     |               |
|-----------------------------------|-----------|-------------|-----|---------------|------------------------------------------------|----------|-----|---------------|
|                                   | 1952-53.  |             |     |               | 1953-54<br>(1st April to 30th September 1953). |          |     |               |
|                                   | Quantity. |             |     | Value.<br>RS. | Quantity.                                      |          |     | Value.<br>RS. |
|                                   | TONS.     | OWT.        | LB. |               | TONS.                                          | OWT.     | LB. |               |
| Raw goat skins .. .. .            | 1,345     | ..          | ..  | 54,24,603     | ..                                             | 7,278    | ..  | 24,29,490     |
| Raw sheep skins .. .. .           | ..        | 21          | ..  | 10,080        | ..                                             | ..       | ..  | ..            |
| Raw cuttings of hides and skins.  | 1,457     | ..          | ..  | 6,89,235      | ..                                             | 4,579    | ..  | 57,351        |
| Raw cow-calf skins .. .. .        | ..        | ..          | ..  | ..            | ..                                             | ..       | ..  | ..            |
| Raw buffalo hides .. .. .         | ..        | ..          | ..  | ..            | ..                                             | ..       | ..  | ..            |
| Raw cow hides .. .. .             | ..        | ..          | ..  | ..            | ..                                             | ..       | ..  | ..            |
| Tanned cow-calf skins .. .. .     | ..        | 14,445      | ..  | 61,23,005     | ..                                             | 9,012    | ..  | 41,33,342     |
| Tanned buffalo-calf skins .. .. . | ..        | 16,987      | ..  | 45,43,529     | ..                                             | 9,815    | ..  | 23,82,162     |
| Tanned buffalo hides .. .. .      | ..        | 18,336      | ..  | 37,31,954     | ..                                             | 8,541    | ..  | 16,13,261     |
| Tanned cow hides .. .. .          | ..        | 238,758     | ..  | 6,01,96,898   | ..                                             | 1,38,298 | ..  | 3,46,92,150   |
| Tanned goat skins .. .. .         | ..        | 77,130      | ..  | 4,94,98,782   | ..                                             | 41,954   | ..  | 3,17,12,857   |
| Tanned sheep skins .. .. .        | ..        | 66,108      | ..  | 4,80,69,400   | ..                                             | 29,978   | ..  | 2,79,12,164   |
| Tanned other skins .. .. .        | ..        | 55          | ..  | 23,782        | ..                                             | 24       | ..  | 70,718        |
| Horn tips and pieces of horns ..  | ..        | 15,083      | ..  | 3,09,220      | ..                                             | 12,680   | ..  | 2,35,307      |
| Ivory, manufactured .. .. .       | ..        | ..          | ..  | 2,837         | ..                                             | ..       | ..  | ..            |
| Bone meal .. .. .                 | ..        | ..          | ..  | 3,639         | ..                                             | ..       | ..  | ..            |
| Horn meal .. .. .                 | 10        | ..          | ..  | 2,747         | ..                                             | ..       | ..  | ..            |
| Bones for manurial purposes ..    | ..        | 2           | ..  | 29,09,054     | ..                                             | 5,174    | ..  | 14,80,688     |
| Bones for manufacturing purposes. | ..        | ..          | ..  | ..            | ..                                             | ..       | ..  | ..            |
| Animals, living .. .. .           | 10,070    | ..          | ..  | ..            | ..                                             | ..       | ..  | ..            |
| Animals—                          | ..        | Nos. 44     | ..  | 40,810        | ..                                             | ..       | ..  | ..            |
| (a) Excepting sheep and goats.    | ..        | Nos. 71,788 | ..  | 35,29,120     | ..                                             | 25,287   | ..  | 14,81,618     |
| (b) Sheep and goats .. .. .       | ..        | Nos. 1,976  | ..  | 1,33,895      | ..                                             | 1,065    | ..  | 78,163        |
| (c) Other kinds .. .. .           | 1,092     | ..          | ..  | 12,84,956     | ..                                             | 493      | ..  | 4,65,116      |
| Leather, unwrought .. .. .        | ..        | ..          | ..  | ..            | ..                                             | ..       | ..  | ..            |

| Commodity.                                               | Imports.  |        |               |                                                |           |
|----------------------------------------------------------|-----------|--------|---------------|------------------------------------------------|-----------|
|                                                          | 1952-53.  |        |               | 1953-54<br>(1st April to 30th September 1953). |           |
|                                                          | Quantity. |        | Value.<br>RS. | Quantity.                                      |           |
|                                                          | TONS.     | OWT.   |               | OWT.                                           | RS.       |
| Leather, unwrought .. .. .                               | ..        | 16,305 | 4,41,392      | 8,946                                          | 1,89,514  |
| Roller skins .. .. .                                     | ..        | 27     | 86,614        | 4                                              | 12,532    |
| Hides, raw .. .. .                                       | 94        | ..     | 1,29,232      | Nos. 175<br>912                                | 35,502    |
| Skins, tanned .. .. .                                    | ..        | ..     | 3,078         | 10 H<br>Nos. 13                                | 88        |
| Skins, raw .. .. .                                       | 258       | ..     | 6,11,429      | 3,191<br>Nos. 112,502                          | 3,32,643  |
| Hides, tanned .. .. .                                    | ..        | 1      | 146           | ..                                             | ..        |
| Bacon and ham .. .. .                                    | ..        | 169    | 47,378        | 34                                             | 10,073    |
| Milk food for infants and invalids.                      | ..        | 11,159 | 36,46,974     | 11,846                                         | 32,66,909 |
| Whole milk including cream<br>(evaporated or condensed). | ..        | ..     | ..            | 20,943                                         | 22,65,453 |
| Dried skimmed milk .. .. .                               | ..        | 43,815 | 47,50,927     | 61,884                                         | 53,30,298 |
| Animals, living, horse .. .. .                           | Nos. 13   | ..     | 1,47,192      | Nos. 3                                         | 32,031    |
| Other kinds .. .. .                                      | Nos. 116  | ..     | 8,032         | Nos. 590                                       | 5,912     |
| Dried milk or powder, whole ..                           | ..        | 1,378  | 3,30,831      | 1,823                                          | 2,89,496  |
| Dried milk or powder, skimmed.                           | ..        | 1,294  | 1,37,218      | ..                                             | ..        |
| Dried milk, condensed or powder—                         | ..        | 10,736 | 11,98,992     | ..                                             | ..        |
| Whole .. .. .                                            | ..        | 606    | 1,63,553      | 463                                            | 1,19,937  |
| Butter .. .. .                                           | ..        | ..     | ..            | ..                                             | ..        |
| Ghee .. .. .                                             | ..        | ..     | ..            | ..                                             | ..        |

79. *Trade in livestock.*—The number of cows and buffaloes brought into Tiruvottiyur Cattle Market for sale to persons in the City of Madras and surrounding areas for purposes of milk, during the period were as follows:—

|                   | Nos.  |
|-------------------|-------|
| Cows .. .. .      | 2,029 |
| Buffaloes .. .. . | 2,790 |
| Total .. .. .     | 4,819 |

The prices of work-bullocks, she-buffaloes and sheep prevailing at the important weekly cattle markets are being reported to the Economic Adviser to the Government of Madras.

The average wholesale prices of hides and skins in Madras City and particulars of export and import of animals during the year which were obtained from the State Marketing Officer, Madras, are furnished in annexures.

## ANNEXURE I.

*Average wholesale price in rupees per pound prevailing in Madras City during the period 1st April to 30th September 1953.*

| (1)          | Tanned cow hides. |             |           | Tanned goat skins. |           |           | Tanned sheep skins. |           |           |
|--------------|-------------------|-------------|-----------|--------------------|-----------|-----------|---------------------|-----------|-----------|
|              | Bangalore.        | Up-country. | Coasts.   | Good.              | Fair.     | Common.   | Good.               | Fair.     | Common.   |
|              | 8-8½ lb.          | 8-8½ lb.    | 7-7½ lb.  | (5)                | (6)       | (7)       | (8)                 | (9)       | (10)      |
|              | RS. A. P.         | RS. A. P.   | RS. A. P. | RS. A. P.          | RS. A. P. | RS. A. P. | RS. A. P.           | RS. A. P. | RS. A. P. |
| April ..     | 2 3 0             | 2 3 0       | 2 3 0     | 5 9 0              | 5 6 0     | 5 2 0     | 6 15 0              | 6 11 0    | 6 7 0     |
| May ..       | 2 3 0             | 2 3 0       | 2 3 0     | 5 9 0              | 5 7 0     | 5 5 0     | 5 1 0               | 6 14 0    | 6 18 0    |
| June ..      | 2 3 0             | 2 3 0       | 2 3 0     | 5 6 0              | 5 3 0     | 5 2 0     | 6 14 0              | 6 11 0    | 6 9 0     |
| July ..      | 2 2 0             | 2 2 0       | 2 2 0     | 5 3 0              | 5 6 0     | 5 3 0     | 7 2 0               | 7 0 0     | 6 13 0    |
| August ..    | 2 2 0             | 2 2 0       | 2 2 0     | 5 5 0              | 5 3 0     | 5 0 0     | 6 14 0              | 6 10 0    | 6 8 0     |
| September .. | 2 3 0             | 2 3 0       | 2 3 0     | 4 15 0             | 4 12 0    | 4 9 0     | 6 10 0              | 6 8 0     | 6 6 0     |

## Dindigul price per pound.

|              | Cow hides. |           |           | Goat skins. |                 | Sheep skins. |           |  |
|--------------|------------|-----------|-----------|-------------|-----------------|--------------|-----------|--|
|              | Superior.  | Average.  | Inferior. | A quality.  | Deccan quality. | Superior.    | Inferior. |  |
|              | (11)       | (12)      | (13)      | (14)        | (15)            | (16)         | (17)      |  |
|              | RS. A. P.  | RS. A. P. | RS. A. P. | RS. A. P.   | RS. A. P.       | RS. A. P.    | RS. A. P. |  |
| April ..     | 0 11 0     | 0 10 0    | 0 9 0     | 1 6 3       | 1 5 0           | 1 3 6        | 0 12 11   |  |
| May ..       | 0 11 5     | 0 10 5    | 0 9 5     | 1 6 2       | 1 4 8           | 1 4 2        | 0 14 0    |  |
| June ..      | 0 11 6     | 0 10 6    | 0 9 6     | 1 6 9       | 1 4 3           | 1 5 6        | 1 0 0     |  |
| July ..      | 0 11 6     | 0 10 6    | 0 9 6     | 1 6 9       | 1 3 3           | 1 7 3        | 1 0 1     |  |
| August ..    | 0 11 0     | 0 10 0    | 0 9 0     | 1 7 10      | 1 2 4           | 1 6 0        | 0 15 0    |  |
| September .. | 0 11 0     | 0 10 0    | 0 9 0     | 1 7 10      | 1 2 4           | 1 6 0        | 0 15 0    |  |

## ANNEXURE II.

*Inter-block movements (Imports) of livestock into Madras State by Southern Railway, 1953-54 (1st April to 30th September 1953).*

| From         | To           | Cattl. | Horses. | Sheep and goats. | Other kinds. | Total. |
|--------------|--------------|--------|---------|------------------|--------------|--------|
| Mysore .. .. | Madras .. .. | 854    | 32      | 130              | ..           | 1,016  |
| Bombay .. .. | Madras .. .. | ..     | 29      | ..               | ..           | 29     |
| Hyderabad .. | Madras .. .. | 20     | ..      | 159              | ..           | 179    |

*Inter-block movements (Exports) of livestock from Madras State by Southern Railway, 1953-54 (1st April to 30th September 1953).*

| From         | To           | Cattle. | Horses. | Sheep and goats. | Other kinds. | Total. |
|--------------|--------------|---------|---------|------------------|--------------|--------|
| Madras .. .. | Mysore .. .. | 29      | ..      | ..               | ..           | 29     |
| Madras .. .. | Bombay .. .. | 1       | 8       | ..               | 6            | 15     |

*Foreign imports of animals coming into Madras State, 1953-54 (1st April to 30th September 1953). (Quantity in numbers and value in rupees.)*

| From           | Cattle. |        | Sheep and goats. |        | Horses. |        | Other kinds. |        | Total. |        |
|----------------|---------|--------|------------------|--------|---------|--------|--------------|--------|--------|--------|
|                | No.     | Value. | No.              | Value. | No.     | Value. | No.          | Value. | No.    | Value. |
| United Kingdom | ..      | ..     | ..               | ..     | 3       | 32,031 | 3            | 4,368  | 6      | 36,399 |
| Ceylon .. ..   | ..      | ..     | ..               | ..     | ..      | ..     | 587          | 1,524  | 587    | 1,524  |

*Foreign exports of animals leaving from Madras State, 1953-54 (1st April to 30th September 1953). (Quantity in numbers and value in rupees.)*

| From            | Cattle. |        | Sheep and goats. |           | Horses. |        | Other kinds. |        | Total. |           |
|-----------------|---------|--------|------------------|-----------|---------|--------|--------------|--------|--------|-----------|
|                 | No.     | Value. | No.              | Value.    | No.     | Value. | No.          | Value. | No.    | Value.    |
| Ceylon .. ..    | ..      | ..     | 25,287           | 14,81,618 | ..      | ..     | 1,047        | 41,063 | 26,334 | 15,22,681 |
| West Germany .. | ..      | ..     | ..               | ..        | ..      | ..     | 818          | 37,100 | 818    | 37,100    |

*Coastal imports of animals coming into Madras State, 1953-54 (1st April to 30th September 1953). (Quantity in numbers and value in rupees.)*

| From         | Cattle. |        | Horses. |        | Sheep and goats. |        | Other kinds. |        | Total. |        |
|--------------|---------|--------|---------|--------|------------------|--------|--------------|--------|--------|--------|
|              | No.     | Value. | No.     | Value. | No.              | Value. | No.          | Value. | No.    | Value. |
| Bengal .. .. | ..      | ..     | ..      | ..     | ..               | ..     | 1            | 17,009 | 1      | 17,009 |

*Coastal exports of animals leaving from Madras State, 1953-54 (1st April to 30th September 1953). (Quantity in numbers and value in rupees.)*

| From         | Cattle. |        | Horses. |        | Sheep and goats. |        | Other kinds. |        | Total. |        |
|--------------|---------|--------|---------|--------|------------------|--------|--------------|--------|--------|--------|
|              | No.     | Value. | No.     | Value. | No.              | Value. | No.          | Value. | No.    | Value. |
| Bengal .. .. | ..      | ..     | ..      | ..     | 69               | 2,595  | ..           | ..     | 69     | 2,595  |

80. *State Livestock Improvement Board.*—There was no meeting of the State Livestock Improvement Board during the period.

## VII. VETERINARY HEALTH SERVICE.

81. (i) *Veterinary institutions.*—No new Veterinary institutions were opened during the period under report. The number of Veterinary institutions in the State at the end of the period was 147, excluding three Veterinary dispensaries in the Madras City which are maintained by the Corporation of Madras and the Minor Veterinary dispensaries in the State run by the Touring Veterinary Assistant Surgeons.

(ii) The total number of in and out-patients treated in all the Veterinary institutions during the period under review was 172,223 as against 341,907 in the previous year. The total number of castrations performed was 28,335 as against 60,202 in the previous year.

(iii) The number of cases treated in some of the more important Veterinary institutions in the State during the period is given below :—

| Serial number and name of the Veterinary Hospital. |                                     |    |    | Number of cases treated. |
|----------------------------------------------------|-------------------------------------|----|----|--------------------------|
| 1                                                  | Madras Veterinary College Hospital  | .. | .. | 6,417                    |
| 2                                                  | Veterinary Hospital, Saidapet       | .. | .. | 3,491                    |
| 3                                                  | Do. Nellore                         | .. | .. | 2,992                    |
| 4                                                  | Do. Coimbatore                      | .. | .. | 3,531                    |
| 5                                                  | Veterinary Dispensary, Madurai City | .. | .. | 2,687                    |
| 6                                                  | Veterinary Hospital, Chittoor       | .. | .. | 2,565                    |
| 7                                                  | Do. Bobbili                         | .. | .. | 2,398                    |
| 8                                                  | Do. Tiruchirappalli                 | .. | .. | 2,384                    |
| 9                                                  | Do. Vellore                         | .. | .. | 2,187                    |
| 10                                                 | Do. Tanjore                         | .. | .. | 2,054                    |
| 11                                                 | Do. Vijayavada                      | .. | .. | 2,625                    |
| 12                                                 | Do. Salem                           | .. | .. | 1,995                    |

(iv) *Madras Corporation Veterinary Dispensaries.*—The Corporation of Madras continued to maintain three Veterinary dispensaries at the cattle depots, viz., B, D and F. The total number of animals treated and castrated in these Veterinary dispensaries are as shown below :—

| Depot. | In-patients. | Out-patients. | Castrations. |
|--------|--------------|---------------|--------------|
| B ..   | ..           | 1,770         | ..           |
| D ..   | ..           | 2,302         | ..           |
| F ..   | ..           | 2,447         | 6            |

82. *Veterinary institutions.*—Out of 147 Veterinary institutions, 74 institutions continued to be located in Government buildings during the period. Thirteen of the institutions located in Government buildings were electrified. The remaining Veterinary institutions were either located in rented or donated buildings. Most of the rented buildings are totally unfit for use as Veterinary institutions. They do not and cannot provide the ordinary facilities required for a modern hospital to render efficient professional aid to the clients. A stage has come to revise our policy and to make available departmental buildings for better service and efficiency. The total number of Veterinary institutions supplied with microscopes was 49 at the end of the period. There were 13 frigidaires supplied to the Veterinary institutions.

83. The policy of obtaining contributions from the public or local bodies towards the maintenance of Veterinary institutions and minor Veterinary dispensaries in the State has been pursued and there has been appreciable response. The names of the individual donors or local bodies are furnished below :—

#### *Visakhapatnam district.*

The panchayat board and the public of Chodavaram have promised to donate a sum of Rs. 4,000 for the construction of a Veterinary Dispensary, at Chodavaram.

#### *East Godavari district.*

(i) The villagers have contributed Rs. 200 towards the cost of the medicine, etc., for Minor Veterinary Dispensary, Gokavaram, and also contributed several furniture for the Minor Veterinary Dispensary. They are also paying a rent of Rs. 10 per mensem for the building.

(ii) The panchayat board is paying Rs. 336 per annum towards rent for Minor Veterinary Dispensary, Ramachandrapuram.

(iii) The villagers of Pedapudi have constructed a decent building for Minor Veterinary Dispensary, Pedapudi.

(iv) The panchayat board is paying a sum of Rs. 400 per annum towards the rent of the Minor Veterinary Dispensary, Tuni.

#### *West Godavari district.*

The Panchayat Boards, Pippera, Gundugolanu and Akividu donated rent-free buildings for the location of minor Veterinary dispensaries. The two Veterinary institutions at Tadepalligudam and Bhimavaram are run with half contribution from the local bodies.

#### *Krishna district.*

Four minor Veterinary dispensaries in the district are housed in buildings donated by the public and Zamindar of Challapalli.

#### *Guntur district.*

In addition to the building constructed by the public of Nidubrole for maintaining the Veterinary Dispensary, Nidubrole, a decent Mangalore-tiled structure has been constructed and handed over to this department with a breeding bull worth Rs. 1,000 and the present artificial insemination centre has been opened in it. The bull is being utilized for the artificial insemination centre.

#### *Nellore district.*

Nil.

#### *Kurnool district.*

(i) The Panchayat Board, Dhone, has contributed Rs. 15 per mensem towards the Minor Veterinary Dispensary, Dhone.

(ii) The minor Veterinary dispensary buildings at Kumbam and Panyam were given free of rent.

#### *Cuddapah district.*

Nil.

#### *Anantapur district.*

Nil.

#### *Bellary district.*

The panchayat board has given rent-free building for locating the Minor Veterinary Dispensary at Kottur.

#### *Chittoor district.*

The Veterinary Dispensary, Piler, is located in a building donated to this Department by the District Board, Chittoor.

The Minor Veterinary Dispensary at Chandragiri is located in a private building without rent.

#### *Madras City.*

Nil.

#### *Chingleput district.*

The District Board, Chingleput, has contributed 50 per cent of the recurring expenditure towards running the Veterinary Dispensary, Kaliyampundi.

#### *North Arcot district.*

The Panchayat Board, Arkonam, meets the recurring expenditure of the Veterinary Dispensary, Arkonam.

The Minor Veterinary Dispensary, Cheyyar, is located in the building belonging to Panchayat Board, Cheyyar, free of rent.

The Municipality at Tirupattur has consented to contribute half of the recurring expenditure for running a Veterinary Dispensary at Tirupattur.

The Municipal Council, Vaniyambadi, has agreed to contribute 50 per cent of the recurring and non-recurring expenditure for running a Veterinary Dispensary along with a rent-free building.

*South Arcot district.*

Nil.

*Tanjore district.*

The District Board, Tanjore, and His Holiness the Pandara Sannidhi, Tiruppanandal, continued to pay the necessary contributions towards running the Veterinary institutions at Pattukottai, Papanasam, Sirkali, Arantangi and Tiruppanandal.

*Tiruchirappalli district.*

The District Board, Tiruchirappalli, meets half the recurring expenditure for the Veterinary Dispensary at Manapparai.

*Madurai district.*

The District Board, Madurai, and the Panchayat Board, Tirumangalam, meet half the recurring expenditure for running the Veterinary Dispensary at Tirumangalam.

The Bodinaickanur Municipality meets half the recurring expenditure for running the Veterinary Dispensary at Bodinaickanur.

The Palni Municipality and Sri Dandayudapaniswami Devasthanam, Palni, meet each one-third or half the recurring expenditure towards running the Veterinary Dispensary, Palni.

The Panchayat Board, Cumbum, pays a lump-sum contribution of Rs. 200 per annum towards the maintenance of Minor Veterinary Dispensary, Cumbum, in addition to payment of rent for the Veterinary Dispensary building.

*Ramanathapuram district.*

The Veterinary Dispensary, Karaikudi, is run on contribution basis since September 1938. The Karaikudi Municipality agreed to contribute a sum of Rs. 1,000 per mensem.

Sivakasi Municipality has donated a building and also agreed to contribute a sum of Rs. 750 per mensem towards the maintenance of Minor Veterinary Dispensary, Sivakasi.

The Tirupattur Panchayat Board continued to contribute a sum of Rs. 240 towards payment of rent for the Minor Veterinary Dispensary, Tirupattur.

*Tirunelveli district.*

The District Board, Tirunelveli, has contributed half the recurring expenditure towards running the Veterinary Dispensaries, Tenkasi and Sivagiri.

The rent for the minor Veterinary dispensary buildings at Koilpatti and Valliyur are being paid by Sri A. Ramaswami Doss, M.L.A., and the Panchayat Board, Valliyur, respectively.

The Panchayat Board, Kadayanallur, has agreed to contribute Rs. 1,500 per annum if an institution is opened in the area.

*Salem district.*

Nil.

*Coimbatore district.*

The District Board, Coimbatore, has contributed 50 per cent for running the Veterinary dispensaries, Annur, Vettaikaranpudur and Ramachandrapuram.

The Panchayat Boards, Singanallur and Uppilipalayam, have contributed 25 per cent each for Veterinary Dispensary, Singanallur.

The Minor Veterinary Dispensary at Kurichikottai is located in a rent-free building belonging to Sri G. Ramaswami Naidu, Director, Tirumurthi Mills, Udamalpet.

The Veterinary Dispensary at Nathakadayur is located in a rent-free building given by the Pattagar of Palayakottai.

The Minor Veterinary Dispensary, Andhiyur, is located in a rented building, the rent of which is being paid by the Panchayat Board, Andhiyur.

The Panchayat Boards, Kodimudi, Punjaipuliyampatti, Perundurai and Palladam, contribute towards maintenance of the minor Veterinary dispensaries located in their places.

The Mettupalayam Municipality has to contribute 50 per cent of the recurring expenditure towards running the Veterinary Dispensary, Mettupalayam.

*Malabar district.*

The Panchayat Board, Chowghat, is contributing Rs. 600 per annum towards running the Veterinary Dispensary, Chowghat.

*South Kanara district.*

Nil.

While the policy of eliciting contributions from private and local bodies has the welcome advantage of stimulating local interest, it has brought an unequal distribution of veterinary institutions in the State. One way to overcome this disparity is to leave the discretion with the Director of Animal Husbandry to accept whatever contributions are forthcoming from backward districts for opening Veterinary institutions without insisting on the 50 per cent contribution.

## VIII. ITINERATING STAFF.

84. Two new touring billets were opened during the period under report. The number remained to be 182 at the end of the period under report of which 134 stand converted into minor Veterinary dispensaries on 30th September 1953.

Thirty-eight thousand and eighty-nine castrations were performed and 136,067 cases were treated by the touring staff both at headquarters and on tour during the period as against 55,159 castrations done and 175,105 cases treated during 1952-53.

## IX. DISEASES AMONG LIVESTOCK.

85. (i) One thousand seven hundred and fifty outbreaks of various diseases were received during the period as against 2,843 during the last year. The statistics of mortality among livestock in the State and the number of preventive inoculations and vaccinations conducted are furnished in Tables I and II, respectively.

(ii) *Rinderpest*.—The period under review records another successful endeavour in ensuring the freedom from Rinderpest of all the southern districts of the State except for two outbreak reports in the districts of Madras and North Arcot. The visitation of the disease in a severe form in the year before last continued to smoulder with diminished intensity in all the northern and Rayalaseema district except Nellore, Chittoor and Bellary. The districts that suffered most were Visakhapatnam, East Godavari, West Godavari and Krishna. The other districts in the order of severity are Kurnool, and Cuddapah. The policy of mass immunisation of all susceptible cattle in these districts and at important inter-State cattle contact areas are being pursued. But poor communication and the absence of quick conveyance, like a Land Rover or jeep to contact the interior scenes of outbreak and absence of refrigeration facilities at present at important headquarters, veterinary institutions for storing biologicals are indeed the factors that mitigate against the endeavour of the field staff in arresting and eradicating the disease.

(iii) *Hæmorrhagic septicæmia*.—Hæmorrhagic septicæmia was more or less prevalent throughout the State during the period. The disease was rather severe in Visakhapatnam, East Godavari, West Godavari, Nellore, Tanjore and Malabar districts and was moderately severe in Guntur, Krishna, Cuddapah, Chittoor, Chingleput, Tiruchirappalli, Madurai, Coimbatore and South Kanara districts. There were 554 outbreak reports with a mortality of 2,760 recorded as against 1,064 outbreak reports with 5,300 deaths in the previous year.

(iv) *Blackquarter*.—The disease was widely spread throughout the State excepting in the districts of West Godavari, Guntur and South Kanara. The districts of Salem, Tanjore, Coimbatore and Madurai recorded the largest number of outbreaks during the period. Four hundred and fifty-six outbreaks were received with a mortality of 1,739 as against 700 outbreaks with 2,890 deaths of the previous year. The great reduction in loss to the farmers and control in this disease is mainly due to the very intelligent manner in which the District Veterinary Officers with their itinerating staff have diverted their energies in dealing with the endemic areas, well in advance of the seasonal manifestation of the disease.

(v) *Anthrax*.—Anthrax prevailed in all the districts of the State except West Godavari, Krishna, Cuddapah, Kurnool, Madras, North Arcot, Tanjore and South Kanara. The disease was not severe. There were 130 outbreak reports recording a mortality of 1,407 in the period under review as compared with 221 reports with 1,591 deaths in the previous year. Large number of vaccinations were done in susceptible stock in endemic areas. Certain field experimental vaccinations against this disease with a view to complete control are being pursued and the results watched.

(vi) *Foot-and-mouth disease*.—There were 66 outbreak reports with a mortality of only 42 animals and this disease was prevalent in all the northern districts except Krishna and Chittoor. Among the southern districts it was prevalent only in Chingleput, Coimbatore and Malabar districts.

86. *Reporting of outbreaks*.—There was no change in the system of recording mortalities among cattle, the Revenue authorities continued to record the same. The inaccuracies and discrepancies in mortality figures under various diseases between the departmental figures as recorded by the staff and those furnished by the Revenue authorities continued to exist. The mortality figures under the main contagious diseases among all classes of animals as reported by the Collectors of the districts and by the departmental staff are furnished below :—

Delays in prompt reporting of outbreaks of cattle diseases are still responsible to a great extent for the undue loss in stock, the establishment of the disease and the delay in instituting timely preventive measures. It is needless to emphasise the importance of expeditious reporting of outbreaks by the village munsifs not

only to save loss and control the disease, but at the same time to do it at great saving to the State.

|                                   | R.P.  | H.S.  | B.Q.  | Anthrax. | Foot-and-mouth. | Total. |
|-----------------------------------|-------|-------|-------|----------|-----------------|--------|
| By Collectors .. .. .             | 1,875 | 2,611 | 1,712 | 299      | 39              | 6,536  |
| By the departmental staff .. .. . | 2,574 | 2,760 | 1,739 | 415      | 40              | 7,528  |

NOTE.—R.P.—Rinderpest.  
H.S.—Hæmorrhagic septicæmia.  
B.Q.—Blackquarter.

The discrepancies between the Collectors and departmental mortality figures were as usual brought to the notice of Revenue authorities by the district departmental staff for reconciliation.

87. *Mortality*.—The total number of mortality from Rinderpest, Hæmorrhagic septicæmia, Blackquarter and Anthrax was 8,480 as against 13,000 of the previous year. The average mortality figure per outbreak on account of these contagious diseases was 5.2 as against 5.3 of the previous year.

The incidence of mortality from these diseases during the period 1st April 1953 to 30th September 1953 were as follows :—

|                                | Attacks. | Deaths. |
|--------------------------------|----------|---------|
| Rinderpest .. .. .             | 4,954    | 2,574   |
| Hæmorrhagic septicæmia .. .. . | 2,974    | 2,760   |
| Blackquarter .. .. .           | 1,811    | 1,739   |
| Anthrax .. .. .                | 1,460    | 1,407   |
| Foot-and-mouth .. .. .         | 3,138    | 40      |

#### CATTLE DISEASES.

##### (a) *Contagious diseases—Cattle.*

88. (i) *Rinderpest*.—There were 445 outbreak reports with 2,574 deaths as against 515 outbreaks with 3,349 deaths during 1952-53. As in the past year, the disease prevailed in the adjoining districts of the neighbouring States of Hyderabad, Mysore and Madhya Pradesh. The number of animals protected against the disease and the mortality among the inoculated ones were as follows :—

| Kind of animals and method of protection.  | In actual outbreaks. |              | In clean areas.    |              | Total.             |              |
|--------------------------------------------|----------------------|--------------|--------------------|--------------|--------------------|--------------|
|                                            | Number inoculated.   | Number died. | Number inoculated. | Number died. | Number inoculated. | Number died. |
| <b>Cattle—</b>                             |                      |              |                    |              |                    |              |
| Serum simultaneous with goat virus .. .. . | 109,875              | ..           | 88,888             | ..           | 198,763            | ..           |
| Serum alone method .. .. .                 | 5                    | ..           | ..                 | ..           | 5                  | ..           |
| Freeze dried vaccine .. .. .               | 52,817               | 3            | 113,544            | ..           | 166,361            | 3            |
| Total .. .. .                              | 162,697              | 3            | 202,432            | ..           | 365,129            | 3            |

The total number of inoculations done against Rinderpest during the period and last two years is furnished below :—

|                                                         |         |
|---------------------------------------------------------|---------|
| 1951-52 .. .. .                                         | 641,978 |
| 1952-53 .. .. .                                         | 630,560 |
| 1953-54 (1st April 1953 to 30th September 1953) .. .. . | 365,129 |

(ii) *Hæmorrhagic septicæmia*.—Five hundred and fifty-four outbreaks with 2,760 deaths were recorded during the period as against 1,063 outbreaks with 5,285 deaths in the previous year. The districts of Visakhapatnam, East Godavari, West Godavari, Nellore, Tanjore and Malabar recorded the largest number of outbreaks. One lakh forty thousand two hundred and thirty-two animals were protected against the disease by vaccine alone method in actual outbreaks. Besides 6,648 vaccinations were carried out in disease-free endemic

and epidemic areas as a preventive measure. Two lakhs fifty-six thousand four hundred and fifty-two vaccinations in actual outbreaks and 13,746 vaccinations in free areas were conducted against the disease during 1952-53.

(iii) *Blackquarter*.—Four hundred and fifty-six outbreaks with 1,739 deaths were received as against 699 outbreaks with 2,888 deaths of the previous year. The disease was not prevalent in the districts of West Godavari, Guntur and South Kanara. One lakh twelve thousand eight hundred and eighty-three vaccinations were done in actual outbreaks and 9,007 vaccinations in disease-free areas during the period. During the last year 16,347 bovines in actual outbreaks and 19,355 bovines in disease-free areas were protected against the disease.

(iv) *Anthrax*.—Sixty-nine outbreak reports with 415 deaths were recorded during the period as against 177 outbreak reports with 993 deaths of the previous year. The districts of West Godavari, Guntur, Krishna, Cuddapah, Kurnool, North Arcot, Madras, Tanjore and South Kanara were free from this disease during the period. Seven thousand three hundred and thirty-three bovines were protected against the disease in actual outbreaks and 1,594 in clean areas. Besides 785 animals were protected by the serum alone method. Fourteen thousand eight hundred and eighteen bovines were protected against the disease by vaccine alone method and 3,126 by serum alone method during the previous year.

(v) *Foot-and-mouth*.—Sixty-six outbreak reports were recorded during the period as against 193 of the previous year. There were 40 deaths during the period while the deaths recorded during the previous year were 53. The districts of Krishna, Chittoor, South Arcot, North Arcot, Tanjore, Tiruchirappalli, Madurai, Ramanathapuram, Tirunelveli and South Kanara were free from this disease.

(vi) *Surra (Trypanosomiasis in cattle)*.—Thirty-four outbreak reports with 96 deaths were recorded during the period as against 37 outbreak reports with 55 deaths in the previous year.

(vii) *Nasal Schistosomiasis*.—Nine hundred and seventy-nine cases were treated for this affection during the period as against 1,642 cases of the last year. Large number of cases were treated in the districts of Tanjore, Tiruchirappalli, Madurai, Ramanathapuram, Tirunelveli and Salem.

(viii) *Johne's disease*.—Six cases were confirmed.

(ix) *Brucellosis*.—Out of four cases suspected for the disease, one case was confirmed.

(x) *Bovine lymphangitis*.—One hundred and fourteen cases were met with during the period.

(xi) *Coccidiosis*.—Out of 396 cases met with, 217 cases were confirmed microscopically.

(xii) *Rabies*.—Four hundred and fifty-nine animals were given anti-rabies treatment free of cost.

(xiii) *Ephemeral fever*.—Nine hundred and fifty-one cases were treated for this affection.

(xiv) *Piroplasmosis*.—Two hundred and seventeen cases were treated and cured on clinical symptoms of which 48 cases were confirmed microscopically.

(xv) *Mange*.—Five hundred and forty-eight animals were treated for this condition during the period.

(xvi) *Cancer*.—Four hundred and twenty-eight cases of cancer of horn and eye were treated.

#### (b) Non-contagious diseases.

89. (i) *Rheumatic arthritis or fluorosis*.—Six hundred and fifty-one cases were treated. The majority of the cases were found in the districts of Guntur, Kurnool and Anantapur. The use of bonemeal in the rations of stock in these fluorite areas is being advocated by the departmental staff. Large stocks of bonemeal are now stored in all the veterinary institutions for sale at actual cost for the farmers, as a preventive against this condition, and it has become very popular.

(ii) *Urethral calculi*.—One hundred and forty-seven cases were treated by surgical intervention and relieved.

(iii) *Chronic Luxation of Patella*.—Two thousand nine hundred and eleven cases were met with and treated. The majority of cases were met with in the districts of Chingleput, North Arcot, Tanjore, Tiruchirappalli, Madurai, Salem and Coimbatore during the period.

(iv) *Haematuria in cattle*.—Fifty-five cases were met with and treated.

(v) *Strongylosis in cattle (calves)*.—One thousand seven hundred and six cases were treated for this disease.

(vi) *Sterility*.—One hundred and seventy-nine cases were treated for this affection during the period.

(vii) *Mastitis*.—One hundred and twenty-three cases were met with and treated.

#### DISEASE AMONG SHEEP AND GOATS.

90. *Contagious diseases*.—During the period under report, the following diseases among sheep and goats were reported :—

| Name of the disease. |    |    |    |    |    |    | Number of outbreaks. | Number of deaths. |
|----------------------|----|----|----|----|----|----|----------------------|-------------------|
| 1 Anthrax            | .. | .. | .. | .. | .. | .. | 61                   | 992               |
| 2 Sheep-pox          | .. | .. | .. | .. | .. | .. | 36                   | 274               |
| Total ..             |    |    |    |    |    |    | 97                   | 1,266             |

91. *Protection against the disease*.—(i) The number of animals protected against different diseases was as follows :—

|                |    |    |    |    |    |    |       |
|----------------|----|----|----|----|----|----|-------|
| 1 Blackquarter | .. | .. | .. | .. | .. | .. | 215   |
| 2 Anthrax      | .. | .. | .. | .. | .. | .. | 8,888 |
| 3 Sheep-pox    | .. | .. | .. | .. | .. | .. | 5,585 |

(ii) *Helminthiasis*.—There were three outbreak reports with 21 attacks and 19 deaths recorded in Salem district and 487 sheep were dewormed. In Kurnool district 450 sheep were dewormed with Phenovis.

(iii) *Enterotoxaemia*.—Nineteen outbreak reports with 473 mortalities were reported in Anantapur, South Arcot, North Arcot and Ramanathapuram districts and 4,757 C1. Welch Anaaculture Vaccinations were conducted against the disease.

#### OTHER ANIMALS.

92. *Canines*.—(a) (i) *Piroplasmosis*.—Seven cases were treated successfully for this affection.

(ii) *Mange*.—Forty cases were treated and cured.

(iii) *Distemper*.—Twenty-nine cases were treated.

93. *Equines*.—(b) *Surra*.—Three cases were met with and one died.

94. (c) *Diseases of poultry*.—(i) *Fowl-cholera*.—Two reports were recorded with fifty-two attacks and fifty-two deaths from Chingleput district. One hundred and sixty fowls were protected against the disease in the affected areas.

(ii) *Fowl-pox*.—Eight outbreak reports with 63 attacks and 9 deaths were received during the period under report. Three hundred and seventy-six birds were protected against the disease in actual outbreaks and 944 birds in clean areas.

(iii) *Ranikhet disease*.—Sixteen outbreak reports with 458 attacks and 439 deaths were recorded during the period under report in the districts of Anantapur, Chittoor, Chingleput, North Arcot, Madurai and Ramanathapuram. Ten thousand seven hundred and sixty-eight birds were protected against the disease in the affected areas. Seventy-nine thousand three hundred and twenty-six birds were protected in the free areas. Large scale vaccinations against this disease, has become a feature, which is very well appreciated by the poultry farmers in the State. Ranikhet disease once so dreaded and which inflicted such devastating marks on this industry is well under control. An increasingly large number of ryots have taken to poultry farming under the protecting influence of veterinary health service against the disease.

## X. INVESTIGATION AND RESEARCH.

### MADRAS VETERINARY COLLEGE.

95. The several departments of the College engaged themselves in the following research activities during the period :—

*Anatomy*.—(1) Transparent specimens of internal ear as a teaching aid in Histology.

*Biology*.—Faeces as test-material for pregnancy diagnosis in Mammalia.

*Parasitology*.—(1) The systematic survey of helminths in pigs in Madras was continued. Nymph of *Linguatula* was recorded from the lung of a pig for the first time.

(2) Work on the transmission of *Trypanosoma evansi* in chicks and chick embryos was continued.

(3) Studies on the behaviour of *T. evansi* in Vitro as well as in the body of its host after death were undertaken.

*Bacteriology*.—(1) Research in Bovine Lymphangitis was continued during the period under report.

(2) Research on "Bacteriology of Bovine Mastitis" was taken up during the period.

(3) Studies on *Pseudomonas aeruginosa* infection was under progress.

(4) *Nervous form of Ranikhet Disease*.—A batch of thirteen birds from Hosur Cattle Farm showing nervous symptoms was admitted into the hospital for investigation. Result of investigation showed it to be nervous form of Ranikhet disease.

### DISEASE INVESTIGATION STAFF.

96. The Veterinary Investigation Officer, Ranipet, carried out investigations on the following diseases :—

(i) *Anthrax*.—The disease was investigated in 57 centres in the districts of Malabar, Madurai, Chingleput, North Arcot, South Arcot, Chittoor, Coimbatore, Krishna, East Godavari, Guntur, Nellore, Nilgiris, Ramanathapuram, Salem and Bellary. Of these 26 centres were endemic ones where repeated spore

vaccinations have been in progress for some time, and the rest were primary centres of infection. In one centre in Madurai district Anthrax and arsenical poisoning were both confirmed. In all, there were 153 attacks and 144 deaths before vaccinations.

Biological tests were conducted with materials received from 33 centres of which five proved positive. The disease was also confirmed microscopically in seven centres.

(ii) *Vaccinations*.—In all 6,233 cattle and 778 buffaloes were vaccinated in actual outbreaks and in endemic areas. The results of vaccinations every where have been uniformly good. After vaccination four attacks and four deaths have occurred among the vaccinated and thirteen attacks and ten deaths have occurred among the unvaccinated. The deaths that have occurred among the vaccinated were all during the period of incubation when vaccinated.

(iii) *Brucellosis*.—The disease was investigated in 24 centres in the districts of Nellore, Madurai, Ramanathapuram, Tirunelveli, Coimbatore and Visakhapatnam. Of these, one was a Government farm. Of these centres, seven were endemic areas where vaccinations have been in progress for some time and 17 were new centres where in the disease was detected for the first time. Of these 17 centres where the disease was detected, nine were in Madurai district, three were in Coimbatore district, two were in Nellore district and three in Tirunelveli district. Of the 405 samples of sera tested from suspected and incontact animals, 16 proved positive and four suspicious. Apart from this 53 samples of sera were collected and tested from vaccinated calves at different periods after vaccination. The maximum titre that was recorded was 1,320.

(iv) *Vaccinations*.—One thousand one hundred and thirty-five calves and 51 adults were protected against the disease with *Brucella Vaccine Cotton Strain No. 19*, of which 992 animals were protected with the vaccine produced at the Veterinary Biological and Research Institute, Ranipet.

(v) *Results of previous vaccinations*.—Verification of results of vaccination done with the Indian Veterinary Research Institute vaccine in old centres revealed that it is quite satisfactory and no abortions were reported among the vaccinated.

(vi) *Abortions in Dairy-cum-Bul Farm, Visakhapatnam*.—There had been 12 abortions within a course of two months in the farm and it was investigated into. Blood serum of 321 animals were tested for Brucellosis of which three proved positive and four suspicious. Blood smears of 405 animals were examined microscopically and three cases of Tryps detected among the aborters and five among the healthy lot. The possibility of this inter-current infection playing a part in the abortions is being investigated. Antrycide treatment has been advocated both as a prophylactic and a curative measure against the disease. Added to this blood serum collected from the 320 animals is being sent to Indian Veterinary Research Institute, Mukteswar, for complement fixation test to detect latent cases of Tryps. Apart from this vaginal swabs were taken from 12 animals and they were examined for Trichomonos infection but they all proved to be negative. Cultural examination of the swabs did not reveal anything significant.

(vii) *Obscure diseases*.—A report of sudden mortality among the animals in the District Livestock Farm, Malabar, was investigated into, which revealed that the disease was confined to one lot of seven animals isolated as aborters. The onset was sudden and the symptoms were all of an acute nature. Two animals died and the rest recovered with treatment. Blood smears from all the recovered animals revealed nothing. However, to eliminate latent protozoan infection, blood serum from four of the recovered animals was sent to Mukteswar and the results are awaited. The suddenness of the onset, and the acute nature of the disease is suggestive of plant poisoning and the results of examination of materials sent to the Chemical Examiner from two dead animals are awaited. The

results of histopathological examination of the materials sent to the Principal, Madras Veterinary College, are also awaited. Necessary instructions have been given to the Superintendent of the farm, to send smears periodically for examination to eliminate Trypanosomes.

(viii) *Lepto-spiral infection among buffaloes in Kanigiri taluk.*—The investigation on this disease was further pursued. Four villages were visited in this connexion. In one village two post-mortem examinations were conducted and the post-mortem lesions were not so characteristic of infectious jaundice. Materials were collected from these two cases as also from 12 other ailing animals and sent to the Indian Veterinary Research Institute, Mukteswar, and the foreign workers for examination. The results received from the Indian Veterinary Research Institute, Mukteswar, did not confirm lepto-spira. The other results are awaited. The results of post-mortem suggest that the affection might be one of Fasciola infection.

Biological tests were conducted in the laboratory with materials obtained from suspected cases on 16 guinea pigs, two buffaloes and two dogs. Of this, six guinea pigs died but smears did not reveal any lepto-spira. Of the two dogs, one died and smears did not reveal lepto-spira. Organs from all the guinea pigs dead, and also serum and organs from the dead dog and serum from the two buffaloes and the other dog have been sent to Indian Veterinary Research Institute, Mukteswar, for examination. Results of examination of some of the specimens did not confirm lepto-spira. The result of examination of the other materials are awaited.

(ix) *Circling disease in Lam Farm, Guntur.*—Further investigation on this was taken up. Smears from 157 animals were examined. But in none Tryps could be detected. Serum was collected from 31 animals (incontacts) and sent to Indian Veterinary Research Institute, Mukteswar, for complement fixation test of which eight proved positive and two proved strongly positive for the test.

An ailing cow was examined. As the animal was showing improvement with Trypan Blue treatment, it was decided to observe the animal for some more time. The animal was subsequently destroyed and post-mortem revealed caseation of brain. Materials have been sent for histopathological examination to Indian Veterinary Research Institute, Mukteswar, and results are awaited.

(x) *Deaths among municipal bullocks at Vijayanagaram.*—A report was received from the Veterinary Assistant Surgeon, Vijayanagaram, that six deaths had occurred among the municipal bullocks. Smears examined from 19 animals sent by the Veterinary Assistant Surgeon did not reveal any Tryps. The symptoms noted were much emaciation in the animals and many of them had opacity of the cornea. On inspection of all the animals, the general condition was found very poor. The other symptoms noted were dullness, salivation, nasal discharge, laboured breathings and death. One animal reported to have shown nervous symptoms, was alive. Examination of smears of all the 27 animals in the depot did not reveal any protozoan infection. Blood serum collected from all the animals was sent to Indian Veterinary Research Institute, Mukteswar, to eliminate latent Tryps. The animals were advised better feeding and rest. The investigations conducted and results of materials examined suggest that the cause of the affection may be more of a nutritional origin due to bad management than due to any other specific cause.

(xi) *Outbreak of an obscure disease at Razole, East Godavari district.*—Investigation on information received from the District Veterinary Officer, East Godavari district, that a large number of animals had died in a village in Razole taluk revealed that in Thattipaka village of Razole taluk, there had been an outbreak of a disease resulting in 40 attacks and 15 deaths. It was noted that the disease was confined to the herd of one particular owner. The symptoms were anorexia tympany, stiffness, lameness, wry neck and in one case fits, with tympany and impaction being predominant. Most of the affected animals died after a duration

of illness ranging from over three to five days excepting in one case where the death was sudden.

The disease was eliminated for protozoan infection by examining the blood smears off the entire lot of 57 animals both buffaloes and white cattle. Serum was collected from 20 recovered animals and sent to Indian Veterinary Research Institute, Mukteswar, for test and the results are expected.

That the disease was confined to one particular herd, gave suspicion to believe that it might be due to poisoning either vegetable or criminal. A search was made in the grazing areas and tender sama grass was collected and sent to the Chemical Examiner for analysis. This was done to eliminate the possibility of that being the cause. Added to this, stomach contents were collected from three carcasses two of them having been exhumed after eight days and ten, respectively. The appearances of these carcasses suggested that it might not be a surprise if arsenical poisoning was detected. The stomach contents were sent to the Chemical Examiner and the results are expected. Based on the tentative diagnosis that arsenic might be the cause suitable antidotes were recommended to be tried on the ailing cases and it is gratifying to note that three of the suffering animals have recovered. No further attacks have been reported.

(xii) *T.B. and Johnes disease in the Lam Farm, Guntur.*—Since one Ongole cow proved positive for Johnes disease on post-mortem and another Ongole cow was showing clinical symptoms of the disease, a selected batch of 25 weak animals, 16 white cattle and nine buffaloes were subjected both to Tuberculin and Johnes tests by the double intra-dermal method. Of this, the clinically positive case and another Murrah buffalo proved positive for T.B. and one Ongole bullock and one cow turned out to be suspicious for T.B. Necessary recommendations were made for the disposal of the positive cases from the farm. On post-mortem, the clinically positive case proved positive while in the Murrah buffalo microscopical confirmation could not be got on post-mortem.

(xiii) *Calf-mortality in District Livestock Farm, Koila, South Kanara district.*—Since calf-mortality in this farm among Murrah buffaloes had occurred last year during the rainy season and also this year in the same season, the farm was visited to study the same. It was noted that, during the present season, 16 calves died of which three were due to Haemorrhagic septicæmia. It could be clearly stated that, while diseases might have caused death in the calves, adverse weather condition is the primary factor. The rainfall was so high that the calves were not able to tolerate it with the inadequate accommodation provided for them. Along with this, the calvings were also more during the period and as such the period, i.e., up to three months when these calves should have the best of climatic conditions to survive was not found. The clinical symptoms and post-mortem lesions were also suggestive of diseases, pre-disposed by extreme cold weather. It was also noted on examining the faeces of 26 calves that ascaris infection was there to aggravate the malady.

Treatment for ascariasis was also suggested. Since materials from actually dead calves were not available during the stay there, attempts are being made to collect them and make a critical study in the laboratory.

#### SCHEME FOR THE INVESTIGATION INTO THE DISEASES OF POULTRY.

97. During the period under report, the following important poultry diseases were investigated and necessary preventive and curative measures were adopted by the Assistant Disease Investigation Officer (Poultry):—

(i) *Ranikhet disease.*—The incidence of this disease has been recorded in the following districts, viz., Visakhapatnam, East Godavari, Krishna, Guntur, Nellore, Cuddapah, Kurnool, North Arcot, Salem, Coimbatore West, Coimbatore East (Erode), Tiruchirapalli, Tirunelveli, Malabar and South Kanara districts affecting all ages and breeds of birds, both indigenous and exotic and the disease was noticed to occur all round the period.

From the reaction statements received from the field staff for vaccinations done against Ranikhet disease in the different districts, following are the percentage of reactions observed :—

| <i>Exotic birds.</i>                |                                   |     |             |      |            |     |  |
|-------------------------------------|-----------------------------------|-----|-------------|------|------------|-----|--|
| Serial number and name of district. | Total number of birds vaccinated. |     | Drowsiness. |      | Diarrhoea. |     |  |
|                                     | Per cent.                         |     | Per cent.   |      | Per cent.  |     |  |
|                                     | F                                 | A   | F           | A    | F          | A   |  |
| (1)                                 | (2)                               | (3) | (4)         | (5)  | (6)        | (7) |  |
| 1 Visakhapatnam .. .. .             | 1,006                             | ..  | 3.5         | ..   | 3.4        | ..  |  |
| 2 East Godavari .. .. .             | 282                               | ..  | ..          | ..   | ..         | ..  |  |
| 3 Krishna .. .. .                   | 520                               | 201 | 15.4        | 11.0 | 5.0        | 9.0 |  |
| 4 Guntur .. .. .                    | 47                                | ..  | 1.0         | ..   | 1.0        | ..  |  |
| 5 Nellore .. .. .                   | 285                               | ..  | 14.0        | ..   | 13.0       | ..  |  |
| 6 Cuddapah .. .. .                  | 209                               | ..  | 12.0        | ..   | 40.0       | ..  |  |
| 7 Kurnool .. .. .                   | 19                                | ..  | 1.0         | ..   | ..         | ..  |  |
| 8 North Arcot .. .. .               | 1,103                             | ..  | 38.0        | ..   | 2.0        | ..  |  |
| 9 Salem .. .. .                     | 1,057                             | ..  | 6.0         | ..   | ..         | ..  |  |
| 10 Coimbatore, West .. .. .         | 3,631                             | ..  | 3.1         | ..   | 1.8        | ..  |  |
| 11 Coimbatore, East (Erode) .. .. . | 2,286                             | ..  | 2.1         | ..   | 0.8        | ..  |  |
| 12 Tiruchirappalli .. .. .          | 1,070                             | ..  | 28.5        | ..   | 11.2       | ..  |  |
| 13 Tirunelveli .. .. .              | 216                               | ..  | 20.0        | ..   | 10.0       | ..  |  |
| 14 Malabar .. .. .                  | 450                               | ..  | 11.0        | ..   | ..         | ..  |  |
| 15 South Kanara .. .. .             | 601                               | ..  | 17.4        | ..   | 1.0        | ..  |  |
| Total ..                            | 12,782                            | 201 | ..          | ..   | ..         | ..  |  |
| Average per cent ..                 | ..                                | ..  | 11.53       | 11.0 | 5.98       | 9.0 |  |

| Serial number and name of district. | Paralysis. |      | Egg stoppage. |      | Mortality. |      | Reaction mild or severe. |
|-------------------------------------|------------|------|---------------|------|------------|------|--------------------------|
|                                     | Per cent.  |      | Per cent.     |      | Per cent.  |      |                          |
|                                     | F          | A    | F             | A    | F          | A    |                          |
|                                     | (8)        | (9)  | (10)          | (11) | (12)       | (13) | (14)                     |
| 1 Visakhapatnam .. .. .             | ..         | ..   | 3.0           | ..   | 1.0        | ..   | M                        |
| 2 East Godavari .. .. .             | ..         | ..   | ..            | ..   | ..         | ..   | ..                       |
| 3 Krishna .. .. .                   | 3.3        | 12.0 | 16.5          | 2.6  | ..         | 1.3  | M                        |
| 4 Guntur .. .. .                    | ..         | ..   | ..            | ..   | ..         | ..   | M                        |
| 5 Nellore .. .. .                   | ..         | ..   | ..            | ..   | ..         | ..   | M                        |
| 6 Cuddapah .. .. .                  | ..         | ..   | 1.2           | ..   | ..         | ..   | M                        |
| 7 Kurnool .. .. .                   | ..         | ..   | ..            | ..   | ..         | ..   | M                        |
| 8 North Arcot .. .. .               | ..         | ..   | 4.0           | ..   | ..         | ..   | ..                       |
| 9 Salem .. .. .                     | ..         | ..   | 2.0           | ..   | ..         | ..   | M                        |
| 10 Coimbatore, West .. .. .         | 0.7        | ..   | 2.0           | ..   | ..         | ..   | M                        |
| 11 Coimbatore, East (Erode) .. .. . | ..         | ..   | 0.6           | ..   | ..         | ..   | M                        |
| 12 Tiruchirappalli .. .. .          | 5.3        | ..   | 5.8           | ..   | 1.6        | ..   | M                        |
| 13 Tirunelveli .. .. .              | 13.0       | ..   | 20.0          | ..   | 3.0        | ..   | M                        |
| 14 Malabar .. .. .                  | ..         | ..   | ..            | ..   | ..         | ..   | M                        |
| 15 South Kanara .. .. .             | 2.2        | ..   | 2.5           | ..   | ..         | ..   | M                        |
| Total ..                            | ..         | ..   | ..            | ..   | ..         | ..   | ..                       |
| Average per cent ..                 | 1.63       | 12.0 | 3.84          | 2.6  | 0.37       | 1.3  | M                        |

A = Affected areas.

F = Free areas.

M = Mild.

A = Affected areas.

F = Free areas.

M = Mild.

| <i>Indigenous birds.</i>            |                                   |     |             |      |            |      |  |
|-------------------------------------|-----------------------------------|-----|-------------|------|------------|------|--|
| Serial number and name of district. | Total number of birds vaccinated. |     | Drowsiness. |      | Diarrhoea. |      |  |
|                                     | Per cent.                         |     | Per cent.   |      | Per cent.  |      |  |
|                                     | F                                 | A   | F           | A    | F          | A    |  |
| (1)                                 | (2)                               | (3) | (4)         | (5)  | (6)        | (7)  |  |
| 1 Visakhapatnam .. .. .             | 3,046                             | ..  | 0.3         | ..   | 0.3        | ..   |  |
| 2 East Godavari .. .. .             | 2,227                             | ..  | 5.0         | ..   | 2.0        | ..   |  |
| 3 Krishna .. .. .                   | 2,450                             | ..  | 7.0         | 12.0 | 3.0        | 11.4 |  |
| 4 Guntur .. .. .                    | 7,186                             | ..  | 4.6         | ..   | 4.5        | ..   |  |
| 5 Nellore .. .. .                   | 2,964                             | ..  | 5.0         | ..   | 5.0        | ..   |  |
| 6 Cuddapah .. .. .                  | 2,505                             | ..  | 6.0         | ..   | 2.5        | ..   |  |
| 7 Kurnool .. .. .                   | 200                               | ..  | 1.0         | ..   | ..         | ..   |  |
| 8 North Arcot .. .. .               | 1,377                             | ..  | 23.0        | ..   | 1.0        | ..   |  |
| 9 Salem .. .. .                     | 1,905                             | ..  | 2.0         | ..   | 3.0        | ..   |  |
| 10 Coimbatore, West .. .. .         | 7,319                             | ..  | 1.6         | ..   | 0.5        | ..   |  |
| 11 Coimbatore, East (Erode) .. .. . | 8,535                             | ..  | 0.3         | ..   | ..         | ..   |  |
| 12 Tiruchirappalli .. .. .          | 811                               | ..  | 4.0         | ..   | ..         | ..   |  |
| 13 Tirunelveli .. .. .              | 169                               | ..  | 33.0        | ..   | 25.0       | ..   |  |
| 14 Malabar .. .. .                  | 375                               | ..  | ..          | ..   | ..         | ..   |  |
| 15 South Kanara .. .. .             | 1,925                             | ..  | 7.0         | ..   | 2.0        | ..   |  |
| 16 Ramanathapuram .. .. .           | ..                                | 145 | ..          | 6.8  | ..         | ..   |  |
| Total ..                            | 42,994                            | 798 | ..          | ..   | ..         | ..   |  |
| Average per cent ..                 | ..                                | ..  | 6.65        | 9.4  | 3.25       | 5.7  |  |

| Serial number and name of district. | Paralysis. |      | Egg stoppage. |      | Mortality. |      | Reaction Mild or severe. |
|-------------------------------------|------------|------|---------------|------|------------|------|--------------------------|
|                                     | Per cent.  |      | Per cent.     |      | Per cent.  |      |                          |
|                                     | F          | A    | F             | A    | F          | A    |                          |
|                                     | (8)        | (9)  | (10)          | (11) | (12)       | (13) | (14)                     |
| 1 Visakhapatnam .. .. .             | ..         | ..   | 0.5           | ..   | ..         | ..   | M                        |
| 2 East Godavari .. .. .             | ..         | ..   | ..            | ..   | ..         | ..   | M                        |
| 3 Krishna .. .. .                   | 1.5        | ..   | 3.0           | 4.0  | 0.4        | 10.2 | M                        |
| 4 Guntur .. .. .                    | 2.7        | ..   | 1.9           | ..   | ..         | ..   | M                        |
| 5 Nellore .. .. .                   | ..         | ..   | 1.0           | ..   | ..         | ..   | M                        |
| 6 Cuddapah .. .. .                  | ..         | ..   | 5.0           | ..   | ..         | ..   | M                        |
| 7 Kurnool .. .. .                   | ..         | ..   | ..            | ..   | ..         | ..   | ..                       |
| 8 North Arcot .. .. .               | ..         | ..   | ..            | ..   | 1.0        | ..   | M                        |
| 9 Salem .. .. .                     | ..         | ..   | 1.5           | ..   | ..         | ..   | M                        |
| 10 Coimbatore, West .. .. .         | ..         | ..   | 0.7           | ..   | ..         | ..   | M                        |
| 11 Coimbatore, East .. .. .         | ..         | ..   | 0.1           | ..   | ..         | ..   | M                        |
| 12 Tiruchirappalli .. .. .          | 1.0        | ..   | ..            | ..   | ..         | ..   | M                        |
| 13 Tirunelveli .. .. .              | 33.0       | ..   | 15.0          | ..   | 33.0       | ..   | S                        |
| 14 Malabar .. .. .                  | ..         | ..   | ..            | ..   | ..         | ..   | ..                       |
| 15 South Kanara .. .. .             | ..         | ..   | 4.4           | ..   | ..         | ..   | M                        |
| 16 Ramanathapuram .. .. .           | ..         | 2.7  | ..            | 2.7  | ..         | 1.3  | M                        |
| Total ..                            | ..         | ..   | ..            | ..   | ..         | ..   | ..                       |
| Average per cent .. .. .            | 2.54       | 1.35 | 2.2           | 3.35 | 2.29       | 5.75 | M                        |

A = Affected.

F = Free.

M = Mild.

S = Severe.

A = Affected.

F = Free.

M = Mild.

S = Severe.

From the statements, the average percentage of reactions observed are as follows:—

*Exotic birds.*

|                                    | FREE AREA. | AFFECTED AREA. |
|------------------------------------|------------|----------------|
| Drowsiness .. .. .                 | 11.53      | 11.0           |
| Diarrhoea .. .. .                  | 5.98       | 9.0            |
| Paralysis .. .. .                  | 1.63       | 12.0           |
| Stoppage of egg production .. .. . | 3.84       | 2.6            |
| Mortality .. .. .                  | 0.37       | 1.3            |
| Reaction .. .. .                   | Mild.      | Mild.          |

*Indigenous birds.*

|                                    | FREE AREA. | AFFECTED AREA. |
|------------------------------------|------------|----------------|
| Drowsiness .. .. .                 | 6.65       | 9.4            |
| Diarrhoea .. .. .                  | 3.25       | 5.7            |
| Paralysis .. .. .                  | 2.54       | 1.35           |
| Stoppage of egg production .. .. . | 2.2        | 3.25           |
| Mortality .. .. .                  | 2.29       | 5.75           |
| Reaction .. .. .                   | Mild.      | Mild.          |

In addition, the Assistant Disease Investigation Officer (Poultry) has protected during the period 51 birds against Ranikhet disease with Mukteswar strain and 698 birds with Komorove strain of Ranikhet disease vaccine both in the actual outbreaks and in free areas; and the type of reactions were as follows:—

| Total number of vaccinations.   | Type of reactions observed.        |                     |                     |                     |
|---------------------------------|------------------------------------|---------------------|---------------------|---------------------|
|                                 | Drowsiness.                        | Diarrhoea.          | Paralysis.          | Mortality.          |
|                                 | (2)<br>PER<br>CENT.                | (3)<br>PER<br>CENT. | (4)<br>PER<br>CENT. | (5)<br>PER<br>CENT. |
| By Mukteswar strain, 51 .. .. . | 50                                 | ..                  | 25                  | ..                  |
| By Komorove strain, 698 .. .. . | No perceptible drowsiness noticed. |                     |                     |                     |

A milder form of Ranikhet disease was seen to prevail in chicks of 4 to 8 weeks old in livestock Research Station, Hosur, during the period. The survivors manifested Forti Collis in which the head of the affected chicks was drawn to one side tilted or held down with the beak pointing upwards.

The symptoms were more pointing towards Ranikhet disease. Haemagglutination inhibition tests were conducted to ascertain if the serum of the affected birds contained anti-body contents against Ranikhet virus. It was surprising to study that the serum of the affected birds gave positive inhibition titre to Ranikhet disease. Later, two of the above mentioned birds were challenged with virulent Ranikhet disease virus keeping suitable controls. The controls died on the 4th day manifesting typical post-mortem lesions of Ranikhet disease while the recovered birds were seen unaffected. Later when all the available healthy chicks in the farm were vaccinated as a control measure against Ranikhet disease, no fresh cases manifesting the above mentioned symptoms were noticed, evidently confirming the outbreak as Ranikhet disease.

(ii) *Fowl pox*.—The incidence of this disease was noticed in the poultry unit attached to the Veterinary Hospital, Chittoor. The chicks that were apparently healthy were protected with the freeze dried chick embryo fowl pox vaccine and were retained away from the affected chicks.

The above chicks were inspected 11 days later and it was observed that only 30 per cent manifested very slight cutaneous lesions. They were otherwise quite healthy and brisk. The rest manifested satisfactory health and no chick developed pox in a generalized form.

Again in Livestock Research Station, Hosur Cattle Farm, while pox was prevailing in adult birds, 129 incontact birds were protected with freeze dried chick embryo fowl pox vaccine. The vaccinated birds showed satisfactory takes at the seat of vaccination and no bird showed any generalized form of fowl pox.

In free area, 1,055 birds were protected against fowl pox with the freeze dried chick embryo fowl pox vaccine from two weeks onwards. With the exception of about 5 per cent of the vaccinated birds that showed stray lesions on their beaks consequent on rubbing their beaks at the seat of vaccination, the rest of the birds were healthy and never exhibited any generalized form of fowl pox. Even the above said affected chicks were otherwise healthy and brisk and freely moved about and no mortality has been recorded.

During the period under report, 1,204 (727 plus 477) birds were protected against fowl pox both in the affected and free areas.

It is proposed to challenge the above vaccinated birds at varying intervals of 6 months, 1 year, 1½ years and 2 years with fowl pox scab virus keeping suitable controls.

(iii) *Contagious Coryza*.—This incidence of the disease was found in the poultry attached to the Dairy-cum-Bull Farm, Visakhapatnam.

The affected birds had lowered vitality and egg-production was either partially or completely affected. In rare cases, the eyes also were seen affected in adult birds.

(iv) *Control measures taken*.—The affected birds were culled out for table and 265 incontact birds were treated with penicillin and sulphamezathine with beneficial result.

An adjuvant vaccine prepared with the organism Corynic Bacterium in type isolated from the lesions of the affected birds which is expected to give a longer duration of immunity is under trial and may soon replace the use of costly drugs like penicillin and sulphamezathine.

(v) *Coccidiosis*.—The incidence of the disease was found in chicks of 2 to 4 weeks old in the poultry unit attached to the Veterinary Hospital, Salem. The affected chicks remained drowsy, shivering with ruffled feathers. Their faecal samples showed numerous oocysts of *Coccidia* belonging to the species *Eimeria tenella*. The infection was just in the initial stage and it was controlled through good hygienic measures adopted and through proper dosing with sulphamezathine the available chicks.

The following precautionary measures were advised:—

(1) To maintain the coccidial infection at a minimum level by daily cleaning and frequent removal of droppings containing the infectious material in order that the organisms which are being passed in the dropping may be prevented from developing into a stage which is infective.

(2) To put the feeding troughs and drinking vessels in boiling water at frequent intervals and to maintain as dry an environment as possible since the parasite is highly susceptible to desiccation. Later, it was observed that chicks placed under the above said conditions had little chance of picking up the infection and by ingestion of small number of oocysts the chicks developed resistance against coccidiosis.

(vi) *Avian Leucosis Complex*.—The incidence of this disease was noticed in the following poultry farms and units: The Dairy-cum-Bull Farm, Visakhapatnam, Livestock Research Station, Hosur, Poultry Units, Kancheepuram, Tanjore and Nagapattinam and poultry production centre, Saliangalam. The affected birds manifested either the neurotropic or the visceral form of the disease. Pullets generally at the prime of age died suddenly manifesting typical post-mortem lesions of enlarged liver, spleen and kidneys.

Hæmatological examination revealing the presence of immature lymphoid cells highly suggestive of Avian Leucosis Complex were conducted on 345 birds

during the period of which 92 birds proved suggestive of Avian leucosis complex. They besides remained poor in condition with pale comb and wattles light in weight and completely off lay in layers.

The following control measures were suggested to the officers in charge of the poultry farms and units :—

(1) To keep on steady culling of birds exhibiting visible symptoms of the disease.

(2) To build up resistant strains or families through genetical approach, viz., to breed through the healthy survivors of the old stock of over two years old that have been surviving in outbreaks of fowl paralysis so that a fresh stock resistant to the disease may be obtained.

(vii) *Parasitic infestations—Internal parasites.*—The officers in charge of the poultry farms and units were advised to adhere strictly to the following hygienic measures to keep the infestation of the internal parasites at a minimum. To burn the whole pen-yard or run with the dried leaves or straw once a fortnight. The idea being to destroy the ova of round worms and the intermediary hosts of tape worms so that the life cycle of both the worms may be broken and the worm burden in birds may be kept at a low level.

Towards the effective control of external parasites the use of sodium flouride or gamma-xane once a fortnight has been found to be quite satisfactory.

(viii) *Salmonella pullorum and gallinerum infection in poultry.*—With a view to eliminate the infection of *Salmonella pullorum* and *gallinerum* in poultry 75 birds were tested by rapid whole blood strain antigen method. The results were negative in all cases.

The incidence of the following diseases, viz., fowl cholera, fowl typhoid, *Trichomonellosis*, *Agyptenella*, *pullorum* etc, have not been met with during the period under report.

98. *Specimens examined.*—One hundred and forty-eight specimens of blood smears, faeces, heart blood smears, internal organs, etc., received from the field staff were examined and reported upon.

Five hundred and fifty specimens of blood smears, faeces, parasites, etc., were collected and examined in the course of tours during the period.

Ninety-one specimens of internal organs were sent to the Principal, Madras Veterinary College, Madras, for histopathological examination of which 30 proved positive for Avian leucosis complex.

#### SCHEME FOR THE INVESTIGATION INTO THE DISEASES OF SHEEP AND GOATS.

99. The work done by the Assistant Disease Investigation Officer (Sheep and Goats) is as follows :—

(i) *Anthrax.*—This disease was reported from 55 centres in the 14 districts of Nellore, East Godavari, Bellary, Anantapur, Chittoor, Guntur, Cuddapah, Ramanathapuram, Madurai, Chingleput, Tiruchirappalli, Tanjore, South Arcot and Salem. Eleven of the affected centres were previously known as endemic areas and 44 were new ones. The majority of the affected places happened to be in the districts of Nellore and Ramanathapuram. The climate of the regions sporulation of *Bacillus Anthracis*. The outbreaks of the disease have been noticed to occur generally during the months of June to September. The course of the disease has been per acute in sheep and goats. The presence of a Sero-sanguinous discharge from the carcasses of sheep and goats has been reported in the majority of the instances. It has been seen that the outbreaks while occurring in sheep and goats, left cattle unaffected and vice-versa except in rare cases when the disease was met with in bovines as well as in ovines. Human local lesion in one centre in Melur taluk but no death among them was reported during the period.

The disease has been confirmed in eleven centres by microscopical or biological tests. Materials received from some of the outbreaks reported as Anthrax did not prove positive for Anthrax. But the symptoms narrated were sometimes akin to those of Anthrax.

(ii) *Preventive measures.*—(1) Anti-Anthrax serum of both the Veterinary Biological and Research Institute and Indian Veterinary Research Institute and Mukteswar's were used on 1,352 sheep and goats during the period. In some places mortality occurred among the serumised animals also.

(2) *Experimental Vaccination with the Anthrax Spore Vaccine.*—Eight thousand one hundred and six sheep and goats were vaccinated with the Anthrax Spore Vaccine obtained from the Indian Veterinary Research Institute. The spore vaccine caused a slight to severe and extensive inflammatory oedema in a small proportion of vaccinated animals, but only a few of such reactors died. The vaccine has been used raw and also after dilution with sterile saline in different places. The epidemiology of the disease in general indicated that it has a tendency to occur during the months of June to September, and occur in a sporadic way. Periodical vaccinations at intervals of 3 to 6 months over a period of years will have to be continued for control and eradication of the disease. People have also to be educated and made to realize that carcasses of animals and particularly of those dying of communicable diseases should not be cut open, but should be properly disposed of by burial or burning.

(iii) *Sheep-pox.*—The disease has been noticed in the districts of Coimbatore, Chingleput, Tiruchirappalli, South Arcot, Madurai, Nellore and Bellary.

In natural outbreaks it has been observed among sheep only. The incontact goats have remained free and unaffected. The symptoms showed by the ailing animals were elevation of temperature and erythematous spots in the different parts of the skin. Papules developed from the erythematous stage. Frank vesicular and Pustular stages have not been seen except for a little amount of tissue moisture one could notice on peeling off the skins over the plaques. This is the type of the disease that is prevalent in all the outbreaks suspected for sheep-pox in our State. It is the form that was produced in experimental sheep here by the infective materials suspected for sheep-pox obtained from the neighbouring states of Mysore and also from Bombay previously. The Indian Veterinary Research Institute, Mukteswar has declared a few specimens sent from some of the recent outbreaks suspected for pox as positive for sheep-pox and the strain was said to be simulating the strain of sheep-pox got from Mysore by the Institute.

Hard nodules collected from an experimental sheep infected with the sheep-pox suspected material of Kurukuppi Farm sent to the Indian Veterinary Research Institute, Mukteswar, were stated to be positive for sheep dermatitis.

It must however be mentioned that the clinical entity of the diseases encountered at Kurukuppi Farm and in the several other districts were one and the same. The finding of the Indian Veterinary Research Institute, opens up the possibility of two different viruses revealing a similar type of clinical manifestation in the affected sheep.

But earlier investigations done here in the previous years revealed that materials suspected for sheep-pox from Mysore, Bombay and this State have immunologically and clinically to be of one type.

(iv) *Preventive vaccinations.*—Vaccine supplied by the Veterinary Biological and Research Institute has been used both by the Disease Investigation Officer and the field staff, on apparently healthy sheep in both the infected herds and unaffected flocks. Vaccination had been done by scarification in the ear in 1,076 sheep. The reaction set up by the vaccine has been uniform. In most cases no perceptible reaction was visible. The field-staff have sometimes reported erythema and swelling at the seat of vaccination. In odd flocks a number of the vaccinated ones suffered from a generalized form of the disease.

(v) *Ovination*.—With the emulsion of the materials from local cases ovination has been done in 180 sheep by the Disease Investigation Officer and the field staff and the results observed as revealed by the 'takes' have not been any better than by the previous procedure. The generalized form of the disease has occurred in some of the sheep protected by this method also.

(vi) *Intradermal inoculation*.—The emulsion of nodules from a natural case has been injected intradermally into the caudal fold. Twelve sheep were inoculated by such a method. Excepting in one case in which an indurated swelling resulted, no reaction was visible.

(vii) *Hungarian vaccine*.—A sample of sheep-pox vaccine from Hungary was tried on 14 sheep in an infected herd. It was said to be a killed vaccine and advised to be injected subcutaneously. The vaccine was reported to be an useful product in an infected herd in that after about three days of inoculation no fresh case would occur. The vaccine was tried on fourteen sheep and the result showed seven sheep suffering from generalized form of the disease up to seven days after the vaccination. Of these three died. The sample available was a small quantity and further quantities are indented for. On receipt of the sample, further trials would be done.

(viii) *Goat-pox*.—The disease was reported from the Kollegal taluk in Coimbatore district. The outbreak was an isolated one and did not spread further. It prevailed in March-April 1953. About 36 goats were reported to have got the attack and 16 died and the outbreak subsided. The temperature of the affected were in the range of 103.0 to 106.0 while the healthy incontacts had 102.0 to 103.0. The lesions were confined to the face, cheeks, ears, under the tail and sides.

The disease was confined to goats only and the incontact sheep, cattle and buffaloes were free of infection. The nodules received from the affected cases were put to experimental goats. One of them developed two or three tiny nodules and the other did not react. Further passage from these animals did not prove successful. The disease will be investigated further in future outbreaks.

(ix) *Amphistomiasis due to immature amphistomes*.—The disease prevailed in the sheep at Palayakottai in March-April. The affected sheep had oedema of the sub-maxillary region, and diarrhoea. The course of the disease after the appearance of the symptoms was from one to three days.

Post-mortem conducted on a carcass revealed the characteristic diphtheritic inflammation of the deodanal portion. Immature amphistomes were found in plenty sticking to the mucus membranes. There were no adult amphistomes in the rumen. Hexachlorethane was advised to be given to the flock of sheep. The people were instructed not to graze the sheep and goats and cattle in the tank beds and the other areas subjected to water-logging, and snail infestation. The amphistomes collected from the outbreak were of the *Cotylophoron* species.

(x) *Rinderpest*.—Materials from an outbreak suspected for Rinderpest in sheep were collected in March 1953 and were supplied to the Superintendent, Veterinary Biological and Research Institute for conducting biological test. The experiments conducted by him were inconclusive. The available materials were passaged through non-immune and immune goats. The non-immune ones showed slight reaction and later withstood challenge by bull virus and thus gave an indication of the material being positive for Rinderpest.

(xi) *Enterotoxaemia*.—Outbreaks of an obscure disease among sheep were reported from the districts of Coimbatore, Madurai, South Arcot, North Arcot, Chingleput, Nellore, Anantapur and Bellary.

The disease was characterised by sudden onset, indifference to grazing, swaying movement of the head from side to side, falling on ground, convulsions, coma and death. Occasionally the ailing sheep were reported to have

shown semi-circular movements. Haemoglobinuria has been met with in a few cases. The course of the disease was from a few minutes to a few hours. Rare cases have lived up to a day.

The lesions noticed were patchy congestion of the intestines and varying degrees of congestion of liver and spleen. From the sudden course of the disease and the nervous symptoms shown by the affected animals, the disease was suspected for enterotoxaemia.

Materials from the suspected carcasses were tested for Anthrax, *Pasteurella* and were found to be negative for those diseases. A few specimens were sent to the Indian Veterinary Research Institute, Mukteswar, with an express request for examination for *Listerella* also. The specimens did not prove positive for *Listerella* on cultural and bio-tests. Stomach contents from a number of carcasses were sent to the Chemical Examiner and the Principal, Madras Veterinary College, for detection of any poisonous content for elimination of plant poisoning and no poison could be detected in any of the specimens sent.

The filtrates of intestinal contents from a few cases proved lethal to rabbits on intravenous inoculation. One such material on inoculation into a healthy sheep in a village developed the symptoms of a natural case of the disease in 15 minutes of inoculation and died in less than an hour. Such materials became spontaneously non-toxic before long.

Materials such as intestinal contents were sent to the Indian Veterinary Research Institute, Mukteswar, and the King Institute from a number of outbreak centres. The preliminary examination conducted at the King Institute revealed presumptive evidence for *Cl. Welchii* and a few cultures tested for toxic factors revealed the presence of alpha toxin only. Further examination of the materials is to be continued. The Indian Veterinary Research Institute, Mukteswar has also stated that *Cl. Welchii* type 'A' and type 'D' have been isolated from some of the specimens.

Preventive vaccination with the anaculture of *Clostridium Welchii* type 'B' and 'D' were used in the outbreak centres. Six thousand one hundred and eighteen sheep have been vaccinated during the period under report with the *Cl. Welchii* anaculture. Preventive vaccination will have to be done in all the endemic centres in advance of the season in the future.

## XI. RURAL WELFARE.

100. The centres and firkas for intensive Rural Reconstructions work continued to receive special attention. Fifty-three Veterinary Assistant Surgeons, 40 Veterinary and Livestock Inspectors, and 18 Stockmen Compounders rendered the necessary veterinary aid and livestock improvement work in the selected the necessary veterinary aid and livestock improvement work in the selected firkas and centres as against 48 Veterinary Assistant Surgeons, 34 Veterinary and Livestock Inspectors and 23 Stockmen Compounders in the previous year. The number of bulls stationed in the areas for stud were 279 as against 292 at the end of 1952-53 and they have performed 7,028 services as against 15,979 services in the previous year. Nine thousand two hundred and fifty-two scrub bulls were castrated as against 16,662 in the previous year. Immunizing the cattle against contagious diseases was undertaken intensively and 88,141 inoculations were conducted and 9,176 birds were also protected during the period. Thirty-one thousand five hundred and ninety-four cases were treated for various diseases. Two thousand six hundred and four calves were born to the bulls stationed and 1,375 calves were inspected. Cockerels of exotic breeds were continued to be supplied in the areas to grade up the country stock. Poultry Production Centres at Kinnigoli in South Kanara district, T. Kallupatti in Madurai district, Gopannapalem in West Godavari district, Saliamangalam in Tanjore district, Malli in Ramanathapuram district and Alur in Bellary district continued to function. Eggs produced at these centres were sold to the public.

The Veterinary Assistant Surgeons in charge of the six sheep rearing and demonstration units continued to tour the rural development areas in their jurisdiction. They inspected the local flocks and distributed rams and advised the owners with regard to the scientific breeding and management of sheep and goats, improved methods of washing, shearing and grading of wool according to quality and colour. Deworming and deticking demonstrations were conducted.

*Village Livestock Improvement Scheme at Saliyamangalam in Tanjore district.*—Three bulls of the Umblachery breed were stationed and they served 141 cows. Thirteen cows were registered. The Madras Livestock Improvement Act was in force and 36 mature scrub bulls were castrated. Thirty-nine calves were born and 14 were inspected. The Livestock Improvement Act was in force in four villages, viz., Palliyur, Tirubuvanam, Poondy and Saliyamangalam for the proper working of this scheme.

*Alur at Bellary district.*—Eight Hallikar bulls and 4 Murrah Buffalo bulls were stationed in the area and they have performed 386 services during the period. All the 98 calves born were inspected. Forty-two scrub bulls were castrated. Four hundred cases were treated and 192 inoculations were conducted. One meeting was attended and five cattle shows were conducted.

*Mulli at Ramanathapuram district.*—Two Kangayam and two Murrah buffalo bulls were stationed during the period and they performed 39 services. Thirty cows and 9 buffaloes were registered and 29 scrub bulls were castrated. The provisions of the Madras Livestock Improvement Act were in force in the area.

*Visakhapatnam.*—There were 6 bulls and they have performed 142 services. All the 46 calves born were inspected. Two thousand four hundred and thirty-nine cases were treated, 863 castrations were done, and 10,919 inoculations were conducted. Six meetings were held and attended.

*East Godavari.*—Six bulls at stud continued throughout the period. Seven hundred and ninety-five cases were treated and 147 castrations were performed. There were six Veterinary First Aid Centres in the areas during the period.

*West Godavari.*—The total number of cases treated in the area was 1,609, castrations performed was 364 and the number of inoculations done was 21,394.

*Krishna.*—There were 24 breeding bulls. Two thousand six hundred and fifty-six cases were treated, 286 castrations were performed and 2,154 birds were protected against Ranikhet disease.

*Guntur.*—The number of breeding bulls at the end of the period was 4 and they performed 320 services. All the 93 calves born were inspected. One thousand three hundred and four cases were treated, 311 castrations were performed and 7,469 inoculations were done. One "One Day Cattle Show" was conducted in the area during the period.

*Anantapur.*—There were 19 Hallikar breeding bulls in the area and they performed 459 services and 197 calves were born. One thousand two hundred and seventeen cases were treated and 641 castrations were done.

*Cuddapah.*—There were 2 breeding bulls and they have performed 45 services. Ten calves were born and of them 7 were inspected. One hundred and twenty-seven cases were treated, 14 castrations were done and 1,973 inoculations were conducted. Two meetings were attended.

*Kurnool.*—The total number of bulls was 10 during the period and they performed 559 services and 139 calves were born. Thirty-six scrub bulls were castrated. Three hundred and twenty-five cases were treated. Two thousand seven hundred and thirty inoculations were done. Four hundred and sixty-one birds were protected against Ranikhet disease.

*Nellore.*—The number of bulls was 14 and they performed 241 services. One hundred and eighty-six calves born, were inspected. One thousand twenty-eight

cases were treated and 13,935 inoculations were done. Eleven meetings were attended.

*Chittoor.*—Five bulls were at stud at the end of the period and they performed 80 services. The number of calves born and inspected were 30 and 23, respectively. One thousand four hundred and sixty-two cases were treated, 525 castrations were done and 6,342 inoculations were conducted. A "One Day Cattle Show" was held during the period.

*Madurai.*—There were 8 bulls at stud during the end of the period and they performed 187 services of which 80 calves were born. Two thousand one hundred and five cases were treated, 1,110 castrations were done and 892 Ranikhet disease vaccinations were conducted during the period.

*Ramanathapuram.*—The number of breeding bulls was 9 during the period and they performed 237 services. All the 37 calves born were inspected. One thousand fifty-six cases were treated, 316 castrations were done, 2,492 inoculations were done and 1,901 birds were protected against Ranikhet disease and Fowl-pox.

*Tirunelveli.*—There were 13 bulls and they performed 264 services. Sixty-one calves were born and all of them were inspected. Six hundred and seventy-one cases were treated, 671 castrations were performed and 1,035 inoculations were conducted.

*Salem.*—There was one Kangayam bull at stud during the period and it performed 16 services. Five hundred and three cases were treated; 175 castrations were done; 1,041 inoculations were conducted and 1,012 birds were protected.

*Coimbatore.*—There were 30 bulls in the area and they performed 588 services. One hundred and twenty-two calves were born. Three thousand six hundred and seventeen cases were treated and 479 castrations were done.

*Erode.*—There were 58 bulls at stud and they performed 2,255 services. The number of calves born was 998 and the number inspected was 611. One thousand four hundred and sixty-six cases were treated, 477 castrations were done, 4,021 inoculations were conducted and 2,475 birds were protected against Ranikhet disease.

*Chingleput.*—There were 2 bulls at stud, and they performed 35 services. Seventeen calves were born and 13 of them were inspected. Two thousand three hundred and seventy-one cases were treated, 560 castrations were performed and 2,522 inoculations were conducted. Six meetings held during the period were attended.

*North Arcot.*—There were 5 bulls and they performed 115 services. Out of the 33 calves born, 16 were inspected. Three hundred and eighty-one cases were treated and 651 castrations were performed.

*South Arcot.*—Two Kangayam bulls and 3 Mandya rams were stationed in the area for stud purposes. Nineteen services were performed, 27 calves were born and 22 calves were inspected. Nine hundred and seventy-eight cases were treated, 381 castrations were done and 3,919 inoculations were conducted.

*Tanjore.*—There were 12 Umblachery and one Scindhi breeding bull in the area. They have performed 398 services. One hundred and forty-eight calves were born. One thousand one hundred and ninety-eight cases were treated, 352 castrations were done and 2,043 inoculations were conducted. Three meetings were attended.

*Tiruchirappalli.*—There were 14 bulls and they performed 416 services. Out of 211 calves born, 118 calves were inspected. One thousand eight hundred and seven cases were treated, 405 castrations were performed and 604 inoculations were conducted. Four meetings were attended.

*South Kanara.*—There were 13 bulls for stud purposes and they performed 266 services. Seventy-one calves were born and 41 calves were inspected. Nine hundred and forty cases were treated; 773 castrations were performed, 677

inoculations were done and 213 birds were protected. There were 3 bucks in the area and the number of kids born was 52 of which 41 were inspected.

*Malabar.*—The total number of bulls in the area at the end of the period was 9. Out of 137 calves born, 79 calves were inspected. Two hundred and seventy-two cases were treated and 68 birds were protected.

## XII. VETERINARY PUBLIC HEALTH.

101. (a) *Milk inspection.*—The milk of milch stock belonging to the 63 Milk Supply Unions and Co-operative Milk Supply Societies were inspected by the departmental staff and advice was given to keep the stalls, the animals and the milking utensils clean.

(b) *Meat inspection.*—(i) Eight municipalities engaged their own Veterinary Assistant Surgeons for inspection of meat in their respective municipal slaughter houses.

(ii) Sixty-one municipalities and 61 panchayat boards in the State utilized the part-time services of the Veterinary Assistant Surgeons of this department who were stationed in the respective localities concerned for inspection of meat. They examined 29,606 cattle, 390,949 sheep, 251,488 goats and 2,757 pigs anti-mortem and condemned 1,936 cattle, 12,537 sheep, 10,024 goats and 8 pigs. In the course of meat inspection they confiscated and condemned 21,447 carcasses in part or whole for unsightly condition and other diseased conditions rendering the flesh unfit for human consumption.

(c) *Lethal chambers.*—The departmental staff, as usual, inspected the lethal chambers maintained by the local bodies for the destruction of dogs and reported on them with suggestions. The destruction of stray dogs is taken up by local bodies, as a measure in controlling the incidence of rabies in the area. Suggestions and advice to further the efficiency of this work in controlling rabies and preventing risk to human life were given.

## XIII. MISCELLANEOUS.

102. *Criminal poisoning.*—The Chemical Examiner to Government examined 280 materials connected with the cattle poisoning. The number of cases detected is as shown below :—

| Nature of material examined.       | Number of cases detected. | Kind of poison.  |
|------------------------------------|---------------------------|------------------|
| Viscera and contents .. ..         | 46                        | Arsenic.         |
| Do. .. ..                          | 1                         | Nitrate.         |
| Do. .. ..                          | 1                         | Nux-vomica.      |
| Excreta with-viscera .. ..         | 11                        | Arsenic.         |
| Do. .. ..                          | 1                         | Nitrate.         |
| Miscellaneous articles .. ..       | 2                         | Oleander.        |
| Do. .. ..                          | 1                         | Nitrate.         |
| Do. .. ..                          | 2                         | Arsenic.         |
| Miscellaneous articles alone .. .. | 10                        | Do.              |
| Do. .. ..                          | 1                         | Yellow Oleander. |
| Do. .. ..                          | 5                         | Oleander.        |
| Do. .. ..                          | 2                         | Zinc phosphide.  |

Malicious arsenic poisoning of cattle for their hides was continued to be detected by the Department in Madurai and other districts, and all preventive measures including reports to Police were made to put down the practice.

The departmental staff examined and certified 96 cases of malicious injury and issued 323 post-mortem certificates.

103. *The Prevention of Cruelty to Animals Act.*—The total number of convictions under the Act during the period was 7,442 as against 15,602 in the previous year.

104. *Forest department livestock.*—There was no contagious disease among the livestock of the Forest department during the period under report. All the elephants were protected against anthrax as usual. Two hundred and eighty-six non-contagious cases were treated as against 488 of the previous year. Thirty-eight elephants were sold during the period for a total sum of Rs. 1,41,651 as against Rs. 1,05,102 realized by sale of 28 elephants during 1952-53 by the Forest department.

A statement of livestock maintained by the Forest department is furnished below :—

| Animals.     | Number remaining on 1st April 1953. | Additions. |         |            |            |        | Reduction. |            |       |              |        | Number remaining on 30th September 1953. |
|--------------|-------------------------------------|------------|---------|------------|------------|--------|------------|------------|-------|--------------|--------|------------------------------------------|
|              |                                     | Captures.  | Births. | Transfers. | Purchases. | Total. | Sold.      | Destroyed. | Lost. | Transferred. | Total. |                                          |
| Elephants .. | 174                                 | 5          | 3       | 3          | ..         | 11     | 38         | ..         | 4     | 11           | 53     | 132                                      |
| Buffaloes .. | 4                                   | ..         | ..      | ..         | ..         | ..     | ..         | ..         | ..    | ..           | ..     | 4                                        |
| Bullocks ..  | 2                                   | ..         | ..      | ..         | ..         | ..     | ..         | ..         | ..    | ..           | ..     | 2                                        |
| Total ..     | 180                                 | 5          | 3       | 3          | ..         | 11     | 38         | ..         | 4     | 11           | 53     | 138                                      |

105. *Propaganda.*—(i) The following radio talks were broadcasted by the department :—

(1) Planning for plenty—Animal Nutrition—Research—Factors to increase food efficiency—Vitamin B-12—Animal protein factors and Anti-biotics.

(2) Protozoan diseases of livestock and their bearing on the economics of the country.

(3) The common non-contagious diseases of livestock.

(4) Importance of feeding heifer calves from birth so as to bring them to early maturity and greater milk yield.

(ii) The departmental staff carried out the usual propaganda on various departmental activities with the aid of leaflets, pamphlets, posters, magic lantern slides and films.

The propaganda unit of this department participated in three major exhibitions in this State during the period under report. In addition posters and charts, etc., were sent to exhibitions of Tanjore, Salem, Chingleput and Mannargudi in Tanjore district.

A certificate of gold medal was awarded to the department for putting up a grand show in the Masi Makham Exhibition at Kumbakonam.

During the period under report the following charts, maps and graphs were prepared by the unit :—

(1) Poster on Artificial Insemination (Tamil).

(2) The Key Village Centre, Kangayam.

(3) Graph (Poultry Farm, Hosur).

(4) Key Village Map—Anamalai Hills.

(5) Key Village Map—Bapatla.

(6) Graph (Poultry, Visakhapatnam).

(7) Graph (Poultry Farm, Guntur).

(8) "Soil and grazing condition in the State".

(9) Graph (Poultry Farm, Cuddapah).

(10) Requirements of available concentrates, dry fodder and green grasses.

(11) Livestock Census.

- (12) Graph showing "The incidence of Anthrax—1930 to 1952".
- (13) Advantages of Artificial Insemination.
- (14) Key Village Centre, Kilacheri.
- (15) Map—Saliyamangalam firka (Tanjore district).
- (16) Reproduction cycle in domestic animals.
- (17) Graphs—Black-quarter—1930 to 1952.
- (18) Key Village Map—Neikarapatty.
- (19) Five charts—Salvage of dry cows scheme.
- (20) Dissemination of Rinderpest in Madras City.

*Photographs.*—Photographs of the activities of the various farms in the State were taken and supplied to the respective institutions. Photographs taken by this section were published in "Madras Information".

106. *Glanders inspection.*—The Veterinary Assistant Surgeon-in-charge, Glanders Inspection, Madras City, inspected 452 equines and 8,513 bovines during the period under report and found most of them healthy. He conducted routine inspections of the cattle yards of the State hospitals in the City, jutka stands, milking yards and cattle sheds. Three horses were landed in Madras during the period and two horses were malleined. Mallein tests were also performed on the horses belonging to the King Institute, Guindy.

#### XIV. POST-WAR DEVELOPMENT SCHEMES.

107. All the schemes under this head continued to function during the period. Sanction was not accorded for the opening of new Veterinary Institutions and appointment of Veterinary and Livestock Inspectors during the period. But the opening of two new Touring Billets at Chintapalle and Rampachodavaram in Agency areas was sanctioned by the Government during the period under report.

#### XV. ANIMAL HUSBANDRY STATISTICAL WORK.

108. The following important statistical analysis on animal breeding and nutrition were taken up during the period:—

- (1) Preliminary analysis of the fish meal experiment conducted at the Livestock Research Station, Hosur.
- (2) Study of the coefficient of in-breeding of the animals declared sterile.
- (3) Evaluation of sire indices of all the available bulls of Scindhi herd at Livestock Research Station, Hosur.
- (4) Progeny testing of the bulls used recently for stud purposes at Livestock Research Station, Hosur.

#### XVI. FINANCE.

109. A statement showing the receipts and charges of the department for the period from 1st April to 30th September 1953 is appended (Table VIII):—

| CHARGES.                         |    |    |    |    |    | RS.       |
|----------------------------------|----|----|----|----|----|-----------|
| 1st April to 30th September 1953 | .. | .. | .. | .. | .. | 31,81,199 |
| 1952-53                          | .. | .. | .. | .. | .. | 60,62,705 |
| RECEIPTS.                        |    |    |    |    |    |           |
| 1st April to 30th September 1953 | .. | .. | .. | .. | .. | 4,41,773  |
| 1952-53                          | .. | .. | .. | .. | .. | 8,82,202  |

The expenditure incurred by the Public Works Department (original works and repairs) on the buildings of the Animal Husbandry Department during the period as reported by the Accountant General, Madras, was Rs. 1,01,939-1-8.

#### XVII. PROGRAMME OF WORK.

110. The programme of work implemented during the period is furnished below:—

(1) *Veterinary aid.*—Two posts of Veterinary Assistant Surgeons and six posts of Veterinary and Livestock Inspectors were sanctioned for employment for further development of the Agency areas in Visakhapatnam, East Godavari and West Godavari districts.

The programme of works proposed or expected to be undertaken during 1953-54 could not be implemented as they were not sanctioned by Government during the period.

(2) *Programme of work for 1954-55.*—The following items denote the broad outlines of the programme of work proposed or expected to be undertaken during 1954-55:—

(a) *Veterinary aid.*—(i) Scheme for the opening of regular institutions and scheme for the opening of Touring Billets (Minor Veterinary Dispensaries).

(ii) Employment of forty Veterinary and Livestock Inspectors.

(iii) Establishment of clinical laboratories at Headquarters Veterinary Institutions and Livestock farms.

(iv) Supply of refrigerators to Headquarters Veterinary Hospitals in the districts with a view to ensure the potency of biological products and other medicines.

(v) Establishment of Rinderpest Quarantine Station in the border of the State to prevent the ingress of the disease.

(b) *Education.*—(i) Implementations of the University Commission's recommendations in respect of staff equipment, etc., to the extent possible.

(ii) Stockmen Course: Introduction of Stockmen Course in the Madras Veterinary College, Madras, in the place of Veterinary Livestock Inspectors' Course.

(iii) Flaying Centres in moffusil: Opening of auxiliary Flaying centres in the moffusil stations.

(iv) Scheme for the introduction of a Post-graduate course in Parasitology in Madras Veterinary College and organization of Helminthic Research in the field.

(c) *Investigation and research.*—(i) Organization and establishment of a statistical section in the Animal Husbandry Department to deal with problems of animal breeding, nutrition and disease control in the Madras State.

(ii) Scheme for the extensive field trial of Brucella products in one centre.

(iii) Continuance of the technical programme of the Disease Investigation Officer.

(iv) Scheme for the control and eradication of contagious abortion in bovines.

#### XVIII. FIVE-YEAR PLAN.

The progress made on the Schemes included in the Five-Year Plan has been furnished in the part relating to the second period of the Administration Report for the year 1953-54.

TABLE I.—Statistics of mortality from contagious diseases and other causes among livestock in the Madras State during the period 1st April to 30th September 1953 (as furnished by the Collectors).

| Attacks *<br>Deaths<br>1952-53<br>1951-52 | Equines.         |               |                 |                 | Cattle.                                            |               |                      |                    |                                       |                         |                        | Buffaloes.       |                |                                                     |                |                       |                     |                                        |                         |                        |                  |
|-------------------------------------------|------------------|---------------|-----------------|-----------------|----------------------------------------------------|---------------|----------------------|--------------------|---------------------------------------|-------------------------|------------------------|------------------|----------------|-----------------------------------------------------|----------------|-----------------------|---------------------|----------------------------------------|-------------------------|------------------------|------------------|
|                                           | (1)<br>Glanders. | (2)<br>Surra. | (3)<br>Dourine. | (4)<br>Anthrax. | (5)<br>Other contagious and<br>parasitic diseases. | (6)<br>Total. | (7)<br>Other causes. | (8)<br>Rinderpest. | (9)<br>Haemorrhagic septi-<br>caemia. | (10)<br>Foot and Mouth. | (11)<br>Black Quarter. | (12)<br>Anthrax. | (13)<br>Surra. | (14)<br>Other contagious and<br>parasitic diseases. | (15)<br>Total. | (16)<br>Other causes. | (17)<br>Rinderpest. | (18)<br>Haemorrhagic septi-<br>caemia. | (19)<br>Foot and Mouth. | (20)<br>Black Quarter. | (21)<br>Anthrax. |
| ..                                        | ..               | ..            | ..              | ..              | ..                                                 | 2             | 4                    | 1,725              | 2,242                                 | 38                      | 1,591                  | 259              | 114            | 85                                                  | 6,054          | 571                   | 539                 | 576                                    | 1                       | 121                    | 40               |
| ..                                        | ..               | 2             | ..              | ..              | ..                                                 | 8             | 2                    | 1,458              | 2,228                                 | 73                      | 2,112                  | 756              | 64             | 163                                                 | 6,854          | 9,572                 | 1,095               | 2,073                                  | 2                       | 161                    | 132              |
| ..                                        | ..               | 7             | ..              | ..              | ..                                                 | 7             | ..                   | 5,148              | 4,295                                 | 142                     | 4,579                  | 983              | 39             | ..                                                  | 15,186         | ..                    | 812                 | 813                                    | 1                       | 106                    | 51               |

| Attacks *<br>Deaths<br>1952-53<br>1951-52 | Buffaloes—cont. |                                   |                |                       | Sheep.           |                    |                           |                         |                  | Goats.                            |                |                       |                  |                   |                           |                         |                  |                                                     |                |                       |
|-------------------------------------------|-----------------|-----------------------------------|----------------|-----------------------|------------------|--------------------|---------------------------|-------------------------|------------------|-----------------------------------|----------------|-----------------------|------------------|-------------------|---------------------------|-------------------------|------------------|-----------------------------------------------------|----------------|-----------------------|
|                                           | (22)<br>Surra.  | (23)<br>Other parasitic diseases. | (24)<br>Total. | (25)<br>Other causes. | (26)<br>Anthrax. | (27)<br>Sheep-pox. | (28)<br>Pleuro pneumonia. | (29)<br>Foot and Mouth. | (30)<br>Scabies. | (31)<br>Other parasitic diseases. | (32)<br>Total. | (33)<br>Other causes. | (34)<br>Anthrax. | (35)<br>Goat pox. | (36)<br>Pleuro pneumonia. | (37)<br>Foot and Mouth. | (38)<br>Scabies. | (39)<br>Other contagious and<br>parasitic diseases. | (40)<br>Total. | (41)<br>Other causes. |
| ..                                        | ..              | ..                                | ..             | ..                    | 1,099            | 575                | ..                        | 4                       | ..               | 380                               | 1,664          | 114                   | 40               | ..                | ..                        | ..                      | ..               | ..                                                  | 40             | 2                     |
| ..                                        | ..              | 29                                | 1,306          | 123                   | 1,048            | 232                | ..                        | 4                       | ..               | 1,043                             | 3,400          | 3,542                 | 426              | 10                | ..                        | ..                      | ..               | 10                                                  | 446            | 9                     |
| ..                                        | ..              | 33                                | 3,496          | 544                   | 1,220            | 1,137              | ..                        | ..                      | ..               | 96                                | 1,270          | ..                    | 74               | ..                | 6                         | ..                      | ..               | ..                                                  | 89             | ..                    |
| ..                                        | ..              | ..                                | 1,783          | ..                    | 706              | 463                | ..                        | ..                      | ..               | ..                                | ..             | ..                    | ..               | ..                | ..                        | ..                      | ..               | ..                                                  | ..             | ..                    |

| Attacks *<br>Deaths<br>1952-53<br>1951-52 | Dogs.  |                                          |        | Poultry.      |                   |           |                |              | Camels.                                  |        |               |        |        | All animals.      |                                          |        |               |                              |                       |                                                   |
|-------------------------------------------|--------|------------------------------------------|--------|---------------|-------------------|-----------|----------------|--------------|------------------------------------------|--------|---------------|--------|--------|-------------------|------------------------------------------|--------|---------------|------------------------------|-----------------------|---------------------------------------------------|
|                                           | (42)   | (43)                                     | (44)   | (45)          | (46)              | (47)      | (48)           | (49)         | (50)                                     | (51)   | (52)          | (53)   | (54)   | (55)              | (56)                                     | (57)   | (58)          | (59)                         | (60)                  | (61)                                              |
|                                           | Babes. | Other contagious and parasitic diseases. | Total. | Other causes. | Ranikhet disease. | Fowl-pox. | Spirchaetosis. | Coccidiosis. | Other contagious and parasitic diseases. | Total. | Other causes. | Surra. | Mange. | Pleuro pneumonia. | Other contagious and parasitic diseases. | Total. | Other causes. | Total (contagious diseases). | Total (other causes). | Grand total—contagious diseases and other causes. |
|                                           | ..     | ..                                       | ..     | ..            | ..                | ..        | ..             | ..           | ..                                       | ..     | ..            | ..     | ..     | ..                | ..                                       | ..     | ..            | ..                           | ..                    | ..                                                |
|                                           | 11     | ..                                       | 11     | 22            | ..                | ..        | ..             | ..           | ..                                       | ..     | ..            | ..     | ..     | ..                | ..                                       | ..     | ..            | 9,077                        | 836                   | 9,913                                             |
|                                           | 16     | ..                                       | 16     | 43            | ..                | ..        | ..             | ..           | ..                                       | ..     | ..            | ..     | ..     | ..                | ..                                       | ..     | ..            | 14,220                       | 13,713                | 27,933                                            |
|                                           | ..     | ..                                       | ..     | ..            | ..                | ..        | ..             | ..           | ..                                       | ..     | ..            | ..     | ..     | ..                | ..                                       | ..     | ..            | 18,374                       | ..                    | 18,374                                            |

NOTE.—\* Separate figures are not available for cattle and buffaloes under attacks. The following figures are furnished under bovines for attacks.

|                          |       |
|--------------------------|-------|
| Rinderpest               | 4,954 |
| Haemorrhagic septicaemia | 2,974 |
| Black quarter            | 1,811 |
| Anthrax                  | 461   |
| Foot and Mouth           | 3,136 |
| Surra                    | 366   |

TABLE II.—Summary of results of preventive inoculations in the

| Serial number and name of the disease against which inoculation was undertaken. | Method of inoculation.                                  | Source of product.                                             | Number of outbreaks in which inoculations were taken. | Number of villages affected in these outbreaks. | Population of the affected villages. |
|---------------------------------------------------------------------------------|---------------------------------------------------------|----------------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------|--------------------------------------|
| (1)                                                                             | (2)                                                     | (3)                                                            | (4)                                                   | (5)                                             | (6)                                  |
| 1 Rinderpest .. ..                                                              | Serum simultaneous with goat virus (in outbreak areas). | Veterinary Biological and Research Institute, Ranipet, Madras. | 293                                                   | 294                                             | 124,176                              |
|                                                                                 | Serum simultaneous with goat virus (in clean areas).    | Do.                                                            | ..                                                    | ..                                              | ..                                   |
|                                                                                 | Serum alone method (in actual outbreak areas).          | Do.                                                            | 1                                                     | 1                                               | 242                                  |
|                                                                                 | Freeze Dried Vaccine (in outbreak areas).               | Do.                                                            | 129                                                   | 297                                             | 71,559                               |
|                                                                                 | Freeze Dried Vaccine (in free areas).                   | Do.                                                            | ..                                                    | ..                                              | ..                                   |
|                                                                                 | Total ..                                                |                                                                | 423                                                   | 592                                             | 195,977                              |
| 2 Haemorrhagic Septicæmia.                                                      | Vaccine alone method (in affected areas.)               | Veterinary Biological and Research Institute, Ranipet, Madras. | 549                                                   | 549                                             | 436,864                              |
|                                                                                 | Vaccine alone method (in free areas).                   | Do.                                                            | ..                                                    | ..                                              | ..                                   |
|                                                                                 | Total ..                                                |                                                                | 549                                                   | 549                                             | 436,864                              |
| 3 Black Quarter .. ..                                                           | Vaccine alone method (in affected areas).               | Veterinary Biological and Research Institute, Ranipet, Madras. | 445                                                   | 448                                             | 230,368                              |
|                                                                                 | Vaccine alone method (in clean areas).                  | Do.                                                            | ..                                                    | ..                                              | ..                                   |
| 4 Anthrax .. ..                                                                 | Serum alone .. ..                                       | Do.                                                            | 9                                                     | 9                                               | 1,857                                |
|                                                                                 | Spore vaccine (Affected areas).                         | Do.                                                            | 88                                                    | 94                                              | 66,172                               |
|                                                                                 | Spore vaccine (Free areas).                             | Do.                                                            | ..                                                    | ..                                              | ..                                   |
| 5 Sheep-pox .. ..                                                               | Affected area ..                                        | Do.                                                            | 32                                                    | 26                                              | 24,557                               |
| 6 Fowl-pox .. ..                                                                | Affected area ..                                        | Do.                                                            | 5                                                     | 5                                               | 5,6753                               |
|                                                                                 | Free area .. ..                                         | Do.                                                            | ..                                                    | ..                                              | ..                                   |
| 7 Fowl-cholera .. ..                                                            | Affected area ..                                        | Do.                                                            | 2                                                     | 2                                               | 250                                  |
| 3 Ranikhet .. ..                                                                | Affected area ..                                        | Do.                                                            | 16                                                    | 16                                              | 19,634                               |
|                                                                                 | Free area .. ..                                         | Do.                                                            | ..                                                    | ..                                              | ..                                   |
|                                                                                 | Total (items 3 to 8) ..                                 |                                                                | 597                                                   | 600                                             | 348,513                              |
|                                                                                 | Grand total ..                                          |                                                                | 1,569                                                 | 1,741                                           | 9,81,354                             |
|                                                                                 | 1952-53 ..                                              |                                                                | 2,455                                                 | 2,506                                           | 1,783,319                            |
|                                                                                 | 1951-52 ..                                              |                                                                | 3,143                                                 | 3,173                                           | 1,193,129                            |

Madras State during the period from 1st April to 30th September 1953.

| Number of animals which died uninoculated in the course of outbreaks. |          |         | Number of animals inoculated. |          |         | Number of animals which died of the disease. |          |         |
|-----------------------------------------------------------------------|----------|---------|-------------------------------|----------|---------|----------------------------------------------|----------|---------|
| Bovines.                                                              | Equines. | Others. | Bovines.                      | Equines. | Others. | Bovines.                                     | Equines. | Others. |
| (7)                                                                   | (8)      | (9)     | (10)                          | (11)     | (12)    | (13)                                         | (14)     | (15)    |
| 1,538                                                                 | ..       | 60      | 109,875                       | ..       | ..      | ..                                           | ..       | ..      |
| ..                                                                    | ..       | ..      | 40,299<br>46,589              | ..       | ..      | ..                                           | ..       | ..      |
| 5                                                                     | ..       | ..      | 5                             | ..       | ..      | ..                                           | ..       | ..      |
| 916                                                                   | ..       | ..      | 52,817                        | ..       | ..      | 3                                            | ..       | ..      |
| ..                                                                    | ..       | ..      | 113,544                       | ..       | ..      | ..                                           | ..       | ..      |
| 2,459                                                                 | ..       | 60      | 365,129                       | ..       | ..      | 8                                            | ..       | ..      |
| 2,634                                                                 | ..       | ..      | 140,232                       | ..       | 4       | 9                                            | ..       | ..      |
| ..                                                                    | ..       | ..      | 6,648                         | ..       | ..      | ..                                           | ..       | ..      |
| 2,634                                                                 | ..       | ..      | 146,880                       | ..       | 4       | 9                                            | ..       | ..      |
| 1,702                                                                 | ..       | ..      | 112,883                       | ..       | 215     | ..                                           | ..       | ..      |
| ..                                                                    | ..       | ..      | 907                           | ..       | ..      | ..                                           | ..       | ..      |
| 58                                                                    | ..       | 7       | 785                           | ..       | 290     | ..                                           | ..       | ..      |
| 264                                                                   | ..       | 542     | 7,333                         | ..       | 8,598   | ..                                           | ..       | 2       |
| ..                                                                    | ..       | ..      | 1,594                         | ..       | ..      | ..                                           | ..       | ..      |
| 270                                                                   | ..       | ..      | 5,585                         | ..       | ..      | ..                                           | ..       | ..      |
| ..                                                                    | ..       | 3       | ..                            | ..       | 376     | ..                                           | ..       | ..      |
| ..                                                                    | ..       | ..      | ..                            | ..       | 944     | ..                                           | ..       | ..      |
| ..                                                                    | ..       | 52      | ..                            | ..       | 160     | ..                                           | ..       | ..      |
| ..                                                                    | ..       | 438     | ..                            | ..       | 10,768  | ..                                           | ..       | ..      |
| ..                                                                    | ..       | ..      | ..                            | ..       | 79,326  | ..                                           | ..       | ..      |
| 2,294                                                                 | ..       | 1,042   | 129,087                       | ..       | 100,677 | ..                                           | ..       | 2       |
| 7,387                                                                 | ..       | 1,102   | 641,096                       | ..       | 100,681 | 12                                           | ..       | 2       |
| 10,271                                                                | ..       | 1,537   | 1,090,897                     | ..       | 41,039  | 202                                          | ..       | 83      |
| 20,227                                                                | ..       | 742     | 1,051,255                     | ..       | 24,692  | 23                                           | ..       | ..      |

TABLE III.—Statement showing the number of animals treated and castrated at the Veterinary hospitals and dispensaries in the State of Madras during the period from 1st April to 30th September 1953.

| Year.                                       | Number of Veterinary Institutions. | Number of Veterinary Assistant Surgeons employed. | Number of in-patients treated. |          |         |        |
|---------------------------------------------|------------------------------------|---------------------------------------------------|--------------------------------|----------|---------|--------|
|                                             |                                    |                                                   | Bovines.                       | Equines. | Others. | Total. |
| 1953-54 (1st April to 30th September 1953). | 147                                | 155                                               | 5,223                          | 351      | 607     | 6,181  |
| 1952-53 .. .. .                             | 147                                | 152                                               | 12,092                         | 553      | 1,223   | 13,873 |
| 1951-52 .. .. .                             | 147                                | 149                                               | 10,559                         | 716      | 1,346   | 12,621 |

| Year.                                       | Number of out-patients treated. |          |         |         | Grand total of in and out-patients treated during the period. | Total number of cases supplied with medicines but not brought to the Institutions. | Castrations performed. |          |         |        |
|---------------------------------------------|---------------------------------|----------|---------|---------|---------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------|----------|---------|--------|
|                                             | Bovines.                        | Equines. | Others. | Total.  |                                                               |                                                                                    | Bovines.               | Equines. | Others. | Total. |
| 1953-54 (1st April to 30th September 1953). | 113,878                         | 6,606    | 45,558  | 166,042 | 172,223                                                       | 1,032                                                                              | 20,225                 | 242      | 7,868   | 28,335 |
| 1952-53 .. .. .                             | 237,646                         | 7,843    | 82,565  | 328,054 | 341,907                                                       | 2,316                                                                              | 46,375                 | 627      | 13,209  | 60,211 |
| 1951-52 .. .. .                             | 242,030                         | 10,195   | 74,324  | 326,549 | 338,970                                                       | 10,645                                                                             | 47,049                 | 96       | 22,279  | 69,424 |

NOTE.—The figures furnished in the table relate to the composite State only for six months and they cannot be compared with the figures of last year.

TABLE IV.—Statement showing the number of animals treated and castrated by Veterinary Assistant Surgeons on tour during the period from 1st April to 30th September 1953.

| Year.                                       | Number of Veterinary Assistant Surgeons. | Number of villages visited by the Veterinary Assistant Surgeons. | Castrations performed. |          |         |        | Total. |
|---------------------------------------------|------------------------------------------|------------------------------------------------------------------|------------------------|----------|---------|--------|--------|
|                                             |                                          |                                                                  | Bovines.               | Equines. | Others. |        |        |
| (1)                                         | (2)                                      | (3)                                                              | (4)                    | (5)      | (6)     | (7)    |        |
| 1953-54 (1st April to 30th September 1953). | 182                                      | 11,627                                                           | 33,430                 | 169      | 4,490   | 38,089 |        |
| 1952-53 .. ..                               | 179                                      | 22,657                                                           | 49,281                 | 19       | 5,859   | 55,159 |        |
| 1951-52 .. ..                               | 178                                      | 17,216                                                           | 40,348                 | 9        | 4,245   | 44,602 |        |

| Year.                                       | 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.  |                                                          |
| (8)                                         | (9)                              | (10)     | (11)    | (12)   | (13)                                 | (14)     | (15)    | (16)    |                                                          |
| 1953-54 (1st April to 30th September 1953). | 9,082                            | 458      | 1,353   | 10,893 | 100,436                              | 967      | 23,771  | 125,174 | 174,156                                                  |
| 1952-53 .. ..                               | 7,483                            | 17       | 1,966   | 9,466  | 143,111                              | 1,494    | 21,084  | 165,689 | 230,264                                                  |
| 1951-52 .. ..                               | 19,695                           | 50       | 451     | 20,196 | 100,837                              | 1,579    | 12,735  | 115,192 | 179,990                                                  |

NOTE.—Figures furnished in the table relate to the composite State only for the first six months.

TABLE V (a).—Statement showing the number of approved bulls at stud in the State of Madras during the period from 1st April to 30th September 1953.

| Serial number and district.       | Present on 1st April 1953. |               |         | Obtained during the year. |               |         | Average price. |               |         | Casualties, transfers, removals, etc., during the period. |               |         |
|-----------------------------------|----------------------------|---------------|---------|---------------------------|---------------|---------|----------------|---------------|---------|-----------------------------------------------------------|---------------|---------|
|                                   | Government.                | Local bodies. | Others. | Government.               | Local bodies. | Others. | Government.    | Local bodies. | Others. | Government.                                               | Local bodies. | Others. |
| (1)                               | (2)                        | (3)           | (4)     | (5)                       | (6)           | (7)     | (8)            | (9)           | (10)    | (11)                                                      | (12)          | (13)    |
| 1 Visakhapatnam ..                | 17                         | 12            | 5       | ..                        | ..            | 5       | 900            | 900           | 800     | 5                                                         | 4             | 8       |
| 2 East Godavari ..                | 17                         | ..            | 32      | ..                        | 1             | 1       | ..             | ..            | ..      | 11                                                        | ..            | 11      |
| 3 West Godavari ..                | 7                          | ..            | 9       | ..                        | ..            | 2       | ..             | ..            | ..      | 3                                                         | ..            | 10      |
| 4 Krishna ..                      | 16                         | ..            | 17      | 1                         | ..            | ..      | 1,000          | ..            | ..      | 20                                                        | ..            | ..      |
| 5 Guntur ..                       | 27                         | ..            | 4       | ..                        | ..            | 2       | ..             | ..            | 1,800   | 5                                                         | 6             | 15      |
| 6 Nellore ..                      | 13                         | 11            | 46      | ..                        | 1             | 2       | ..             | ..            | ..      | 12                                                        | ..            | 3       |
| 7 Cuddapah ..                     | 22                         | ..            | 14      | ..                        | ..            | 7       | ..             | ..            | 600     | 10                                                        | ..            | 10      |
| 8 Anantapur ..                    | 14                         | ..            | 32      | ..                        | ..            | ..      | 2,100          | ..            | ..      | 17                                                        | 3             | 5       |
| 9 Bellary ..                      | 19                         | 9             | 5       | 4                         | ..            | 1       | ..             | ..            | ..      | 1                                                         | ..            | 7       |
| 10 Kurnool ..                     | 9                          | ..            | 19      | ..                        | ..            | ..      | ..             | ..            | ..      | 1                                                         | ..            | 10      |
| 11 Madras ..                      | 14                         | ..            | 15      | 1                         | ..            | ..      | ..             | ..            | ..      | 2                                                         | ..            | 2       |
| 12 Chingleput ..                  | 8                          | 9             | 8       | ..                        | 1             | 15      | ..             | ..            | ..      | ..                                                        | ..            | 4       |
| 13 Chittoor ..                    | 15                         | 9             | 9       | 1                         | ..            | ..      | ..             | ..            | ..      | ..                                                        | ..            | 1       |
| 14 North Arcot ..                 | 9                          | 3             | 2       | ..                        | 2             | ..      | ..             | ..            | 1,500   | 8                                                         | 1             | 44      |
| 15 South Arcot ..                 | 7                          | ..            | 71      | ..                        | ..            | 25      | ..             | ..            | 400     | 4                                                         | 2             | 6       |
| 16 Tanjore ..                     | 19                         | 11            | 29      | 8                         | ..            | 6       | 800            | ..            | 600     | 1                                                         | 1             | 7       |
| 17 Tiruchirappalli ..             | 27                         | 7             | 49      | ..                        | ..            | 8       | ..             | ..            | ..      | 4                                                         | ..            | 4       |
| 18 Madurai ..                     | 9                          | 8             | 4       | 1                         | ..            | 2       | ..             | ..            | ..      | 11                                                        | ..            | 4       |
| 19 Ramanathapuram ..              | 18                         | 2             | 5       | 1                         | ..            | 8       | 1,500          | 1,150         | 1,250   | 11                                                        | 42            | 33      |
| 20 Tirunelveli ..                 | 32                         | ..            | 131     | 18                        | 52            | 55      | ..             | ..            | ..      | 3                                                         | ..            | 3       |
| 21 Coimbatore ..                  | 56                         | 172           | 27      | 4                         | ..            | 2       | ..             | ..            | 800     | 11                                                        | 1             | 2       |
| 22 Salem ..                       | 10                         | 1             | 15      | ..                        | ..            | 3       | ..             | ..            | ..      | 7                                                         | ..            | 1       |
| 23 South Kanara ..                | 49                         | 1             | 4       | ..                        | ..            | 3       | ..             | ..            | ..      | ..                                                        | ..            | ..      |
| 24 Malabar ..                     | 44                         | ..            | ..      | ..                        | ..            | ..      | ..             | ..            | ..      | ..                                                        | ..            | ..      |
| 1st April to 30th September 1953. | 478                        | 240           | 564     | 35                        | 57            | 153     | ..             | ..            | ..      | 146                                                       | 60            | 195     |
| 1952-53 .. .. .                   | 495                        | 234           | 604     | 94                        | 86            | 182     | ..             | ..            | ..      | 111                                                       | 80            | 222     |
| 1951-52 .. .. .                   | 329                        | 245           | 704     | 183                       | 51            | 123     | ..             | ..            | ..      | 27                                                        | 59            | 229     |

| Number of approved bulls at stud. | Balance on hand on 30th September 1953. |               |         |        | Net cost 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 period. |
|-----------------------------------|-----------------------------------------|---------------|---------|--------|---------------------------------------------------|----------------------------------------------------------|----------------------------|------------------------|-------------------------------------------|
|                                   | Government.                             | Local bodies. | Others. | Total. |                                                   |                                                          | Required to be maintained. | Short of requirements. |                                           |
| (14)                              | (15)                                    | (16)          | (17)    | (18)   | (19)                                              | (20)                                                     | (21)                       | (22)                   | (23)                                      |
|                                   |                                         |               |         |        | RS. A. P.                                         |                                                          |                            |                        |                                           |
| 1 Visakhapatnam ..                | 12                                      | 8             | 2       | 22     | 14,901 0 0                                        | 440,000                                                  | 4,400                      | 4,378                  | 428                                       |
| 2 East Godavari ..                | 6                                       | ..            | 26      | 32     | 13,530 14 9                                       | 200,453                                                  | 2,004                      | 1,969                  | 1,961                                     |
| 3 West Godavari ..                | 4                                       | 1             | 7       | 12     | 3,320 0 0                                         | 193,893                                                  | 1,938                      | 1,927                  | 3,756                                     |
| 4 Krishna ..                      | 17                                      | ..            | 4       | 21     | 4,003 12 6                                        | 177,213                                                  | 1,772                      | 1,746                  | 669                                       |
| 5 Guntur ..                       | 7                                       | 5             | 33      | 46     | 5,166 7 4                                         | 154,668                                                  | 1,546                      | 1,535                  | 87                                        |
| 6 Nellore ..                      | 8                                       | 1             | 13      | 24     | 3,083 16 8                                        | 281,861                                                  | 2,818                      | 2,773                  | 1,021                                     |
| 7 Cuddapah ..                     | 10                                      | 1             | 29      | 38     | 5,166 7 4                                         | 114,606                                                  | 1,146                      | 1,122                  | 839                                       |
| 8 Anantapur ..                    | ..                                      | ..            | ..      | 6      | 2,342 0 0                                         | 262,650                                                  | 2,626                      | 2,593                  | 867                                       |
| 9 Bellary ..                      | ..                                      | ..            | ..      | 21     | 1,421 6 0                                         | 132,426                                                  | 1,324                      | 1,318                  | 79                                        |
| 10 Kurnool ..                     | ..                                      | ..            | 13      | 21     | 2,316 12 10                                       | 132,388                                                  | 1,323                      | 1,295                  | 644                                       |
| 11 Madras ..                      | 8                                       | ..            | 5       | 19     | 2,898 0 0                                         | 6,667                                                    | 66                         | 47                     | 380                                       |
| 12 Chingleput ..                  | 14                                      | ..            | 6       | 20     | 2,901 5 3                                         | 213,279                                                  | 2,133                      | 2,121                  | 361                                       |
| 13 Chittoor ..                    | 6                                       | 10            | 23      | 49     | 1,718 9 6                                         | 293,493                                                  | 2,934                      | 2,911                  | 1,328                                     |
| 14 North Arcot ..                 | 16                                      | 7             | 7       | 30     | 2,875 10 5                                        | 311,474                                                  | 3,115                      | 3,098                  | 419                                       |
| 15 South Arcot ..                 | 10                                      | ..            | 2       | 14     | 1,695 14 5                                        | 342,904                                                  | 3,429                      | 3,415                  | 203                                       |
| 16 Tanjore ..                     | 7                                       | 5             | 2       | 14     | 3,748 0 0                                         | 320,000                                                  | 3,200                      | 3,127                  | 4,101                                     |
| 17 Tiruchirappalli ..             | 11                                      | 10            | 52      | 73     | 15,047 0 0                                        | 885,510                                                  | 8,855                      | 8,795                  | 1,693                                     |
| 18 Madurai ..                     | 26                                      | 5             | 29      | 60     | 3,104 11 9                                        | 273,584                                                  | 2,736                      | 2,671                  | 1,837                                     |
| 19 Ramanathapuram ..              | 8                                       | 7             | 50      | 65     | 1,200 8 0                                         | 224,156                                                  | 2,241                      | 2,222                  | 471                                       |
| 20 Tirunelveli ..                 | 15                                      | 2             | 2       | 19     | 1,868 11 1                                        | 148,794                                                  | 1,488                      | 1,457                  | 723                                       |
| 21 Coimbatore ..                  | 22                                      | ..            | 153     | 399    | 20,695 14 7                                       | 326,965                                                  | 3,269                      | 3,266                  | 15,965                                    |
| 22 Salem ..                       | 64                                      | 182           | 33      | 339    | 1,055 2 0                                         | 671,792                                                  | 6,718                      | 6,684                  | 1,022                                     |
| 23 South Kanara ..                | 11                                      | 1             | 26      | 38     | 400 0 0                                           | 309,532                                                  | 3,098                      | 3,043                  | 1,394                                     |
| 24 Malabar ..                     | 38                                      | ..            | 6       | 43     | 3,789 7 9                                         | 365,222                                                  | 3,652                      | 3,615                  | 1,413                                     |
| 1st April to 30th September 1953. | 367                                     | 227           | 522     | 1,126  | 1,13,596 14 10                                    | 6,233,774                                                | 62,831                     | 61,748                 | 41,952                                    |
| 1952-53 .. .. .                   | 478                                     | 240           | 564     | 1,282  | 3,12,098 0 0                                      | 6,550,682                                                | 65,507                     | 64,225                 | 75,205                                    |
| 1951-52 .. .. .                   | 495                                     | 234           | 604     | 1,333  | 3,73,084 0 0                                      | 5,518,751                                                | 55,599                     | 49,631                 | 60,976                                    |

TABLE V (b).—Statement showing the number of approved buffalo-bulls at stud in the State of Madras during the period from 1st April to 30th September 1953.

| Serial number and district.       | Present on 1st April 1953. |               |         | Obtained during the period. |               |         | Casualties transfers, removals, etc., during the period. |               |         |
|-----------------------------------|----------------------------|---------------|---------|-----------------------------|---------------|---------|----------------------------------------------------------|---------------|---------|
|                                   | Number.                    |               |         | Average price.              |               |         |                                                          |               |         |
|                                   | Government.                | Local bodies. | Others. | Government.                 | Local bodies. | Others. | Government.                                              | Local bodies. | Others. |
| (1)                               | (2)                        | (3)           | (4)     | (5)                         | (6)           | (7)     | (8)                                                      | (9)           | (10)    |
| 1 Visakhapatnam ..                | 4                          | ..            | 2       | ..                          | 1             | ..      | ..                                                       | ..            | ..      |
| 2 East Godavari ..                | 14                         | ..            | 49      | 1                           | 10            | 800     | ..                                                       | ..            | ..      |
| 3 West Godavari ..                | 6                          | ..            | 37      | 2                           | 5             | ..      | ..                                                       | ..            | ..      |
| 4 Krishna ..                      | 7                          | ..            | 32      | ..                          | 17            | ..      | ..                                                       | ..            | ..      |
| 5 Guntur ..                       | 17                         | ..            | 4       | ..                          | ..            | 1,000   | ..                                                       | ..            | ..      |
| 6 Nellore ..                      | 4                          | ..            | 6       | ..                          | ..            | ..      | ..                                                       | ..            | ..      |
| 7 Cuddapah ..                     | 8                          | ..            | ..      | ..                          | ..            | ..      | ..                                                       | ..            | ..      |
| 8 Anantapur ..                    | ..                         | ..            | 1       | ..                          | 1             | 600     | ..                                                       | ..            | ..      |
| 9 Bellary ..                      | 10                         | ..            | ..      | ..                          | ..            | ..      | ..                                                       | ..            | ..      |
| 10 Kurnool ..                     | 6                          | ..            | 3       | ..                          | ..            | ..      | ..                                                       | ..            | ..      |
| 11 Madras ..                      | 3                          | ..            | 2       | ..                          | ..            | ..      | ..                                                       | ..            | ..      |
| 12 Chingleput ..                  | 1                          | ..            | 2       | ..                          | ..            | ..      | ..                                                       | ..            | ..      |
| 13 Chittoor ..                    | 3                          | ..            | 1       | ..                          | ..            | ..      | ..                                                       | ..            | ..      |
| 14 North Arcot ..                 | 4                          | ..            | 1       | 1                           | ..            | ..      | ..                                                       | ..            | ..      |
| 15 South Arcot ..                 | 1                          | ..            | ..      | ..                          | 1             | ..      | ..                                                       | ..            | ..      |
| 16 Tanjore ..                     | ..                         | ..            | 4       | ..                          | 9             | 1,200   | ..                                                       | ..            | ..      |
| 17 Tiruchirappalli ..             | 8                          | ..            | 15      | ..                          | 2             | 400     | ..                                                       | ..            | ..      |
| 18 Madurai ..                     | 6                          | ..            | 7       | ..                          | ..            | ..      | ..                                                       | ..            | ..      |
| 19 Ramanathapuram ..              | 4                          | ..            | 3       | 2                           | ..            | ..      | ..                                                       | ..            | ..      |
| 20 Tirunelveli ..                 | 10                         | ..            | 7       | ..                          | 1             | ..      | ..                                                       | ..            | ..      |
| 21 Coimbatore ..                  | 9                          | ..            | 15      | ..                          | 2             | 1,600   | ..                                                       | 500           | 4       |
| 22 The Nilgiris ..                | 1                          | ..            | ..      | ..                          | 1             | ..      | ..                                                       | ..            | ..      |
| 23 Salem ..                       | 8                          | 1             | 2       | ..                          | 4             | ..      | ..                                                       | 400           | ..      |
| 24 South Kanara ..                | 7                          | ..            | ..      | ..                          | ..            | ..      | ..                                                       | ..            | ..      |
| 25 Malabar ..                     | ..                         | ..            | ..      | ..                          | ..            | ..      | ..                                                       | ..            | ..      |
| Total ..                          | 141                        | 1             | 195     | 4                           | 2             | 54      | ..                                                       | ..            | ..      |
| 1st April to 30th September 1953. | 137                        | ..            | 215     | 35                          | 1             | 67      | ..                                                       | ..            | ..      |
| 1952-53 ..                        | 86                         | 1             | 226     | 65                          | ..            | 45      | ..                                                       | ..            | ..      |
| 1951-52 ..                        | ..                         | ..            | ..      | ..                          | ..            | ..      | ..                                                       | ..            | ..      |

|                                        | Number of approved<br>bulls at stud.       |                  |         |        | Net cost for<br>issue and<br>maintenance<br>of stud bulls. | Population<br>of cows<br>over three<br>years<br>according<br>to<br>census. | Number of<br>bulls.           |                             | Number<br>of cows<br>covered<br>during the<br>period. |
|----------------------------------------|--------------------------------------------|------------------|---------|--------|------------------------------------------------------------|----------------------------------------------------------------------------|-------------------------------|-----------------------------|-------------------------------------------------------|
|                                        | Balance on hand on<br>30th September 1953. |                  |         |        |                                                            |                                                                            | Required to be<br>maintained. | Short of re-<br>quirements. |                                                       |
|                                        | Govern-<br>ment.                           | Local<br>bodies. | Others. | Total. |                                                            |                                                                            |                               |                             |                                                       |
|                                        |                                            |                  |         |        |                                                            |                                                                            |                               |                             |                                                       |
|                                        | (14)                                       | (15)             | (16)    | (17)   | (18)                                                       | (19)                                                                       | (20)                          | (21)                        | (22)                                                  |
|                                        |                                            |                  |         |        | RS. A. P.                                                  |                                                                            |                               |                             |                                                       |
| 1 Visakhapatnam ..                     | 2                                          | ..               | 3       | 5      | 3,000 0 0                                                  | 320,000                                                                    | 3,200                         | 3,195                       | 137                                                   |
| 2 East Godavari ..                     | 13                                         | ..               | 53      | 66     | 1,427 0 0                                                  | 214,247                                                                    | 2,142                         | 2,081                       | 2,791                                                 |
| 3 West Godavari ..                     | 3                                          | 2                | 30      | 35     | 3,320 0 0                                                  | 210,309                                                                    | 2,103                         | 1,961                       | 1,135                                                 |
| 4 Krishna ..                           | 5                                          | ..               | 48      | 53     | ..                                                         | 314,452                                                                    | 1,042                         | 989                         | 1,340                                                 |
| 5 Guntur ..                            | 6                                          | ..               | 1       | 7      | 854 8 0                                                    | 375,035                                                                    | 3,750                         | 3,743                       | 196                                                   |
| 6 Nellore ..                           | 2                                          | ..               | 5       | 7      | 1,073 7 4                                                  | 281,861                                                                    | 2,818                         | 2,810                       | 73                                                    |
| 7 Cuddapah ..                          | 8                                          | ..               | ..      | 8      | ..                                                         | 183,224                                                                    | 1,832                         | 1,824                       | 144                                                   |
| 8 Anantapur ..                         | ..                                         | ..               | 2       | 2      | 220 0 0                                                    | 162,583                                                                    | 1,626                         | 1,623                       | 42                                                    |
| 9 Bellary ..                           | 3                                          | ..               | ..      | 3      | ..                                                         | 96,205                                                                     | 962                           | 959                         | 93                                                    |
| 10 Kurnool ..                          | 2                                          | ..               | 3       | 5      | 2,316 0 0                                                  | 97,424                                                                     | 974                           | 968                         | 28                                                    |
| 11 Madras ..                           | 2                                          | ..               | 1       | 3      | ..                                                         | 7,506                                                                      | 75                            | 72                          | 106                                                   |
| 12 Chingleput ..                       | ..                                         | ..               | 1       | 1      | 163 0 0                                                    | 97,525                                                                     | 975                           | 974                         | 60                                                    |
| 13 Chittoor ..                         | 3                                          | ..               | 1       | 4      | ..                                                         | 98,283                                                                     | 982                           | 978                         | 39                                                    |
| 14 North Arcot ..                      | 5                                          | ..               | 1       | 6      | 2,699 11 8                                                 | 79,778                                                                     | 793                           | 793                         | 164                                                   |
| 15 South Arcot ..                      | 1                                          | ..               | 1       | 2      | ..                                                         | 64,984                                                                     | 649                           | 647                         | 34                                                    |
| 16 Tanjore ..                          | ..                                         | ..               | 10      | 10     | 220 0 0                                                    | 128,000                                                                    | 1,280                         | 1,267                       | 593                                                   |
| 17 Tiruchirappalli ..                  | 6                                          | ..               | 13      | 19     | 5,860 0 0                                                  | 185,025                                                                    | 1,850                         | 1,831                       | 506                                                   |
| 18 Madurai ..                          | 6                                          | ..               | 6       | 12     | 880 0 0                                                    | 84,893                                                                     | 850                           | 837                         | 458                                                   |
| 19 Ramanathapuram ..                   | 5                                          | ..               | ..      | 5      | 1,498 0 0                                                  | 76,419                                                                     | 764                           | 759                         | 103                                                   |
| 20 Tirunelveli ..                      | 8                                          | ..               | 5       | 13     | 1,720 0 0                                                  | 90,318                                                                     | 903                           | 890                         | 166                                                   |
| 21 Coimbatore ..                       | ..                                         | ..               | ..      | ..     | ..                                                         | 119,924                                                                    | 1,199                         | 1,182                       | 549                                                   |
| 22 The Nilgiris ..                     | 5                                          | ..               | 13      | 18     | ..                                                         | 116,267                                                                    | 1,163                         | 1,161                       | 70                                                    |
| 23 Salem ..                            | 1                                          | ..               | ..      | 1      | 440 0 0                                                    | 69,396                                                                     | 693                           | 682                         | 331                                                   |
| 24 South Kanara ..                     | 4                                          | ..               | 6       | 10     | 704 13 0                                                   | 64,952                                                                     | 649                           | 646                         | 173                                                   |
| 25 Malabar ..                          | 5                                          | ..               | 1       | 6      | ..                                                         | ..                                                                         | ..                            | ..                          | ..                                                    |
| Total ..                               | 95                                         | 2                | 204     | 301    | 26,396 8 0                                                 | 3,538,615                                                                  | 33,279                        | 32,870                      | 9,331                                                 |
| 1st April to 30th Sep-<br>tember 1953. | 95                                         | 2                | 204     | 301    | 26,396 8 0                                                 | 3,538,615                                                                  | 33,279                        | 32,870                      | 9,331                                                 |
| 1952-53 ..                             | 141                                        | 1                | 195     | 337    | ..                                                         | 3,618,638                                                                  | 36,186                        | 35,849                      | 24,537                                                |
| 1951-52 ..                             | 139                                        | ..               | 215     | 354    | ..                                                         | 2,835,722                                                                  | 29,499                        | 29,373                      | 21,158                                                |

TABLE V (c).—Statement showing the number of horses, donkeys and stallions at stud in the State of Madras during the period from 1st April to 30th September 1953.

| District.                            | Number as on<br>1st April<br>1953. |               |         | Obtained<br>during<br>the period<br>1st April<br>to 30th<br>September<br>1953. |               |         | Casualties. |               |         | Balance on<br>30th Septem-<br>ber 1953. |               |         | Number of<br>mares<br>covered. |          | Population<br>of<br>mares. |          |
|--------------------------------------|------------------------------------|---------------|---------|--------------------------------------------------------------------------------|---------------|---------|-------------|---------------|---------|-----------------------------------------|---------------|---------|--------------------------------|----------|----------------------------|----------|
|                                      |                                    |               |         |                                                                                |               |         |             |               |         |                                         |               |         |                                |          |                            |          |
|                                      | Government.                        | Local bodies. | Others. | Government.                                                                    | Local bodies. | Others. | Government. | Local bodies. | Others. | Government.                             | Local bodies. | Others. | Horses.                        | Donkeys. | Horses.                    | Donkeys. |
| (1)                                  | (2)                                | (3)           | (4)     | (5)                                                                            | (6)           | (7)     | (8)         | (9)           | (10)    | (11)                                    | (12)          | (13)    | (14)                           | (15)     | (16)                       | (17)     |
| Coimbatore, West                     | 2                                  | ..            | ..      | ..                                                                             | ..            | ..      | 1 *         | ..            | ..      | 2                                       | ..            | ..      | 10                             | ..       | ..                         | ..       |
| Coimbatore, East                     | 4                                  | ..            | ..      | ..                                                                             | ..            | ..      | ..          | ..            | ..      | 3                                       | ..            | ..      | 47                             | ..       | ..                         | ..       |
| Hosur Cattle Farm                    | 1                                  | ..            | ..      | ..                                                                             | ..            | ..      | ..          | ..            | ..      | 1                                       | ..            | ..      | 11                             | ..       | ..                         | ..       |
| 1st April to 30th<br>September 1953. | 7                                  | ..            | ..      | ..                                                                             | ..            | ..      | 1           | ..            | ..      | 6                                       | ..            | ..      | 68                             | ..       | 14,766                     | 71,595   |
| 1952-53 ..                           | 5                                  | ..            | ..      | 3                                                                              | ..            | ..      | 1           | ..            | ..      | 7                                       | ..            | ..      | 114                            | ..       | 14,766                     | 71,595   |
| 1951-52 ..                           | 5                                  | ..            | ..      | ..                                                                             | ..            | ..      | ..          | ..            | ..      | 5                                       | ..            | ..      | 119                            | ..       | 6,145                      | 28,285   |

\* Auctioned.

TABLE VI.—Abstract of particulars regarding cattle fairs and shows held during the period from 1st April to 30th September 1953 in the State of Madras.

|                                                        | Year. | 1st April to 30th September 1953. |
|--------------------------------------------------------|-------|-----------------------------------|
| 1 Total number of shows and fairs ..                   | ..    | 49                                |
| Total number of stock present—                         |       |                                   |
| 2 Bulls ..                                             | ..    | 18,893                            |
| 3 Bullocks ..                                          | ..    | 66,591                            |
| 4 Cows ..                                              | ..    | 19,729                            |
| 5 Young stock ..                                       | ..    | 20,272                            |
| 6 Buffaloes ..                                         | ..    | 6,783                             |
| 7 Camels ..                                            | ..    | ..                                |
| 8 Ponies ..                                            | ..    | 1,050                             |
| 9 Other animals ..                                     | ..    | 2,250                             |
| Total number of animals sold—                          |       |                                   |
| 10 Bulls ..                                            | ..    | 5,854                             |
| 11 Average price ..                                    | ..    | ..                                |
| 12 Bullocks ..                                         | ..    | 10,620                            |
| 13 Average price ..                                    | ..    | ..                                |
| 14 Cows ..                                             | ..    | 1,751                             |
| 15 Average price ..                                    | ..    | ..                                |
| 16 Buffaloes ..                                        | ..    | 132                               |
| 17 Average price ..                                    | ..    | ..                                |
| 18 Young stock ..                                      | ..    | 7,120                             |
| 19 Average price ..                                    | ..    | ..                                |
| 20 Ponies ..                                           | ..    | 530                               |
| 21 Average price ..                                    | ..    | ..                                |
| 22 Other animals ..                                    | ..    | ..                                |
| 23 Average price ..                                    | ..    | ..                                |
| Prize money awarded—                                   |       |                                   |
| 24 Amount realized in fees ..                          | ..    | Rs. 575                           |
| 25 Total number of animals that competed for prizes .. | ..    | 750                               |
| 26 From provincial funds ..                            | ..    | Rs. 1,400                         |
| 27 From local funds ..                                 | ..    | Rs. 5,100                         |
| 28 Other sources ..                                    | ..    | Rs. 20,520                        |
| 29 Total ..                                            | ..    | Rs. 27,020                        |
| 30 Amount actually awarded ..                          | ..    | Rs. 3,921-8-6                     |
| 31 Number of medals, prizes, etc., awarded ..          | ..    | Cash. Rs. 194<br>Cups. 132        |

TABLE VII.—Statistics of livestock slaughtered in recognized slaughter-houses in the State of Madras during the year 1953-54 (1st April to 30th September 1953).

| Year.                 | Number of recognized slaughter-houses for |               |                  |               |             |               |             |               | Number of animals slaughtered.         |        |                     |         |               |                |
|-----------------------|-------------------------------------------|---------------|------------------|---------------|-------------|---------------|-------------|---------------|----------------------------------------|--------|---------------------|---------|---------------|----------------|
|                       | Cattle and buffaloes.                     |               | Sheep and goats. |               | Pigs.       |               | Others.     |               | Number of unlicensed slaughter-houses. | Cows.  | Bulls and bullocks. | Calves. | He-buffaloes. | She-buffaloes. |
|                       | Government.                               | Local bodies. | Government.      | Local bodies. | Government. | Local bodies. | Government. | Local bodies. |                                        |        |                     |         |               |                |
| (1)                   | (2)                                       | (3)           | (4)              | (5)           | (6)         | (7)           | (8)         | (9)           | (10)                                   | (11)   | (12)                | (13)    | (14)          | (15)           |
| 1953-54 (first half). | ..                                        | 45            | 1                | 76            | 1           | 1             | ..          | ..            | ..                                     | 13,416 | 24,629              | ..      | 6,762         | 4,330          |
| 1952-53               | ..                                        | 76            | 1                | 183           | ..          | 6             | ..          | 12            | ..                                     | 27,816 | 62,470              | 21      | 32,560        | 11,908         |
| 1951-52               | ..                                        | 95            | 1                | 206           | ..          | 27            | ..          | 5             | ..                                     | 33,891 | 76,124              | 740     | 29,582        | 12,266         |
| 1950-51               | ..                                        | 110           | 3                | 358           | 1           | 10            | ..          | 3             | 11                                     | 29,398 | 67,384              | 151     | 58,601        | 8,158          |

| Number of animals slaughtered—cont. |           |           |       |                | Slaughter fee per head. |            |                  |       |         |           |           |           |           |                            |
|-------------------------------------|-----------|-----------|-------|----------------|-------------------------|------------|------------------|-------|---------|-----------|-----------|-----------|-----------|----------------------------|
|                                     |           |           |       | Other animals. | Cattle.                 | Buffaloes. | Sheep and goats. | Pigs. | Others. |           |           |           |           | Total animals slaughtered. |
| (16)                                | (17)      | (18)      | (19)  | (20)           | (21)                    | (22)       | (23)             | (24)  | (25)    |           |           |           |           | (26)                       |
| 1053-54 (first half.)               | 5,66,865  | 2,78,988  | 984   | ..             | ..                      | ..         | ..               | ..    | ..      | RS. A. P. | RS. A. P. | RS. A. P. | RS. A. P. | 8,95,974                   |
| 1952-53                             | 12,22,997 | 7,09,131  | 3,367 | 200            | 20 0 0                  | 10 0 0     | 1 2 0            | 5 0 0 | 0 0 0   | to 0 0 0  | to 0 0 0  | to 0 0 0  | to 0 0 0  | 2,06,853                   |
| 1951-52                             | 14,85,367 | 8,37,793  | 7,690 | 1,380          | 0 4 0                   | 0 4 0      | 0 6 0            | 0 2 0 | 0 2 0   | to 0 0 0  | to 0 0 0  | to 0 0 0  | to 0 0 0  | 25,04,838                  |
| 1950-51                             | 10,66,388 | 10,97,257 | 8,846 | 1,718          | 20 0 0                  | 10 0 0     | 10 2 0           | 5 0 0 | 0 0 0   | to 0 0 0  | to 0 0 0  | to 0 0 0  | to 0 0 0  | 29,09,851                  |
|                                     |           |           |       |                | 0 4 0                   | 0 4 0      | 0 6 0            | 0 2 0 | 0 2 0   | to 0 0 0  | to 0 0 0  | to 0 0 0  | to 0 0 0  |                            |
|                                     |           |           |       |                | 2 0 0                   | 2 0 0      | 1 2 0            | 5 0 0 | 0 0 0   | to 0 0 0  | to 0 0 0  | to 0 0 0  | to 0 0 0  |                            |

TABLE VIII.—Statement showing the receipts and charges of the Animal Husbandry Department for the period from 1st April to 30th September 1953 (provisional).

|                                                  |    | Receipts. |       | Charges. |       |
|--------------------------------------------------|----|-----------|-------|----------|-------|
|                                                  |    | RS.       | A. P. | RS.      | A. P. |
| <b>XXX. Veterinary—</b>                          |    |           |       |          |       |
| (a) Veterinary College fees                      | .. | 70,022    | 0 6   |          |       |
| (b) Other receipts                               | .. | 3,74,590  | 14 11 |          |       |
| (c) Collection of payments for services rendered | .. | 2,115     | 15 9  |          |       |
| (d) Deduct refunds                               | .. | —4,956    | 2 10  |          |       |
|                                                  |    |           |       | 4,41,772 | 12 4  |
| <b>41. Veterinary—a. Superintendence—</b>        |    |           |       |          |       |
| <b>A. Direction—</b>                             |    |           |       |          |       |
| 1 Pay of officers                                | .. | 16,500    | 0 0   |          |       |
| 2 Pay of establishments                          | .. | 29,498    | 1 0   |          |       |
| 3 Allowances                                     | .. | 18,497    | 1 0   |          |       |
| 4 Office contingencies                           | .. | 11,910    | 2 8   |          |       |
| 5 Other charges                                  | .. | ..        | ..    |          |       |
|                                                  |    |           |       | 70,405   | 4 8   |
| <b>B. District Officers—</b>                     |    |           |       |          |       |
| 1 Pay of officers                                | .. | 41,439    | 14 0  |          |       |
| 2 Pay of establishments                          | .. | 41,210    | 7 0   |          |       |
| 3 Allowances                                     | .. | 54,273    | 0 3   |          |       |
| 4 Office contingencies                           | .. | 22,091    | 10 5  |          |       |
| 5 Other charges                                  | .. | ..        | ..    |          |       |
|                                                  |    |           |       | 1,59,014 | 15 8  |
| <b>C. Post-war Reconstruction—</b>               |    |           |       |          |       |
| <b>I. Direction—</b>                             |    |           |       |          |       |
| 1 Pay of officers                                | .. | 10,910    | 0 0   |          |       |
| 2 Pay of establishments                          | .. | 1,686     | 4 0   |          |       |
| 3 Allowances                                     | .. | 7,602     | 13 0  |          |       |
| 4 Office contingencies                           | .. | 140       | 10 0  |          |       |
|                                                  |    |           |       | 20,339   | 11 0  |

TABLE VIII.—Statement showing the receipts and charges of the Animal Husbandry Department for the period from 1st April to 30th September 1953 (provisional)—cont.

|                                                                |    | Charges—cont. |       |          |       |
|----------------------------------------------------------------|----|---------------|-------|----------|-------|
|                                                                |    | RS.           | A. P. | RS.      | A. P. |
| <b>41. Veterinary—a. Superintendence—cont.</b>                 |    |               |       |          |       |
| <b>C. Post-war Reconstruction—cont.</b>                        |    |               |       |          |       |
| <b>II. District officers—</b>                                  |    |               |       |          |       |
| 1 Pay of officers                                              | .. | 12,538        | 15 0  |          |       |
| 2 Pay of establishments                                        | .. | 11,232        | 15 0  |          |       |
| 3 Allowances                                                   | .. | 16,321        | 10 0  |          |       |
| 4 Office contingencies                                         | .. | 7,241         | 3 1   |          |       |
|                                                                |    |               |       | 47,307   | 11 1  |
| <b>41. Veterinary—b. Subordinate Establishment—</b>            |    |               |       |          |       |
| <b>A. Excluding Post-war Reconstruction—</b>                   |    |               |       |          |       |
| <b>I. Ordinary Areas—</b>                                      |    |               |       |          |       |
| 1 Pay of establishment                                         | .. | 2,48,776      | 4 0   |          |       |
| 2 Allowances                                                   | .. | 1,50,053      | 12 0  |          |       |
| 3 Office contingencies                                         | .. | 17,778        | 7 5   |          |       |
| 4 Purchase of sera including freight                           | .. | 9,936         | 11 0  |          |       |
|                                                                |    |               |       | 4,26,545 | 2 5   |
| <b>II. Scheduled Areas—</b>                                    |    |               |       |          |       |
| 1 Pay of establishments                                        | .. | 6,603         | 15 0  |          |       |
| 2 Allowances                                                   | .. | 6,031         | 6 0   |          |       |
| 3 Contingencies                                                | .. | 473           | 14 3  |          |       |
|                                                                |    |               |       | 13,109   | 3 3   |
| <b>B. Post-war Reconstruction—</b>                             |    |               |       |          |       |
| <b>I. Ordinary Areas—</b>                                      |    |               |       |          |       |
| 1 Pay of establishments                                        | .. | 49,885        | 8 0   |          |       |
| 2 Allowances                                                   | .. | 36,689        | 1 0   |          |       |
| 3 Other charges                                                | .. | 1,474         | 1 5   |          |       |
|                                                                |    |               |       | 88,048   | 10 5  |
| <b>II. Scheduled Areas—</b>                                    |    |               |       |          |       |
| 1 Pay of establishments                                        | .. | 2,313         | 1 0   |          |       |
| 2 Allowances                                                   | .. | 1,822         | 5 0   |          |       |
| 3 Contingencies                                                | .. | 119           | 10 6  |          |       |
|                                                                |    |               |       | 4,255    | 0 6   |
| <b>41. Veterinary—c. Hospitals and Dispensaries—</b>           |    |               |       |          |       |
| <b>A. Excluding Post-war Reconstruction—</b>                   |    |               |       |          |       |
| <b>I. Ordinary Areas—</b>                                      |    |               |       |          |       |
| 1 Pay of establishments                                        | .. | 1,87,294      | 6 0   |          |       |
| 2 Allowances                                                   | .. | 62,479        | 15 0  |          |       |
| 3 Office contingencies                                         | .. | 1,34,330      | 10 6  |          |       |
| 4 Other charges                                                | .. | 1,54,703      | 13 3  |          |       |
| 5 Grant to the Madras Corporation for veterinary dispensaries. | .. | ..            | ..    |          |       |
|                                                                |    |               |       | 5,38,808 | 12 9  |
| <b>II. Scheduled Areas—</b>                                    |    |               |       |          |       |
| 1 Pay and travelling allowances                                | .. | 3,182         | 6 0   |          |       |
| 2 Dearness allowance                                           | .. | 630           | 0 0   |          |       |
| 3 Dearness allowance to menials                                | .. | 468           | 0 0   |          |       |
| 4 Other charges                                                | .. | 2,216         | 12 6  |          |       |
|                                                                |    |               |       | 6,497    | 2 6   |
| <b>B. Post-war Reconstruction—</b>                             |    |               |       |          |       |
| 1 Pay of establishments                                        | .. | 6,769         | 10 0  |          |       |
| 2 Allowances                                                   | .. | 4,290         | 14 0  |          |       |
| 3 Other charges                                                | .. | 3,773         | 8 0   |          |       |
|                                                                |    |               |       | 14,834   | 0 0   |
| <b>41. Veterinary—d. Education and Research—</b>               |    |               |       |          |       |
| <b>A. Veterinary College—</b>                                  |    |               |       |          |       |
| 1 Pay of officers                                              | .. | 38,270        | 5 0   |          |       |
| 2 Pay of establishments                                        | .. | 44,476        | 4 0   |          |       |
| 3 Allowances and honoraria                                     | .. | 33,880        | 3 0   |          |       |
| 4 Office contingencies                                         | .. | 15,632        | 12 7  |          |       |
| 5 Other charges                                                | .. | 74,115        | 6 5   |          |       |
|                                                                |    |               |       | 2,06,374 | 15 0  |

TABLE VIII.—Statement showing the receipts and charges of the Animal Husbandry Department for the period from 1st April to 30th September 1953 (provisional)—cont.

| Charges—cont.                                                                                 |        | RS. | A. | P. | RS.      | A. | P. |
|-----------------------------------------------------------------------------------------------|--------|-----|----|----|----------|----|----|
| 41. Veterinary—d. Education and Research—cont.                                                |        |     |    |    |          |    |    |
| B. Veterinary Investigation—                                                                  |        |     |    |    |          |    |    |
| 1 Pay of staff .. .. .                                                                        | 4,356  | 0   | 0  |    |          |    |    |
| 2 Allowances .. .. .                                                                          | 3,521  | 5   | 6  |    |          |    |    |
| 3 Office contingencies .. .. .                                                                | 2,188  | 9   | 0  |    |          |    |    |
| 4 Mobile Laboratory .. .. .                                                                   | 1,758  | 11  | 6  |    |          |    |    |
|                                                                                               |        |     |    |    |          |    |    |
| C. Enquiry into the Helminthiasis of cattle—                                                  |        |     |    |    | 11,824   | 10 | 0  |
| 1 Pay of officers .. .. .                                                                     | 2,564  | 0   | 0  |    |          |    |    |
| 2 Pay of establishments .. .. .                                                               | 1,236  | 13  | 0  |    |          |    |    |
| 3 Allowances .. .. .                                                                          | 1,082  | 2   | 0  |    |          |    |    |
| 4 Office contingencies .. .. .                                                                | 288    | 6   | 3  |    |          |    |    |
| 5 Contribution to Indian Council of Agricultural Research Provident Fund .. .. .              |        |     |    |    |          |    |    |
|                                                                                               |        |     |    |    |          |    |    |
| D. Investigation into the diseases of poultry—                                                |        |     |    |    | 5,171    | 5  | 3  |
| 1 Pay of officers .. .. .                                                                     | 2,100  | 0   | 0  |    |          |    |    |
| 2 Pay of establishments .. .. .                                                               | 787    | 0   | 0  |    |          |    |    |
| 3 Allowances .. .. .                                                                          | 1,972  | 4   | 0  |    |          |    |    |
| 4 Other charges .. .. .                                                                       | 544    | 12  | 9  |    |          |    |    |
|                                                                                               |        |     |    |    |          |    |    |
| E. Post-war Reconstruction—                                                                   |        |     |    |    | 5,404    | 0  | 9  |
| I. Investigation into the disease of sheep and goats—                                         |        |     |    |    |          |    |    |
| 1 Pay of officers .. .. .                                                                     | 2,684  | 0   | 0  |    |          |    |    |
| 2 Pay of establishments .. .. .                                                               | 495    | 2   | 0  |    |          |    |    |
| 3 Allowances .. .. .                                                                          | 1,855  | 14  | 0  |    |          |    |    |
| 4 Other charges .. .. .                                                                       | 2,118  | 7   | 9  |    |          |    |    |
|                                                                                               |        |     |    |    |          |    |    |
| II. Other Schemes—                                                                            |        |     |    |    | 7,153    | 7  | 9  |
| (i) Technical training in the United Kingdom and the United States of America—                |        |     |    |    |          |    |    |
| Other charges .. .. .                                                                         |        |     |    |    |          |    |    |
| (ii) Allowances to candidates for technical training in the United States of America. .. .. . |        |     |    |    |          |    |    |
| (iii) Educational and training of demobilized personnel—                                      |        |     |    |    |          |    |    |
| Maintenance allowance and cost of books. .. .. .                                              |        |     |    |    |          |    |    |
| (iv) Veterinary College—                                                                      |        |     |    |    |          |    |    |
| 1 Pay of officers .. .. .                                                                     | 5,388  | 0   | 0  |    |          |    |    |
| 2 Pay of establishments .. .. .                                                               | 359    | 9   | 0  |    |          |    |    |
| 3 Allowances .. .. .                                                                          | 1,705  | 3   | 0  |    |          |    |    |
| 4 Office contingencies .. .. .                                                                | 597    | 2   | 0  |    |          |    |    |
|                                                                                               |        |     |    |    |          |    |    |
| F. Indigenous Drugs Scheme—                                                                   |        |     |    |    | 8,049    | 14 | 0  |
| 1 Pay of officers .. .. .                                                                     |        |     |    |    |          |    |    |
| 2 Pay of establishments .. .. .                                                               |        |     |    |    |          |    |    |
| 3 Allowances .. .. .                                                                          |        |     |    |    |          |    |    |
| 4 Office contingencies .. .. .                                                                |        |     |    |    |          |    |    |
|                                                                                               |        |     |    |    |          |    |    |
| G. Scheme for tuberculin testing of cattle—Nil.                                               |        |     |    |    |          |    |    |
| 41. e. Other Charges—                                                                         |        |     |    |    |          |    |    |
| A. Veterinary Biological and Research Institute, Ranipet—                                     |        |     |    |    |          |    |    |
| 1 Pay of officers .. .. .                                                                     | 3,932  | 13  | 0  |    |          |    |    |
| 2 Pay of establishments .. .. .                                                               | 22,137 | 6   | 0  |    |          |    |    |
| 3 Allowances .. .. .                                                                          | 12,232 | 1   | 0  |    |          |    |    |
| 4 Office contingencies .. .. .                                                                | 32,675 | 8   | 11 |    |          |    |    |
| 5 Other charges .. .. .                                                                       | 62,593 | 9   | 3  |    |          |    |    |
|                                                                                               |        |     |    |    |          |    |    |
| B. Manufacture of Ranikhet disease vaccine—                                                   |        |     |    |    | 1,33,571 | 4  | 2  |
| 1 Pay of officers .. .. .                                                                     | 2,342  | 11  | 0  |    |          |    |    |
| 2 Pay of establishments .. .. .                                                               | 2,283  | 10  | 0  |    |          |    |    |
| 3 Allowances .. .. .                                                                          | 2,546  | 5   | 0  |    |          |    |    |
| 4 Other charges .. .. .                                                                       | 145    | 0   | 0  |    |          |    |    |
|                                                                                               |        |     |    |    |          |    |    |
|                                                                                               |        |     |    |    | 7,327    | 10 | 0  |

TABLE VIII.—Statement showing the receipts and charges of the Animal Husbandry Department for the period from 1st April to 30th September 1953 (provisional)—cont.

| Charges—cont.                                                                    |          | RS. | A. | P. | RS.       | A. | P. |
|----------------------------------------------------------------------------------|----------|-----|----|----|-----------|----|----|
| 41. f. Breeding Operations—                                                      |          |     |    |    |           |    |    |
| A. Research stations—                                                            |          |     |    |    |           |    |    |
| 1 Pay of officers .. .. .                                                        | 3,584    | 5   | 0  |    |           |    |    |
| 2 Pay of establishments .. .. .                                                  | 22,631   | 15  | 0  |    |           |    |    |
| 3 Allowances .. .. .                                                             | 83,172   | 10  | 0  |    |           |    |    |
| 4 Other charges .. .. .                                                          | 3,04,946 | 2   | 0  |    |           |    |    |
|                                                                                  |          |     |    |    |           |    |    |
|                                                                                  |          |     |    |    | 41,43,335 | 0  | 0  |
| B. Livestock Improvement Scheme—                                                 |          |     |    |    |           |    |    |
| 2. Scheme for the formation of a Breeders' Association for Ongole—               |          |     |    |    |           |    |    |
| 1 Pay of establishments .. .. .                                                  | 2,336    | 5   | 0  |    |           |    |    |
| 2 Allowances .. .. .                                                             | 2,133    | 9   | 0  |    |           |    |    |
| 3 Other charges—Contingencies .. .. .                                            | 403      | 10  | 0  |    |           |    |    |
|                                                                                  |          |     |    |    |           |    |    |
|                                                                                  |          |     |    |    | 4,873     | 8  | 0  |
| II. Other Schemes—                                                               |          |     |    |    |           |    |    |
| (i) Ordinary Areas—                                                              |          |     |    |    |           |    |    |
| 1. Cattle improvement Scheme to assist Sugalis—                                  |          |     |    |    |           |    |    |
| Dearness allowance to menials .. .. .                                            | 1,524    | 0   | 0  |    |           |    |    |
| 2. Sheep Breeding Scheme .. .. .                                                 | 2,372    | 9   | 0  |    |           |    |    |
| Dearness allowance to staff .. .. .                                              | 373      | 0   | 0  |    |           |    |    |
| Dearness allowance to menials .. .. .                                            | 1,138    | 7   | 0  |    |           |    |    |
| 3. Other charges—                                                                |          |     |    |    |           |    |    |
| Maintenance of cattle .. .. .                                                    | 45,350   | 0   | 5  |    |           |    |    |
| Premia for maintenance of breeding bulls .. .. .                                 | 74,738   | 0   | 0  |    |           |    |    |
| Dearness allowance to menials .. .. .                                            | 7,402    | 2   | 0  |    |           |    |    |
| Madras allowance to menials .. .. .                                              | 65       | 13  | 0  |    |           |    |    |
| Grant of subsidy to owners of Ongole heifer calves .. .. .                       |          |     |    |    |           |    |    |
| Scheme for the improvement of woolly breed to sheep in the districts .. .. .     |          |     |    |    |           |    |    |
| Scheme for the improvement of milsh goats in South Kanara district .. .. .       | 360      | 0   | 0  |    |           |    |    |
| Subsidy to Pattagar, Palayakottai .. .. .                                        |          |     |    |    |           |    |    |
| 4. Scheme for the improvement of Kangayam Breed of cattle .. .. .                | 43,956   | 0   | 3  |    |           |    |    |
| 5. Scheme for improvement of mutton or hairy type of sheep .. .. .               | 3,177    | 2   | 9  |    |           |    |    |
| 6. Scheme for the grant of subsidy to owners of calves in Madras City .. .. .    |          |     |    |    |           |    |    |
| Pay of establishments .. .. .                                                    |          |     |    |    |           |    |    |
| Dearness allowance .. .. .                                                       |          |     |    |    |           |    |    |
|                                                                                  |          |     |    |    |           |    |    |
|                                                                                  |          |     |    |    | 1,80,457  | 2  | 5  |
| 7. Scheme for the improvement of woolly sheep in the Nilgiris—                   |          |     |    |    |           |    |    |
| Pay of establishment .. .. .                                                     | 2,246    | 4   | 0  |    |           |    |    |
| Allowances .. .. .                                                               | 1,585    | 10  | 0  |    |           |    |    |
| Dearness allowance to menials .. .. .                                            | 1,435    | 11  | 0  |    |           |    |    |
| Other charges .. .. .                                                            | 17,886   | 5   | 0  |    |           |    |    |
|                                                                                  |          |     |    |    |           |    |    |
|                                                                                  |          |     |    |    | 23,153    | 14 | 0  |
| (ii) Scheduled Areas—                                                            |          |     |    |    |           |    |    |
| Scheme for the amelioration of conditions to Hill Tribes in Agency Areas .. .. . |          |     |    |    |           |    |    |
|                                                                                  | 26,076   | 5   | 8  |    |           |    |    |
|                                                                                  |          |     |    |    | 26,076    | 5  | 8  |
| C. Pony Breeding Improvement Scheme .. .. .                                      |          |     |    |    |           |    |    |
| 1 Dearness allowance .. .. .                                                     | 432      | 0   | 0  |    |           |    |    |
| 2 Miscellaneous .. .. .                                                          | 3,717    | 14  | 9  |    |           |    |    |
|                                                                                  |          |     |    |    |           |    |    |
|                                                                                  |          |     |    |    | 4,149     | 14 | 9  |
| D. Poultry Development Scheme—                                                   |          |     |    |    |           |    |    |
| 1 Pay of officers .. .. .                                                        | 2,972    | 0   | 0  |    |           |    |    |
| 2 Pay of establishments .. .. .                                                  | 6,779    | 12  | 0  |    |           |    |    |
| 3 Allowances .. .. .                                                             | 5,470    | 0   | 0  |    |           |    |    |
| 4 Dearness allowance to menials .. .. .                                          | 2,467    | 6   | 0  |    |           |    |    |
| 5 Other charges .. .. .                                                          | 23,984   | 0   | 0  |    |           |    |    |
|                                                                                  |          |     |    |    |           |    |    |
|                                                                                  |          |     |    |    | 41,673    | 2  | 0  |

TABLE VIII.—Statement showing the receipts and charges of the Animal Husbandry Department for the period from 1st April to 30th September 1953 (provisional)—cont.

|                                                                    | Charges—cont. |  |  | RS. A. P. |    |    | RS. A. P. |    |    |
|--------------------------------------------------------------------|---------------|--|--|-----------|----|----|-----------|----|----|
|                                                                    |               |  |  |           |    |    |           |    |    |
| 41. f. Breeding operations—cont.                                   |               |  |  |           |    |    |           |    |    |
| E. Other charges—                                                  |               |  |  |           |    |    |           |    |    |
| Grants of Agricultural Association, Exhibition Committees, etc.    |               |  |  | 3,044     | 6  | 9  |           |    |    |
| Contributions .. .. .                                              |               |  |  | 16,400    | 0  | 0  |           |    |    |
| American Arcot Mission for Poultry Development.                    |               |  |  | 4,493     | 10 | 0  |           |    |    |
|                                                                    |               |  |  |           |    |    | 23,938    | 0  | 9  |
| F. Scheme for salvage of dry cows—                                 |               |  |  |           |    |    |           |    |    |
| 1 Pay of establishment .. .. .                                     |               |  |  | 3,287     | 3  | 0  |           |    |    |
| 2 Allowances .. .. .                                               |               |  |  | 3,024     | 12 | 0  |           |    |    |
| 3 Other charges .. .. .                                            |               |  |  | 36,867    | 14 | 9  |           |    |    |
|                                                                    |               |  |  |           |    |    | 43,179    | 13 | 9  |
| G. Post-war Reconstruction—                                        |               |  |  |           |    |    |           |    |    |
| (i) Scheme for the improvement of Livestock—                       |               |  |  |           |    |    |           |    |    |
| Other charges .. .. .                                              |               |  |  | 231       | 12 | 0  |           |    |    |
| (ii) District Farms—                                               |               |  |  |           |    |    |           |    |    |
| Pay of officers .. .. .                                            |               |  |  | 4,760     | 0  | 0  |           |    |    |
| Pay of establishments .. .. .                                      |               |  |  | 15,541    | 5  | 0  |           |    |    |
| Allowances .. .. .                                                 |               |  |  | 7,621     | 3  | 0  |           |    |    |
| Purchase of livestock .. .. .                                      |               |  |  |           |    |    |           |    |    |
| Purchase of deadstock .. .. .                                      |               |  |  | 5,043     | 11 | 0  |           |    |    |
| Repairs and upkeep .. .. .                                         |               |  |  | 13,185    | 6  | 3  |           |    |    |
| Maintenance of cattle .. .. .                                      |               |  |  | 1,97,198  | 9  | 9  |           |    |    |
| Mazdoor labour .. .. .                                             |               |  |  | 18,420    | 12 | 3  |           |    |    |
| Dearness allowance to menials .. .. .                              |               |  |  | 11,860    | 4  | 3  |           |    |    |
| Petty construction and repairs .. .. .                             |               |  |  | 1,335     | 5  | 8  |           |    |    |
| Other charges .. .. .                                              |               |  |  | 49,949    | 4  | 0  |           |    |    |
|                                                                    |               |  |  |           |    |    | 3,24,916  | 3  | 0  |
| (iii) Cattle Breeding Farms—                                       |               |  |  |           |    |    |           |    |    |
| Pay of officers .. .. .                                            |               |  |  | 7,543     | 12 | 0  |           |    |    |
| Pay of establishments .. .. .                                      |               |  |  | 14,659    | 0  | 0  |           |    |    |
| Allowances .. .. .                                                 |               |  |  | 9,509     | 10 | 0  |           |    |    |
| Other charges .. .. .                                              |               |  |  | 1,50,794  | 0  | 0  |           |    |    |
|                                                                    |               |  |  |           |    |    | 1,82,506  | 6  | 0  |
| Scheme for the Development of Sheep and Goats—                     |               |  |  |           |    |    |           |    |    |
| Pay of officers .. .. .                                            |               |  |  | 2,040     | 11 | 0  |           |    |    |
| Pay of establishments .. .. .                                      |               |  |  | 2,126     | 2  | 0  |           |    |    |
| Allowances .. .. .                                                 |               |  |  | 5,178     | 8  | 0  |           |    |    |
| Other charges .. .. .                                              |               |  |  | 969       | 11 | 6  |           |    |    |
|                                                                    |               |  |  |           |    |    | 10,315    | 0  | 6  |
| H. Scheme for Artificial Insemination of Cattle—                   |               |  |  |           |    |    |           |    |    |
| Pay of officers .. .. .                                            |               |  |  | 1,752     | 5  | 0  |           |    |    |
| Pay of establishments .. .. .                                      |               |  |  | 10,161    | 14 | 0  |           |    |    |
| Allowances .. .. .                                                 |               |  |  | 7,143     | 13 | 0  |           |    |    |
| Other charges .. .. .                                              |               |  |  | 6,626     | 2  | 0  |           |    |    |
|                                                                    |               |  |  |           |    |    | 25,684    | 2  | 0  |
| K. Key Village Scheme—                                             |               |  |  |           |    |    |           |    |    |
| Pay of officers .. .. .                                            |               |  |  | 9,880     | 13 | 0  |           |    |    |
| Pay of establishments .. .. .                                      |               |  |  | 27,437    | 4  | 0  |           |    |    |
| Allowances .. .. .                                                 |               |  |  | 18,024    | 5  | 0  |           |    |    |
| Other charges .. .. .                                              |               |  |  | 39,715    | 1  | 11 |           |    |    |
|                                                                    |               |  |  |           |    |    | 95,057    | 7  | 11 |
| L. Key Farm Centres in Private Institutions ..                     |               |  |  | 29,925    | 13 | 1  |           |    |    |
| Deduct—Charges recoverable from other Government departments, etc. |               |  |  | —23,075   | 5  | 9  |           |    |    |
| Cattle breeding farms .. .. .                                      |               |  |  |           |    |    | —23,075   | 5  | 9  |
| 41. h. Charges in England—                                         |               |  |  |           |    |    |           |    |    |
| High Commissioner for India—                                       |               |  |  |           |    |    |           |    |    |
| A. Leave salary and deputation pay .. .. .                         |               |  |  |           |    |    |           |    |    |
|                                                                    |               |  |  |           |    |    |           |    |    |
| Grand total ..                                                     |               |  |  | 31,81,199 | 5  | 3  |           |    |    |

TABLE IX.—Strength of staff and their distribution as on 30th September 1953.

|                                                                                                                                                 | Gazetted. |  | Non-gazetted. |                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--|---------------|----------------------------------------------------------------------------------|
|                                                                                                                                                 | Number.   |  | Number.       |                                                                                  |
| 1. Head of Department .. .. .                                                                                                                   | 1         |  | 150           | 9. Employed in King Institute, Guindy .. 2                                       |
| 2. Deputy Director of Animal Husbandry, (Veterinary), Madras.                                                                                   | 1         |  | 182           | 10. Employed in the Indian Council of Agricultural Research Scheme. 8            |
| 3. Deputy Director of Animal Husbandry, (Livestock), Madras.                                                                                    | 1         |  | 23            | 11. Employed in the Community Project Works. 20                                  |
| 4. Deputy Director of Animal Husbandry, (Key Villages), Madras.                                                                                 | 1         |  | 13            | 12. Employed in the Office of the Director of Animal Husbandry for Statistics. 1 |
| 5. Superintendent, Veterinary Biological and Research Institute, Ranipet.                                                                       | 1         |  | 42            | 13. Employed under Foreign Service liens .. 2                                    |
| 6. Principal, Madras Veterinary College ..                                                                                                      | 1         |  | 2             | 14. Leave Reserves .. .. . 35                                                    |
| 7. Lecturers in Madras Veterinary College (excluding the post of the Lecturer in Bacteriology held by the Principal, Madras Veterinary College. | 13        |  | 2             | 15. Employed in the Office of the District Veterinary Officer, Visakhapatnam. 1  |
| 8. Lecturer in Chemistry, Madras Veterinary College.                                                                                            | 1         |  | 3             |                                                                                  |
| 9. Lecturer in Biology, Madras Veterinary College.                                                                                              | 1         |  |               | Total .. 486                                                                     |
| 10. Lecturer in Veterinary Science, Agricultural College, Coimbatore.                                                                           | 1         |  |               |                                                                                  |
| 11. District Veterinary Officers .. .. .                                                                                                        | 26        |  |               |                                                                                  |
| 12. Superintendent, Livestock Research Station, Hosur Cattle Farm.                                                                              | 1         |  |               |                                                                                  |
| 13. Superintendent of Livestock Farms other than Hosur.                                                                                         | 6         |  |               |                                                                                  |

TABLE X.—*Examination results of the Madras Veterinary College, 1953-54*  
(1st April to 30th September 1953).

| (1)<br>..                       | Number of students admitted. |                                       |                                       |                                          |            | Educational qualifications.         |                          | Results of the examinations. |
|---------------------------------|------------------------------|---------------------------------------|---------------------------------------|------------------------------------------|------------|-------------------------------------|--------------------------|------------------------------|
|                                 | (2)<br>s                     | (3)<br>214                            | (4)<br>108                            | (5)<br>7                                 | (6)<br>331 | (7)<br>311                          | (8)<br>20                | (9)                          |
| Number of scholar-ship holders. | Free tuition.                | Rs. 200 per annum (full tuition fee). | Rs. 120 per annum (full tuition fee). | Rs. 40 or 67 (tuition fee for one term). | Total.     | Intermediate in Arts or in Science. | B.A., B.Sc. and Honours. | Appeared.                    |

### Results of the examinations—cont.

| Annual.                         |    | Employment of graduates. |                                               |
|---------------------------------|----|--------------------------|-----------------------------------------------|
| B.V. Sc. Preliminary            | 43 | (11)                     | Instructions prolonged on account of failure. |
| B.V. Sc. Intermediate, Part I.  | 30 | (12)                     | Receipts.                                     |
| B.V. Sc. Intermediate, Part II. | 38 | (13)                     | Expenditure.                                  |
| B.V. Sc. Final                  | 31 | (14)                     | Total number passed.                          |
|                                 |    | (15)                     | In the service of Local Government.           |
|                                 |    | (16)                     | In the service of other bodies.               |
|                                 |    | (17)                     | In private practice.                          |
|                                 |    | (18)                     | Number employed.                              |
|                                 |    | (19)                     | Remarks.                                      |

Not available.

TABLE XI (a).—Statement showing the location and other particulars of Livestock Farms in the State of Madras during the period 1st April to 30th September 1953.

### Cattle and buffaloes.

| Name and address of the farm.                 | Area of the farms. |                    | Purpose of the farm and herd (breeding, experimental or dairy, etc.).                                                                                                                      | Breed.                                                                                                                                | Strength of the herd in each breed.           |                                                 |                                              | Number of sires issued during the          |                                            |                                             | Lactation average.                                                             |                                                            |                                                    |                              |
|-----------------------------------------------|--------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-------------------------------------------------|----------------------------------------------|--------------------------------------------|--------------------------------------------|---------------------------------------------|--------------------------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------|------------------------------|
|                                               | Total.             | Under cultivation. |                                                                                                                                                                                            |                                                                                                                                       | Bulls.                                        | Cows.                                           | Young stock.                                 | Period under                               | Last year.                                 | Year last.                                  | Milk yield of the herd per lactation completed.                                | Days in milk.                                              | Days dry.                                          |                              |
| (1)                                           | (2)                | (3)                | (4)                                                                                                                                                                                        | (5)                                                                                                                                   | (6)                                           | (7)                                             | (8)                                          | (9)                                        | (10)                                       | (11)                                        | (12)                                                                           | (13)                                                       | (14)                                               |                              |
| Livestock Research Station, Hoar Cattle Farm. | 1,650-91           | 1,195-19           | To produce pedigree bulls for supply to districts and Research.                                                                                                                            | Sindhi ..<br>Kangayam ..<br>Cross-bred ..<br>Gir ..<br>Hallikar ..<br>Murrah buffaloes ..<br>Ongole ..<br>Murrah buffaloes ..         | 157<br>103<br>16<br>36<br>17<br>3<br>40<br>25 | 281<br>248<br>32<br>65<br>..<br>..<br>144<br>40 | 98<br>107<br>10<br>31<br>..<br>..<br>29<br>1 | 14<br>3<br>..<br>1<br>1<br>..<br>11<br>..  | 50<br>7<br>..<br>5<br>3<br>..<br>4<br>7    | 13<br>10<br>..<br>1<br>1<br>..<br>20<br>8   | 2,838-9<br>1,098-9<br>3,084-0<br>2,769-8<br>..<br>..<br>1,817-5<br>1,893-5     | 275-6<br>292-2<br>267-0<br>243-0<br>..<br>..<br>248<br>279 | 131<br>238<br>388<br>101<br>..<br>..<br>473<br>232 |                              |
| Livestock Research Station, Guntur.           | 357-05             | 210                | To improve Ongole breed of cattle by selective breeding, and supply pedigrees bulls for stud. To grade up local buffaloes by Murrah bulls at stud and to issue to pedigree bulls for stud. | Ongole ..<br>Murrah buffaloes ..                                                                                                      | 40<br>25                                      | 144<br>40                                       | 29<br>1                                      | 11<br>..                                   | 4<br>7                                     | 20<br>8                                     | 1,817-5<br>1,893-5                                                             | 248<br>279                                                 | 473<br>232                                         |                              |
| Dairy-cum-Bull Farm, Visakhapatnam.           | 165                | 165                | To supply milk and milk products to the urban population of Visakhapatnam and to supply good buffalo bulls.                                                                                | Murrah buffaloes ..                                                                                                                   | 70                                            | 385                                             | 115                                          | 1                                          | 4                                          | ..                                          | 3,448-9                                                                        | 206                                                        | 219                                                |                              |
| Combined Sheep and Cattle Farm, Kurukruppi.   | 386                | 172                | To supply pedigree Hallikar and woolly variety of sheep.                                                                                                                                   | Hallikar ..<br>Murrah buffaloes ..                                                                                                    | 107<br>2                                      | 224<br>10                                       | 59<br>5                                      | 2<br>..                                    | 9<br>2                                     | 6<br>3                                      | 1,440-3                                                                        | 240                                                        | 174                                                |                              |
| District Livestock Farm, Malabar.             | 381-28             | 152-17             | To improve the livestock of the district.                                                                                                                                                  | Murrah buffaloes ..<br>Dharwar ..<br>Sindhi ..<br>Murrah buffaloes ..<br>Dharwar buffaloes ..<br>Sindhi ..<br>Gir ..<br>Local cows .. | 18<br>1<br>9<br>11<br>6<br>19<br>5<br>3       | 37<br>8<br>6<br>82<br>29<br>6<br>10<br>35       | 17<br>5<br>5<br>30<br>4<br>14<br>3<br>14     | ..<br>..<br>..<br>1<br>..<br>1<br>..<br>.. | ..<br>..<br>..<br>1<br>1<br>..<br>..<br>.. | 2<br>..<br>..<br>..<br>..<br>..<br>..<br>.. | 3,499-2<br>2,204-75<br>..<br>3,610-5<br>2,250-0<br>3,445-0<br>3,483-5<br>512-0 | 284-8<br>192<br>307<br>265<br>322<br>68<br>260<br>218      | 173-5<br>223<br>92<br>118<br>68<br>106<br>64       |                              |
| District Livestock Farm, South Kanara.        | 760                | 650                | Do.                                                                                                                                                                                        | Sindhi ..<br>Kangayam ..<br>Cross-bred ..<br>Sahiwal ..<br>Murrah buffaloes ..                                                        | 9<br>21<br>2<br>2<br>2                        | 28<br>36<br>8<br>2<br>..                        | 4<br>5<br>6<br>1<br>..                       | ..<br>..<br>..<br>..<br>..                 | ..<br>..<br>..<br>..<br>..                 | ..<br>..<br>..<br>..<br>..                  | ..<br>..<br>..<br>..<br>..                                                     | 3,076-8<br>1,636-8<br>..<br>..<br>..                       | 392<br>386<br>..<br>..<br>..                       | 155<br>148<br>..<br>..<br>.. |
| District Livestock Farm, Pudukkottai.         | 7                  | 4'02               | To improve the live-stock of the district and to run a small scale dairy farm.                                                                                                             | Sindhi ..<br>Kangayam ..<br>Cross-bred ..<br>Sahiwal ..<br>Murrah buffaloes ..                                                        | 9<br>21<br>2<br>2<br>2                        | 28<br>36<br>8<br>2<br>..                        | 4<br>5<br>6<br>1<br>..                       | ..<br>..<br>..<br>..<br>..                 | ..<br>..<br>..<br>..<br>..                 | ..<br>..<br>..<br>..<br>..                  | ..<br>..<br>..<br>..<br>..                                                     | 3,076-8<br>1,636-8<br>..<br>..<br>..                       | 392<br>386<br>..<br>..<br>..                       | 155<br>148<br>..<br>..<br>.. |
| District Livestock Farm, Pudukottai.          | 762                | 57-30              | To rear young stock and dry stock.                                                                                                                                                         | Ongole ..<br>Sindhi ..                                                                                                                | 55<br>4                                       | 74<br>1                                         | 8<br>..                                      | ..<br>..                                   | 1<br>..                                    | ..<br>..                                    | 3,611                                                                          | 370                                                        | 120                                                |                              |

TABLE XI (b).—Statement showing the location and other particulars of Livestock Farms in the State of Madras during the period from 1st April to 30th September 1953.

| Name and address of the farm.                  | Area of the farm. |                    | Purpose of the farm.                                                                                                                       | Breed.                                                                                                | Strength of the flock in each breed. |                                  |                                 |
|------------------------------------------------|-------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|--------------------------------------|----------------------------------|---------------------------------|
|                                                | Total.            | Under cultivation. |                                                                                                                                            |                                                                                                       | Rams.                                | Ewes.                            | Lambs.                          |
|                                                | (2)               | (3)                |                                                                                                                                            |                                                                                                       | (6)                                  | (7)                              | (8)                             |
| (1)                                            | (2)               | (3)                | (4)                                                                                                                                        | (5)                                                                                                   | (6)                                  | (7)                              | (8)                             |
| Livestock Research Station, Hosur Cattle Farm. | 1,659.91          | 1,195.19           | To evolve white woolly sheep better in quality and quantity of fleece yield as well as in the carcass weight than the local Bellary sheep. | Bellary ..<br>Bikanir ..<br>Bikanir x Bellary ..<br>Nilgiris ..<br>Nilgiris x Bellary ..<br>Mandya .. | 5<br>22<br>12<br>3<br>1<br>8         | 13<br>89<br>38<br>..<br>..<br>65 | 2<br>56<br>44<br>..<br>..<br>50 |
| Combined Sheep and Cattle Farm, Kurukuppi.     | 384.0             | 172                | To improve Bellary type of sheep and issue of rams.                                                                                        | Bellary ..<br>Bikanir ..<br>Bikanir x Bellary ..                                                      | 7<br>5<br>10                         | 169<br>..<br>52                  | 33<br>..<br>72                  |
| Sheep Farm, Dundasale, Ootacamund.             | 600.0             | 10.0               | To improve the Nilgiri sheep.                                                                                                              | Nilgiris ..                                                                                           | 82                                   | 223                              | 101                             |

Number of rams issued during the period.

Average wool yield for the period.

| Name and address of the farm.                  | Number of rams issued during the period. |            |                   | Average wool yield for the period. |         |         | Remarks.                                 |
|------------------------------------------------|------------------------------------------|------------|-------------------|------------------------------------|---------|---------|------------------------------------------|
|                                                | Period under report.                     | Last year. | Year before last. | Rams.                              | Ewes.   | Lambs.  |                                          |
|                                                | (9)                                      | (10)       | (11)              | (12)                               | (13)    | (14)    |                                          |
| Livestock Research Station, Hosur Cattle Farm. | ..                                       | 5          | 12                | LB. OZ.                            | LB. OZ. | LB. OZ. | (15)                                     |
|                                                | ..                                       | 6          | ..                | 1 15                               | 0 15    | 1 5     |                                          |
|                                                | ..                                       | ..         | 8                 | 2 15                               | 1 7     | 1 12    |                                          |
|                                                | ..                                       | ..         | ..                | 2 13                               | 1 7     | 1 2     |                                          |
|                                                | ..                                       | ..         | ..                | 0 10                               | ..      | ..      |                                          |
|                                                | ..                                       | ..         | ..                | ..                                 | 0 13    | ..      |                                          |
|                                                | ..                                       | ..         | ..                | ..                                 | ..      | ..      | Adults were not shorn during the period. |
| Combined Sheep and Cattle Farm, Kurukuppi.     | 15                                       | ..         | 45                | 1 1                                | 0 7     | 0 7     |                                          |
|                                                | ..                                       | 1          | ..                | 1 8                                | ..      | ..      |                                          |
| Sheep Farm, Dundasale, Ootacamund.             | 1                                        | ..         | 6                 | 2 5                                | 1 2     | 1 4     |                                          |
|                                                | ..                                       | ..         | ..                | ..                                 | 1 0     | 1 03    | Adults were not shorn during the period. |

NOTE.—Figures furnished in the table relate to the composite State only for the first six months.

TABLE XI (c).—Statement showing the location and other particulars of Livestock Farms in the State of Madras during the period from 1st April to 30th September 1953.

| Name and address of the farm.     | Area of farm. |                    | Purpose of the farm.                                                                                                             | Breed.                   | Strength of the herd in each breed. |         |        |
|-----------------------------------|---------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------|---------|--------|
|                                   | Total.        | Under cultivation. |                                                                                                                                  |                          | Buck.                               | Does.   | Kids.  |
|                                   | (2)           | (3)                |                                                                                                                                  |                          | (6)                                 | (7)     | (8)    |
| (1)                               | (2)           | (3)                | (4)                                                                                                                              | (5)                      | (6)                                 | (7)     | (8)    |
|                                   | AOS.          | AOS.               |                                                                                                                                  |                          |                                     |         |        |
| District Livestock Farm, Malabar. | 381.28        | 152.17             | To determine the suitability of the Malabar goats to thrive in the local climatic and environmental conditions by pure breeding. | Tellichery. Kutch cross. | 1<br>2                              | 3<br>22 | 7<br>9 |

Number of bucks issued during

Average lactation yield for the herd.

| Name and address of the farm.     | Number of bucks issued during |            |                   | Records averaged. | Average lactation yield for the herd. |               |              |
|-----------------------------------|-------------------------------|------------|-------------------|-------------------|---------------------------------------|---------------|--------------|
|                                   | Period under report.          | Last year. | Year before last. |                   | Milk.                                 | Days in milk. |              |
|                                   | (9)                           | (10)       | (11)              |                   | (13)                                  | (14)          | (15)         |
| District Livestock Farm, Malabar. | ..                            | 1          | 5                 | ..                | 216.12<br>369.17                      | 66.5<br>156.2 | 85.0<br>71.8 |

NOTE.—Figures furnished in the table relate to the composite State only for the first six months.

TABLE XI (d).—Statement showing the location and other particulars of Madras during the period from

| Name and address of the farm.                                         | Area of the farm. |                    | Purpose of the farm and stock.                                                                                  | Poul-<br>Number of birds in each breed.                         |                           |                            |                             |
|-----------------------------------------------------------------------|-------------------|--------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|---------------------------|----------------------------|-----------------------------|
|                                                                       | Total.            | Under cultivation. |                                                                                                                 | Breed.                                                          | Cocks.                    | Hens.                      | Chickens.                   |
|                                                                       | (1)               | (3)                |                                                                                                                 | (5)                                                             | (6)                       | (7)                        | (8)                         |
|                                                                       | ACS.              | ACS.               |                                                                                                                 |                                                                 |                           |                            |                             |
| Livestock Research Station, Hosur Cattle Farm.                        | 1,669.91          | 1,195.19           | Supply of hatching eggs and breeding stock of exotic varieties to the public, Poultry Demonstration Units, etc. | W.L.H. ..<br>R.I.R. ..<br>B.M. ..<br>Astrolops. ..              | 5<br>13<br>2<br>Nil.      | 47<br>75<br>12<br>..       | 267<br>408<br>82<br>1       |
| Livestock Research Station, Guntur.                                   | 1357.06           | 210.84             | Supply eggs and birds to the public.                                                                            | R.I.R. ..                                                       | ..                        | 38                         | 152                         |
| District Poultry Farm attached to Dairy-cum-Bull Farm, Visakhapatnam. | 165               | 120                | Supply eggs and birds, etc.                                                                                     | W.L.H. ..<br>R.I.R. ..<br>Desi ..                               | 7<br>9<br>..              | 26<br>39<br>2              | 103<br>167<br>..            |
| District Livestock Farm, Kolla, South Kanara.                         | 788               | 650                | Do.                                                                                                             | R.I.R. ..<br>W.L.H. ..<br>R.I.R. ..<br>Desi cross. }<br>Desi .. | 14<br>3<br>..<br>..<br>.. | 45<br>23<br>11<br>..<br>6  | 103<br>73<br>..<br>..<br>8  |
| District Poultry Farm, Chittoor.                                      | 13.91             | ..                 | Do.                                                                                                             | W.L.H. ..<br>R.I.R. ..                                          | 3<br>2                    | 22<br>4                    | 111<br>65                   |
| District Poultry Farm, Cuddapah.                                      | 18.16             | 12                 | Do.                                                                                                             | R.I.R. ..<br>W.L.H. ..                                          | 3<br>1                    | 34<br>12                   | 197<br>96                   |
| District Poultry Farm, Cannanore.                                     | 28.33             | 1/2                | Do.                                                                                                             | R.I.R. ..<br>W.L.H. ..                                          | 6<br>2                    | 78<br>33                   | 345<br>90                   |
| Poultry Research Station, Teynampet, Madras.                          | 9.97              | 100 cents          | Research work on poultry and supply of birds and eggs.                                                          | W.L.H. ..<br>R.I.R. ..<br>B.M. ..<br>L.S. ..<br>Indigenous ..   | 8<br>10<br>4<br>3<br>4    | 33<br>48<br>22<br>15<br>18 | 84<br>64<br>185<br>34<br>67 |

W.L.H. = White Leghorn.

R.I.R. = Rhode Island Red.  
L.S. = Light Sussex.

B.M. = Black Minorca.

NOTE.—Figures furnished in the table relate to the

particulars of Livestock Farms in the State  
1st April to 30th September 1953—cont.

try.

| Number of cockerels issued for breeding during the period. |                            |                            | Number of hatching eggs sold during the period. |            |                   | Average egg yield per hen for the half year. |
|------------------------------------------------------------|----------------------------|----------------------------|-------------------------------------------------|------------|-------------------|----------------------------------------------|
| Period under report.                                       | Last year.                 | Year before last.          | Period under report.                            | Last year. | Year before last. |                                              |
| (9)                                                        | (10)                       | (11)                       | (12)                                            | (13)       | (14)              |                                              |
| 5<br>13<br>12<br>..                                        | 7<br>11<br>4<br>..         | 6<br>7<br>18<br>..         | 1,312                                           | 2,540      | 993               | 70.4<br>97.1<br>70.3<br>..                   |
| 41                                                         | 26                         | 4                          | 348                                             | 1,269      | 436               | 64                                           |
| 19<br>21<br>..                                             | 47<br>..<br>..             | 6<br>5<br>..               | 807                                             | 2,503      | 406               | 57.84<br>70.8<br>39.60                       |
| 52<br>14<br>..<br>..<br>..                                 | 39<br>15<br>..<br>..<br>.. | ..<br>..<br>..<br>..<br>.. | 367                                             | 1,741      | 400               | 50.1<br>54.7<br>71.6<br>48.3                 |
| 6<br>4<br>..                                               | 14<br>..<br>..             | 34<br>..<br>..             | 116                                             | 263        | 660               | 42.0<br>40.0                                 |
| 31<br>29<br>..                                             | 148<br>91<br>..            | ..<br>..<br>..             | 347                                             | 27,86      | 271               | 66.0<br>72.0                                 |
| 12<br>48<br>..                                             | ..<br>65<br>..             | ..<br>56<br>..             | 2,735                                           | 2,324      | 1,179             | 49.8<br>70.6                                 |
| 76<br>55<br>44<br>24<br>..                                 | 977                        | 687                        | 743                                             | 5,197      | 4,191             | 38.2<br>36.3<br>36.8<br>37.5<br>31.8         |

composite State, only for the first six months.

## Statement showing receipts and disposal of eggs in Poultry Units for the period 1st April to 30th September 1953.

| Serial number and name of unit. | Breed of poultry.                   | Balance of eggs on 1st April 1953. | Number of eggs.        |            |                    |                 |                   | Broken and fed to chicks. | Transferred. | Balance of eggs on 30th September 1953. |
|---------------------------------|-------------------------------------|------------------------------------|------------------------|------------|--------------------|-----------------|-------------------|---------------------------|--------------|-----------------------------------------|
|                                 |                                     |                                    | Received from outside. | Collected. | Sold for hatching. | Sold for table. | Set for hatching. |                           |              |                                         |
| (1)                             | (2)                                 | (3)                                | (4)                    | (5)        | (6)                | (7)             | (8)               | (9)                       | (10)         | (11)                                    |
| 1 Visakhapatnam                 | B.M.                                | ..                                 | ..                     | 231        | 209                | ..              | 22                | ..                        | ..           | NIL.                                    |
| 2 Rajahmundry                   | Desi                                | ..                                 | ..                     | 64         | ..                 | 64              | ..                | ..                        | ..           | NIL.                                    |
| 3 Kakinda                       | R.I.R.                              | ..                                 | ..                     | 390        | 101                | 250             | 20                | 23                        | ..           | ..                                      |
| 4 Amalapuram                    | B.M.                                | 2                                  | ..                     | 29         | 4                  | 27              | ..                | ..                        | ..           | ..                                      |
| 5 Ongole                        | W.L.H.                              | 3                                  | ..                     | 229        | 124                | 89              | 19                | ..                        | ..           | ..                                      |
| 6 Nellore                       | Desi                                | ..                                 | ..                     | 34         | ..                 | 34              | ..                | ..                        | ..           | ..                                      |
| 7 Cuddapah                      | W.L.H.                              | 3                                  | ..                     | 30         | 4                  | 26              | ..                | ..                        | ..           | 3                                       |
| 8 Badvel                        | R.I.R.                              | ..                                 | ..                     | 165        | ..                 | 165             | ..                | ..                        | ..           | ..                                      |
| 9 Kurnoor                       | R.I.R.                              | ..                                 | ..                     | 143        | ..                 | 143             | ..                | ..                        | ..           | ..                                      |
| 10 Nandyal                      | B.M.                                | ..                                 | ..                     | 127        | 87                 | ..              | 22                | 15                        | ..           | 3                                       |
| 11 Baganapalle                  | Desi                                | ..                                 | ..                     | 6          | ..                 | ..              | ..                | ..                        | ..           | ..                                      |
| 12 Hindupur                     | B.M.                                | ..                                 | ..                     | 326        | 163                | 54              | 94                | 13                        | ..           | ..                                      |
| 13 Kancheepuram                 | Desi                                | ..                                 | ..                     | 10         | ..                 | 10              | ..                | ..                        | ..           | ..                                      |
| 14 Kalyampundi                  | W.L.H.                              | ..                                 | ..                     | 234        | 47                 | 86              | 95                | 2                         | ..           | 4                                       |
| 15 Kalakurichi                  | R.I.R.                              | 24                                 | ..                     | 1,039      | 567                | 308             | ..                | 29                        | ..           | 9                                       |
| 16 Raipet                       | R.I.R.                              | 10                                 | ..                     | 159        | 70                 | 48              | 33                | 11                        | ..           | 7                                       |
| 17 Tanjore                      | B.M.                                | ..                                 | ..                     | 34         | ..                 | 29              | ..                | 5                         | ..           | ..                                      |
| 18 Nagapattinam                 | W.L.H.                              | ..                                 | ..                     | 176        | 8                  | 129             | ..                | 11                        | ..           | 28                                      |
| 19 Tiruchirappalli              | Desi                                | ..                                 | ..                     | 22         | 14                 | ..              | 7                 | 3                         | ..           | ..                                      |
| 20 Talakulam                    | B.M.                                | ..                                 | ..                     | 238        | 4                  | 237             | ..                | 7                         | ..           | 5                                       |
| 21 Periyakulam                  | W.L.H.                              | 10                                 | ..                     | 1,724      | 549                | 760             | 36                | 354                       | ..           | 125                                     |
| 22 Kodalkanal                   | R.I.R.                              | 4                                  | ..                     | 513        | 274                | 166             | 36                | 42                        | ..           | 4                                       |
| 23 Devakottai                   | W.L.H.                              | ..                                 | ..                     | 1,098      | 875                | 64              | 75                | 30                        | 41           | 3                                       |
| 24 Tirunelveli                  | B.M.                                | ..                                 | ..                     | 328        | 283                | ..              | 27                | 4                         | ..           | 14                                      |
| 25 Salem                        | Desi                                | ..                                 | ..                     | 12         | ..                 | 12              | ..                | ..                        | ..           | ..                                      |
| 26 Pollachi                     | R.I.R.                              | ..                                 | ..                     | 208        | 176                | 3               | 23                | 3                         | ..           | 3                                       |
| 27 Coonoor                      | B.M.                                | 22                                 | ..                     | ..         | 22                 | ..              | ..                | ..                        | ..           | ..                                      |
| 28 Ootacamund                   | R.I.R.                              | ..                                 | ..                     | 65         | 54                 | ..              | ..                | 6                         | ..           | 5                                       |
| 29 Dharpuram                    | W.L.H.                              | 9                                  | 535                    | 183        | 101                | 610             | 16                | 5                         | ..           | ..                                      |
| 30 Kozhikode I.                 | Desi                                | ..                                 | ..                     | 22         | ..                 | 20              | ..                | 1                         | ..           | 1                                       |
| 31 Mangalore                    | R.I.R.                              | 12                                 | ..                     | 790        | 437                | 17              | 288               | 36                        | ..           | 24                                      |
| 32 Vijayavada                   | Desi                                | 1                                  | ..                     | 84         | ..                 | 72              | ..                | 2                         | ..           | 11                                      |
| 33 Bellary                      | B.M.                                | 2                                  | ..                     | 828        | 637                | 125             | 51                | 8                         | ..           | 9                                       |
| 34 Adoni                        | Desi                                | 3                                  | ..                     | 95         | ..                 | 83              | 13                | ..                        | ..           | 2                                       |
| 35 Chittoor                     | W.L.H.                              | 20                                 | ..                     | 1,000      | 877                | 107             | 153               | 50                        | ..           | 33                                      |
| 36 Madanapalle                  | W.L.H.                              | ..                                 | ..                     | 61         | ..                 | 48              | ..                | 5                         | ..           | 8                                       |
| 37 Cuddalore                    | Desi                                | 21                                 | ..                     | 892        | 325                | 285             | 293               | 21                        | ..           | 39                                      |
| 38 Erode                        | R.I.R.                              | 16                                 | ..                     | 265        | 135                | 91              | 22                | 5                         | ..           | 28                                      |
| 39 Tiruppur                     | R.I.R.                              | 37                                 | ..                     | 1,383      | 654                | 702             | 29                | 15                        | ..           | 20                                      |
| 40 Eluru                        | R.I.R.                              | 4                                  | ..                     | 977        | 561                | 372             | 42                | 6                         | ..           | ..                                      |
|                                 | B.M.                                | 6                                  | ..                     | 160        | 101                | 46              | 10                | 2                         | ..           | 1                                       |
|                                 | W.L.H.                              | ..                                 | ..                     | ..         | ..                 | ..              | 6                 | ..                        | ..           | ..                                      |
|                                 | B.M.                                | 3                                  | ..                     | 612        | 269                | 160             | 163               | 23                        | ..           | ..                                      |
|                                 | W.L.H.                              | 36                                 | ..                     | 1,575      | 850                | 879             | 11                | 42                        | ..           | 29                                      |
|                                 | W.L.H.                              | 9                                  | ..                     | 264        | 120                | ..              | 106               | 15                        | ..           | 32                                      |
|                                 | W.L.H.                              | 29                                 | ..                     | 2,092      | 818                | 586             | 540               | 14                        | ..           | 14                                      |
|                                 | R.I.R.                              | 8                                  | ..                     | 815        | 180                | 236             | 383               | 33                        | ..           | 11                                      |
|                                 | Did not function during the period. | ..                                 | ..                     | ..         | ..                 | ..              | ..                | ..                        | ..           | ..                                      |
| Total                           | ..                                  | 404                                | 535                    | 19,818     | 9,277              | 7,230           | 2,726             | 1,006                     | 41           | 477                                     |

Statement showing the receipts and disposal of Birds in Poultry Demonstration Units during the period 1st April to 30th September 1953.

## ADMINISTRATION REPORT OF THE

| Name of Veterinary Institution. | Breed.  | Stock on 1st April 1953. | Received by hatch.                              | Received from outside. | Sold for breeding. | Sold for table. | Transfers. | Deaths and destructions. | Stock on 30th September 1953. | Receipts.    | Expenditure. |
|---------------------------------|---------|--------------------------|-------------------------------------------------|------------------------|--------------------|-----------------|------------|--------------------------|-------------------------------|--------------|--------------|
| (1)                             | (2)     | (3)                      | (4)                                             | (5)                    | (6)                | (7)             | (8)        | (9)                      | (10)                          | (11)         | (12)         |
| 1 Vaakhatnam                    | B.M.    | 27                       | 5                                               | ..                     | 9                  | ..              | ..         | 6                        | 17                            | RS. A. P.    | RS. A. P.    |
| 2 Rajahmundry                   | R.I.R.  | 87                       | 42                                              | ..                     | 30                 | ..              | 30         | 27                       | 42                            | 110 8 0      | 134 12 3     |
| 3 Kakinda                       | B.M.    | 15                       | ..                                              | 2                      | 4                  | ..              | ..         | 1                        | 12                            | 123 8 0      | 297 13 9     |
| 4 Amalapuram                    | Closed  | ..                       | ..                                              | ..                     | ..                 | ..              | ..         | ..                       | ..                            | 21 4 0       | 117 3 6      |
| 5 Vijayavada                    | R.I.R.  | 32                       | 14                                              | ..                     | ..                 | ..              | ..         | 7                        | 39                            | 184 5 0      | 194 3 9      |
| 6 Ongole                        | W.L.H.  | 53                       | ..                                              | ..                     | 1                  | ..              | 1          | ..                       | 51                            | 72 2 0       | 74 9 0       |
| 7 Bellary                       | Desi    | 3                        | 2                                               | ..                     | ..                 | ..              | ..         | 2                        | 19                            | 31 0 0 {N.R. | 324 13 0     |
| 8 Adoni                         | R.I.R.  | 9                        | 4                                               | 8                      | ..                 | ..              | ..         | ..                       | 4                             | ..           | 50 0 0       |
| 9 Cuddapah                      | Desi    | 20                       | ..                                              | ..                     | ..                 | ..              | 20         | ..                       | ..                            | ..           | ..           |
| 10 Badvel                       | W.L.H.  | 7                        | ..                                              | ..                     | ..                 | ..              | 7          | ..                       | 12                            | 22 14 0      | 107 10 8     |
| 11 Kurnool                      | R.I.R.  | 7                        | 7                                               | ..                     | ..                 | ..              | ..         | 1                        | 13                            | 17 14 0      | 105 14 11    |
| 12 Nandyal                      | B.M.    | 95                       | 8                                               | 22                     | 11                 | ..              | ..         | 11                       | 48                            | 86 14 0      | 218 13 6     |
| 13 Banganapalle                 | Desi    | 37                       | 12                                              | 2                      | 25                 | ..              | ..         | 7                        | 17                            | 59 12 0      | 300 0 0      |
| 14 Nellore                      | W.L.H.  | 5                        | ..                                              | ..                     | ..                 | ..              | ..         | ..                       | 5                             | 22 8 0       | 130 5 4      |
| 15 Chittoor                     | Desi    | 32                       | 17                                              | ..                     | 22                 | ..              | ..         | 6                        | 11                            | ..           | ..           |
| 16 Madanapalle                  | W.L.H.  | 11                       | 11                                              | ..                     | 17                 | ..              | ..         | 1                        | 4                             | ..           | ..           |
| 17 Kancheepuram                 | W.L.H.  | 35                       | Transferred to District Poultry Farm, Chittoor. | ..                     | ..                 | ..              | ..         | ..                       | 52                            | 283 10 0     | 264 11 9     |
| 18 Kalyampundi                  | Desi    | 59                       | 26                                              | ..                     | 20                 | ..              | ..         | 13                       | 3                             | 102 5 0      | 229 2 9      |
| 19 Ranipet                      | B.M.    | 3                        | ..                                              | 8                      | 15                 | ..              | ..         | 13                       | 48                            | 27 3 6 {R.   | 154 9 6      |
| 20 Tanjore                      | B.M.    | 46                       | 22                                              | ..                     | 2                  | ..              | ..         | 8                        | 19                            | 1 4 0        | ..           |
| 21 Nagapattinam                 | R.I.R.  | 20                       | 9                                               | 1                      | 3                  | ..              | ..         | 4                        | 9                             | 43 11 0 {R.  | 139 4 3      |
|                                 | Desi    | 16                       | ..                                              | ..                     | 4                  | ..              | ..         | ..                       | 0                             | 7 8 0        | ..           |
|                                 | W.L.H.  | 6                        | ..                                              | ..                     | ..                 | ..              | ..         | 4                        | 2                             | 29 6 0       | 52 7 0       |
|                                 | Country | 54                       | 31                                              | ..                     | 16                 | ..              | ..         | 19                       | 50                            | 311 10 0     | 314 10 9     |
|                                 | R.I.R.  | 41                       | 12                                              | 1                      | 11                 | ..              | ..         | 8                        | ..                            | 110 3 3      | 477 1 3      |
|                                 | Country | 3                        | ..                                              | 2                      | ..                 | ..              | ..         | 9                        | 34                            | ..           | ..           |

|                    |         |       |       |     |     |    |     |     |       |               |           |
|--------------------|---------|-------|-------|-----|-----|----|-----|-----|-------|---------------|-----------|
| 22 Cuddalore       | W.L.H.  | 19    | ..    | 27  | 2   | 2  | ..  | 11  | 31    | 60 6 6 {N.R.  | 280 12 0  |
| 23 Kallakurichi    | B.M.    | 29    | ..    | ..  | 7   | 2  | ..  | 2   | 18    | 49 6 0 {N.R.  | 117 12 6  |
| 24 Talakulam       | W.L.H.  | 56    | 39    | ..  | 2   | 7  | ..  | 12  | 74    | 258 6 0       | 442 1 6   |
| 25 Periyakulam     | B.M.    | 11    | 14    | 12  | ..  | 10 | ..  | ..  | 27    | 78 4 0        | 108 15 9  |
| 26 Kodakanal       | R.I.R.  | 23    | 8     | ..  | 5   | .. | ..  | 7   | 19    | 76 0 0        | 221 13 8  |
| 27 Devakottai      | R.I.R.  | 10    | ..    | ..  | ..  | 3  | ..  | 1   | 12    | 12 0 0        | 55 6 3    |
| 28 Tirunelveli     | R.I.R.  | ..    | ..    | 12  | ..  | .. | ..  | ..  | 12    | 13 8 0        | 18 9 3    |
| 29 Salem           | W.L.H.  | 26    | 8     | ..  | 2   | 8  | ..  | 19  | 5     | 74 3 9        | 84 11 3   |
| 30 Coonoor         | Desi    | 59    | 63    | 29  | 21  | 2  | 7   | 16  | 105   | 236 12 6      | 493 11 9  |
| 31 Ootacamund      | B.M.    | 6     | ..    | 3   | 15  | .. | 7   | 9   | 73    | 253 6 0       | 402 3 0   |
| 32 Pollachi        | W.L.H.  | 33    | 34    | 32  | 2   | .. | ..  | 8   | 62    | 403 4 0       | 357 7 9   |
|                    | Country | 75    | 128   | 7   | 140 | .. | ..  | 2   | 4     | ..            | ..        |
|                    | R.I.R.  | 11    | 19    | ..  | 23  | .. | ..  | 2   | ..    | ..            | ..        |
|                    | W.L.H.  | 15    | 13    | ..  | 6   | .. | ..  | ..  | ..    | ..            | ..        |
|                    | Country | 4     | ..    | ..  | ..  | .. | ..  | ..  | ..    | ..            | ..        |
| 33 Erode           | W.L.H.  | 84    | 250   | 4   | 166 | 10 | 21  | 7   | 134   | 1,024 4 0     | 2,133 5 3 |
| 34 Tiruppur        | R.I.R.  | 45    | 73    | 1   | 18  | .. | 5   | 3   | 93    | ..            | ..        |
| 35 Dharampuram     | W.L.H.  | 82    | 133   | 3   | 91  | .. | 6   | 34  | 87    | 311 2 9 {N.R. | 150 1 0   |
| 36 Mangalore       | R.I.R.  | 46    | 21    | ..  | 21  | .. | ..  | 3   | 43    | ..            | 175 7 9   |
| 37 Kozhikode       | Desi    | 14    | 4     | ..  | ..  | .. | ..  | 18  | ..    | 197 0 0       | 568 12 1  |
| 38 Eluru           | R.I.R.  | 12    | ..    | ..  | ..  | .. | 15  | 2   | ..    | ..            | ..        |
| 39 Tiruchirappalli | Desi    | 15    | ..    | ..  | ..  | .. | ..  | ..  | ..    | ..            | ..        |
| 40 Hindupur        | Closed  | ..    | ..    | ..  | ..  | .. | ..  | ..  | ..    | ..            | ..        |
|                    | R.I.R.  | 60    | 31    | 12  | 26  | .. | 12  | 18  | 45    | 310 6 0       | 235 12 0  |
|                    | Country | 1,433 | 1,073 | 200 | 742 | 44 | 209 | 320 | 1,391 | 5,036 9 6     | 9,555 0 3 |
| Total              |         | 1,433 | 1,073 | 200 | 742 | 44 | 209 | 320 | 1,391 | 5,036 9 6     | 9,555 0 3 |

NOTE.—B.M. = Black Minorca.

W.L.H. = White Leghorn.

R.I.R. = Rhode Island Red.

N.R. = Non-Recurring. R. = Recurring.

MADRAS,

V. R. RAJAGOPALAN,  
Director of Animal Husbandry.

7th August 1954.

# ADMINISTRATION REPORT OF THE MADRAS ANIMAL HUSBANDRY DEPARTMENT (RESIDUARY STATE) FROM 1ST OCTOBER 1953 TO 31ST MARCH 1954.

## I. GENERAL

### *Livestock.*

**Farms.**—The incidence and distribution of rains during the period were favourable and the growth of crops satisfactory. The farms opened in recent years have not yet been fully established with all the facilities and equipment for successful raising of livestock.

During the period under report a total of 40 breeding bulls were issued from the four livestock farms of this State. As a Pongal concession pedigree breeding bulls were offered for sale to the bona fide ryots at a concessional rate and 13 bulls were sold. The number of approved bulls at stud in this State during the period was 958 and they performed 28,128 services in all. In addition 12,729 animals were artificially inseminated. Five thousand four hundred and thirty-six calves out of the 7,399 calves born to these bulls were inspected.

The Kangayam Cattle Improvement Scheme sponsored by the Indian Council of Agricultural Research with a view to improve the milking qualities of the Kangayam cow without impairing the draught qualities of the male by selected breeding and management continued to function during the period under report.

**Key Village scheme.**—Two more centres were opened. Besides six Key Farm Centres in private institutions continued to function during the period.

**Salvage scheme.**—One hundred and three cows after calving and 32 cows before calving were salvaged and returned to their owners. There were good rains and sufficient grazing was available in the farm during the period.

**Artificial insemination centres.**—Twelve thousand seven hundred and twenty-nine inseminations were done and 516 calves born through these inseminations were inspected.

The different schemes on livestock improvement working in the State continued to function during the period.

The Sheep Farm at Ootacamund was working with a flock of 394 at the end of the period, silage making was carried out for the first time in the farm. Perennial rye and tuber grass which are of American origin were tried in the farm with great success and they have been extended in the field.

The "Madras Sheep Breeding Scheme" sponsored by the Indian Council of Agricultural Research is being run by this State in addition to the normal work of sheep breeding that had been going in the Livestock Research Station, Hosur Cattle Farm. Mandya flock of sheep were also introduced in this farm under the Five-Year Plan in order to improve the mutton qualities of local sheep.

Out of six Sheep Shearing and Demonstration Units working in the composite State, three remained in this State and continued to function at Coimbatore, Madurai and Cuddalore during the period.

The grading scheme for mutton sheep introduced in Salem district continued to function during the period with 48 rams. Breeding of Tellicherry goats at the District Livestock Farm, Malabar, and the scheme for the improvement of milch goats in South Kanara district also continued to function.

The working of the Poultry Farms and the Demonstration Units in Veterinary Institutions shows an improvement with an increase in yield and reduction in mortality and it is expected that the record of work in the following year will be still better. Besides the Government poultry farms and units in the State a large

number of private persons continued to rear up exotic breeds of poultry. With a view to improve horse and pony breeding in the State, Arab stallions were stationed at stud in Coimbatore and Salem districts.

**Rinderpest.**—Except for stray outbreaks in Madras and Chingleput districts the disease has been completely eradicated from this State. However 79,055 animals were protected against the disease in the clean areas alone as a precautionary measure. There is a proposal to have a few quarantine stations at the border districts to prevent the ingress of the disease into this State.

### *Veterinary Health Service.*

A total of one lakh twenty thousand six hundred and seventeen in and out patients were treated and 20,215 castrations were done in the Veterinary Institutions of this State. Seventy-one thousand one hundred and twenty-two cases of contagious and non-contagious diseases were treated and 25,360 castrations were done by the itinerating staff during the period.

### *Veterinary Biological and Research Institute, Ranipet.*

This Institute continued to function satisfactorily during the period. The Institute got equipment under the UNESCO International coupon Scheme:—

- a Spencer stereoscopic microscope,
- a dark field Qubec Colony Counter for bacteria,
- a Spencer's universal microscope lamp on 3 link jack knife and stand attachable to stereoscopic microscope,

and a sharples laboratory super-centrifuge refrigeration unit were purchased under the scheme.

Glycidia seeds and cuttings from the plants available at the Institute were supplied to the Agriculture departmental officers for distribution to ryots to be grown as green manure. The Ranikhet Disease Vaccine section attached to the Madras Veterinary College was transferred to this Institute.

### *Veterinary Education.*

The supplementary examination of the B.V.Sc. Degree course was held during the period and 23 students took the B.V.Sc. Degree. The supplementary examination of the Veterinary and Livestock Inspectors' course was also held during the period. Eighteen students passed the first-year examination and six students passed the final examination for the award of the Diploma in Animal Husbandry.

Two batches of 11 students underwent the post-graduate Refresher course at the Madras Veterinary College.

The first batch of 28 candidates underwent training in Flaying and the second batch of 30 candidates continued to undergo the training in Flaying during the period.

One of the staff members of the College was awarded the Ph.D. Degree of the Madras University and another staff member the D.Sc. Degree of the Andhra University and a third member is pursuing research on Mastitis. Besides three students continued their research in Animal Genetics and Bacteriology.

The students of the College took part in the Inter-collegiate Dramatic contest and music competition and distinguished themselves very creditably.

Six thousand four hundred and eighty-nine both in and out patients were treated with a daily average attendance of 127.0 at the College Hospital. The fees realized during the period were Rs. 7,648-10-9 as against Rs. 7,968-9-6 during the previous half-year.

The number of specimens received during the period under report for examination in the departments of Bacteriology, Pathology, Parasitology and Clinical Laboratory was 5,915.

Gosamvardhana Day during the Gosadan week was celebrated and a "one day cattle show" and an exhibition held during the period in the premises of the Madras Veterinary College.

### *Veterinary Public Health Service.*

During the period under report the services of 77 Veterinary Assistant Surgeons of this department were utilized by the local bodies concerned for meat inspection work. Besides 8 municipalities engaged their own Veterinary Assistant Surgeons for this work. The departmental staff inspected 14,886 cattle, 236,741 sheep, 166,736 goats and 141 pigs anti-mortem. The total number of animals condemned by them was 13,778 and the number of carcasses condemned in whole or part was 12,899 during the period.

Thirty-nine co-operative milk supply unions and societies were also inspected by the departmental staff during the period.

*General.*—The figures furnished in the report and tables relate only to second six months (1st October 1953 to 31st March 1954) of the Residuary State and they cannot be compared with the report of the composite State of the previous year for purposes of review.

## II. STAFF.

### *Administration.*

1. During the period under report I continued to hold the post of the Director of Animal Husbandry, Madras State. I attended the meeting of the Advisory Board of the Indian Council of Agricultural Research held at New Delhi; Second Annual meeting of the Central Council of Gosamvardhana held at New Delhi; attended the meeting of the Expert Committee on the Standardization of Biological Products held at the Madras Veterinary College; All-India Cattle and Poultry Shows held at Bahadurgarh, Rhotak district, Punjab; and acted as one of the Judges in the shows; visited Dehra Dun and received the All-India Jawahar Shield for 1951 awarded by the Government of India to the village Periyaram in Chirakkal taluk, Malabar district, on behalf of the State Government.

2. I was assisted by Sri Bertie A. D'Souza, Deputy Director of Animal Husbandry (Veterinary), on all matters relating to administration other than livestock for the State. He inspected 32 veterinary institutions both hospitals and dispensaries, 19 minor veterinary dispensaries, 10 touring billets and 4 District Veterinary Offices in the State. He inspected the Poultry Farms at Gingee, Katpadi and Kallakurichi. He continued to visit the scenes of various epizootics, checked the efficiency of preventive measures, tightened up control operations more vigorously to arrest diseases and reduce the incidence of mortality in livestock. The work in progress in all the outlying institutions and in the field was checked and detailed instructions were issued wherever necessary to make available an efficient veterinary health service to the farmers.

He attended the Cattle Show and Exhibitions held at the Madras Veterinary College in connexion with Gosamvardhana celebration, which was presided over by the Chief Minister. He attended the Nutrition Conference at Madras. He twice attended the meeting at the Fort St. George, Madras, on Five-Year Plan.

The work of the District Officers and subordinate officers was efficient, their tours adequate and effective in the control of epizootics and livestock development work. Yet more will be done in the development of livestock and veterinary health services with general improvement in our States financial resources.

3. *Gazetted staff.*—The sanctioned strength of the Gazetted Officers in the department came to 51 at the beginning of the period consequent on the formation of Andhra State on 1st October 1953 excluding the post of Lecturer in Bacteriology, Madras Veterinary College, which was held by the Principal, Madras Veterinary College.

In G.O. Ms. No. 778, Agriculture, dated 25th March 1954, one post of Special Officer for Freeze dried vaccines was created on Rs. 260—700 which was not filled up during the period. Thus there were 51 gazetted officers on the roll of this department on 31st March 1954 including the post of the Lecturer in Bacteriology, Madras Veterinary College, held by the Principal, Madras Veterinary College.

4. *Other staff.*—The sanctioned strength of the Veterinary Assistant Surgeons on 31st March 1954 was 289 as detailed in Table IX, as against 490 of the previous year.

## III. EDUCATION.

### *Madras Veterinary College.*

5. (i) *Practical farm training.*—The students of the final B.V.Sc. class went to the Hosur Cattle Farm and other livestock centres for obtaining practical farm training for a period of two months. An important feature in this training for the year is that these students would stay in Bangalore for three days, visiting the Indian Dairy Research Institute, Bangalore, Mysore Serum Institute, and the Hasarghatta Farm. They would also visit the Sheep Farm at Ootacamund and the Central Farm at the Agricultural College, Coimbatore.

(ii) *Scholarships.*—As there were no eligible candidates, five scholarships sanctioned in G.O. Ms. No. 3280, Development, dated 15th July 1953, could not be awarded. The Government in their order Ms. No. 614, Agriculture, dated 4th March 1954, were, however, pleased to continue the scholarship to those students of the Residuary State in the II, III and IV year classes of the B.V.Sc. Degree Course, who were in enjoyment of the same in the year 1952–53 prior to the orders passed in G.O. Ms. No. 3280, Development, dated 15th July 1953, restricting the award of scholarship to five in the future years. As the orders for continuing the scholarship were received very late, by which time the provision made in the budget for meeting expenditure in this regard had been surrendered, the students could not be given the immediate benefit of the continuance of scholarship.

During the year under report, all the 41 students studying in the II year class of the Veterinary and Livestock Inspectors' course were paid a stipend of Rs. 30 each per mensem.

(iii) *Examinations—B.V.Sc. Degree Course.*—During the period under report, the supplementary examination of the B.V.Sc. Degree course was held in October and December 1953 with the following results:—

| B.V.Sc.                  | Number appeared. |           | Number passed. |           |
|--------------------------|------------------|-----------|----------------|-----------|
|                          | Whole.           | By parts. | Whole.         | By parts. |
| Preliminary .. .. .      | 7                | 26        | 4              | 25        |
| Intermediate, Part I ..  | 7                | 44        | 2              | 30        |
| Intermediate, Part II .. | 9                | 42        | 2              | 36        |
| Final .. .. .            | 3                | 34        | ..             | 23        |

Thus, 23 students took the B.V.Sc. Degree during the period under report bringing the total number of students who took the degree during the year 1953–54 to 54.

6. *Veterinary and Livestock Inspector's course.*—The supplementary examination for the Veterinary and Livestock Inspectors' course was held in November 1953 with the following results:—

| Veterinary and Livestock Inspectors' course. |    |    |    | Number appeared. | Number passed. |
|----------------------------------------------|----|----|----|------------------|----------------|
| I year .. .. .                               | .. | .. | .. | 19               | 18             |
| II year .. .. .                              | .. | .. | .. | 8                | 6              |

Thus, six students passed the Final examination of the Veterinary and Livestock Inspectors' course, bringing the total number of students who passed the Final examination for the award of the Diploma in Animal Husbandry of this course during the year 1953-54 to 45.

7. *Course of study*—(i) *Post-graduate Refresher course*.—During the period under report, two more batches of 11 students in all, completed their post-graduate Refresher course training, thus bringing the total to 18 for the whole year.

(ii) *Post-graduate Research (students)*.—The student who was awarded the scholarship of the Madras University continued his research in Animal Genetics during the period under report, while two other honorary Post-graduate Research Students continued to work in the Bacteriology and Genetics departments of this College respectively.

(iii) *Post-graduate Research (staff)*.—One staff member who submitted his thesis on "Staining Techniques of Spermatozoa," was awarded the Ph.D. Degree by the Madras University and another staff member the D.Sc. Degree of the Andhra University and a third member is pursuing research on Mastitis under the guidance and supervision of the Lecturer in Bacteriology. This may be considered a landmark in the improved facilities afforded for conducting Post-graduate Research in the Madras Veterinary College.

(iv) *Flying course*.—During the period under report, the first batch of 28 candidates, i.e., 19 new recruits and 9 butchers, underwent training. The second batch of 30 candidates, i.e., 22 butchers and 8 new recruits, joined the course in February 1954. They are under training.

8. *Hostel, health and athletics*—(i) (a) *Hostel in Madras*.—Hostel accommodation was continued to be provided for 228 students during the period under report inclusive of five students of foreign nationality. As usual two messes—one vegetarian and the other non-vegetarian—continued to function on a moderate monthly dividend of about Rs. 40 each.

The services of the telephone and radio were fully availed of by the inmates of the hostel and so also the facilities provided for playing indoor games such as Carroms, Chess and Table-tennis and outdoor games such as Ring-tennis, Badminton and Volley-ball.

The Hostel Day was celebrated on 22nd November 1953 with Sri V. C. Palaniswamy Gownder, Minister for Animal Husbandry, as the Chief Guest, and the prizes were distributed by him.

(b) *College Hostel in Hosur Cattle Farm*.—On account of suspension of admission of students to the I Year Class of the Veterinary and Livestock Inspectors course, only 38 students of out 41 students of the II Year class availed of the hostel facilities. A vegetarian mess was run by the students themselves under the guidance and control of the Additional Lecturer of the course.

The Annual Day Celebration was held on 18th March 1954 under the presidentship of Sri M. S. Rajendram, retired Additional Lecturer of the course, when Miss A. R. George, I.A.S., Sub-Collector, Hosur, distributed the prizes.

During the period under report, Sri V. C. Palaniswamy Gownder, Minister for Animal Husbandry, and Sir Thomas Dalling accompanied by the Director of Animal Husbandry, Madras, visited the hostel and addressed the students.

(c) The discipline of the students in both the hostels was good.

(ii) *Athletics and games*.—Sri I. D. Mantramurthi, Lecturer in Hygiene, continued to be the Sports Secretary for the period under report. The College competed in both the May and Baker and B. V. Narayanaswamy Naidu Cup Foot-ball tournaments conducted by the Madras Medical College and the Pachaiyappa's College respectively.

(iii) *Association*.—The Madras Veterinary College Association kept up the traditions set up in the previous years and continued to play an important role in the extra-curricular activities of the students and staff of this College. During the period under report, the College took part in the Inter-Collegiate Dramatic Contest conducted by the Pachaiyappa's College and a student of the IV year class was

awarded a special prize for his histrionic talents. It also took part in the Inter-Collegiate Music Competition conducted by the Madras Medical College Hostel and a student of First year class was awarded first prize in the light music competition. It arranged for the following film shows by the courtesy of the British Information and United States Information Services :—

- 1 Bottle of milk by the United States Information Services.
- 2 Modern milk marketing by the United States Information Services.
- 3 Western stock buyer by the United States Information Services.
- 4 Towards tomorrow by the United States Information Services.
- 5 Coronation Show by the British Information Services.
- 6 Harvest ahead by the British Information Services.
- 7 Coronation Day by the British Information Services.
- 8 Ayrshire cattle by the British Information Services.
- 9 Thoroughbreds of the world by the British Information Services.
- 10 Bonder weave by the British Information Services.

Under the auspices of the Association, the following days were celebrated :—

- (1) The United Nations Day—Dr. I. M. Azizuddin inaugurated.
- (2) The Republic Day—Hon'ble Minister for Law Sri K. P. Kuttikrishnan Nair addressed and the Principal presided.

The following gentlemen addressed the staff and students of this College under the auspices of the Association :—

- (1) Sir Thomas Dalling, M.A., D.Sc., F.R.C.V.S., F.R.S.E.
- (2) Hon'ble Justice E. E. Mack, on "Livestock and Rural Reconstruction."
- (3) Dr. P. V. Cheriau delivered the Valedictory Address of the Association.

(iv) *Social Service*.—The Madras Veterinary College Students' Social Service League took active part in social service activities.

The College was represented in the National Extension Scheme sponsored by the Central Government.

(v) *Students' bus*.—The College bus was fully utilised by the students for their visits in connection with curricular and extra-curricular activities both in and outside the city.

(vi) *Library*.—During the period under report 238 books were purchased and added to the College Library bringing the total number of books available in the Library to 3,390. There are also 1,446 bound volume of periodicals. Seven journals were subscribed for by the College direct. A few more journals were received from the Indian Council of Agricultural Research, Director of Animal Husbandry, Madras, etc.

This Library was fully utilised by the students, staff and outsiders and in all 2,658 books and periodicals were issued.

(vii) *Visiting Committee*.—The Board of Honorary visitors was reconstituted by Government for a period of one year with Sri N. Nallasenapathy Sarkarai Manradar, Pattagar of Palayakottai, as President. In pursuance of the programme one of the members of the Board visited the Hospital and recorded remarks in the visitors' book.

(viii) *Visitors*.—The following were the prominent gentlemen who visited this College during the period under report :—

- (1) Dr. J. Austin Kerr, M.D., Rockefeller Foundation, Virus Research Centre, Poona.
- (2) Sri Lal A. S. Deo, Deputy Minister, Orissa.
- (3) Sir Thomas Dalling, Chief Veterinary Consultant, F.A.O., Rome.

Dr. J. Austin Kerr and Dr. S. T. Achar, Professor of Pediatrics, Madras Medical College, discussed the problem of Virus Encephalitis in human being with the Principal and requested the help of this College for isolating the virus.

The visit of Sir Thomas Dalling to this College was for the second time during the year. He was entertained to Tea by the Madras Veterinary College Association. He addressed a meeting of the Members of the Association presided over by the Principal.

(ix) *Inspection of Police animals.*—The quarterly Inspection of City Police horses were conducted as usual and necessary treatment and professional advice were given for the care and management of police horses and dogs.

(x) *Society for Prevention of Cruelty to Animals.*—The Society for Prevention of Cruelty to Animals, Madras, admitted 19 cases into this College Hospital for care and treatment for the period under report.

(xi) *Professional papers contributed.*—The following papers were contributed by the members of the staff of the College during the period under report :—

*Bacteriology.*—(1) Studies on the Bacteriology and Pathology of Bovine Endometritis-Hydrogenion concentration of uterine fluids of the cow.—Indian Veterinary Journal, 1954.

(2) Studies on *Pseudomonas aeruginosa* infection in animals—Madras Veterinary College Association Annual Number, 1953-54.

(3) An outbreak of nervous diseases in poultry possibly due to Ranikhet Disease Virus.

(4) Studies on the Bacteriology and Pathology of Bovine Endometritis, its classification and relationship to sterility—Indian Veterinary Journal, 1954.

*Medicine.*—(1) Glycosuria in Rabies.

*Parasitology.*—(1) Observation on Theileriasis among sheep in Madras—Madras Veterinary College Association Annual Number, 1953-54.

(2) A strigeid *Diplostomum duboisi* n.sp. from the Indian kite *Milvus migrans govindsykes*—Indian Veterinary Journal.

(3) Cooperiasis in buffalo calves—Indian Veterinary Journal.

*Pathology.*—(1) Leiomyoma of the heart of the cow—Indian Veterinary Journal.

(2) Survey of Animal Neoplasms in the Madras State—Bovine—Indian Veterinary Journal.

(3) Cancer of the horn in Indian cattle—Madras Veterinary College Association Annual, 1953-54.

*Surgery.*—(1) Ileo-caecal colic investigation in a pup—Madras Veterinary College Annual, 1953-54.

*Nutrition.*—(1) "The Scientific feeding of cattle" was sent for publication in "Dinamani."

(2) "The role of bulk or roughage in the ration of dairy cows and buffaloes"—Indian Veterinary Journal (1954).

*Editing of books.*—Mattuvakkatamum, Mattu Anga Adaialamum; a book in Tamil from ancient manuscripts was edited by Dr. I. M. Azizuddin at the request of the Government Oriental Manuscripts Library, Madras. This book will be of special interest in the present juncture when so much attention is being paid to the regional languages. It is a comprehensive book dealing with diseases of animals and other animal husbandry subjects.

*Reviews.*—(1) A review of the book "Advances in Veterinary Science," Volume I, edited by C. A. Brandley and E. L. Jinghen, Academic Press, New York, 1953, by Sri V. Mahadevan, was published in the Current Science, Bangalore.

(2) The book "Animal Nutrition Research in India" by Dr. K. C. Sen published by Macmillan & Co., and issued under the auspices of Indian Council of Agricultural Research was reviewed by Dr. V. Mahadevan and his review was published in the Current Science, Bangalore.

(xii) *Conferences, Committees, etc.*—Dr. V. Mahadevan, Lecturer in Animal Nutrition, served on the special Sub-Committee of the Animal Nutrition Committee of the Indian Council of Agricultural Research that met at Srinagar, Kashmir, to revise research schemes submitted by State Governments. He served on the Animal Nutrition Committee of the Indian Council of Agricultural Research that was convened at Gwalior to consider the final revised draft memorandum on "Human Nutrition vis-a-vis—Animal Nutrition in India."

Sri C. K. Velayudhan Nair, Lecturer in Pharmacology, served as Corresponding Member to scrutinise the monographs on the British Veterinary Codes recently published under the auspices of the Pharmaceutical Society of Great Britain and his work in this regard was appreciated by the society.

The Research Officer, Madras Helminthiasis Scheme, attended the meeting of the Parasitological Sub-committee of the Animal Diseases and Pests Committee of the Indian Council of Agricultural Research held at Srinagar, Kashmir.

9. *Shows and exhibitions.*—In connection with the celebration of Gosamvardhana Day a one-day cattle show and an exhibition were held. Sri C. Rajagopalachariar, Chief Minister of Madras, after declaring open the Cattle Show and Exhibition visited the various sections along with the Minister for Animal Husbandry and Sri N. Murugesu Mudaliar, Deputy Secretary to Government. The prizes were given away in the evening to the winners of the show by Sri V. C. Palaniswamy Gownder, Minister for Animal Husbandry.

The Exhibition in which all the departments of the College took part was the first of its kind organized by this College and was kept open to the public for two days. Many of the people who had visited the exhibition expressed the view that the items put up were very interesting and instructive.

10. *Hospital.*—The cases treated, operations performed for the years 1951-52, 1952-53, 1953-54, and for the period under report are tabulated below :—

TABLE I.—Cases treated.

|                            | 1951-52. | 1952-53. | 1953-54. | 1953-54<br>(from 1st<br>October<br>1953 to<br>31st March<br>1954). |
|----------------------------|----------|----------|----------|--------------------------------------------------------------------|
| <i>In-patients—</i>        |          |          |          |                                                                    |
| Bovines .. ..              | 130      | 241      | 200      | 105                                                                |
| Equines .. ..              | 73       | 71       | 63       | 26                                                                 |
| Canines and others ..      | 442      | 489      | 441      | 232                                                                |
| <i>Out-patients—</i>       |          |          |          |                                                                    |
| Bovines .. ..              | 3,073    | 4,035    | 4,745    | 2,534                                                              |
| Equines .. ..              | 175      | 154      | 197      | 96                                                                 |
| Canines and others ..      | 4,775    | 6,356    | 7,277    | 3,496                                                              |
|                            | 8,668    | 11,346   | 12,923   | 6,489                                                              |
| Daily average attendance.. | 95.9     | 120.0    | 126.5    | 127.0                                                              |

TABLE II.—Operations.

|                    |       | 1951-52. | 1952-53. | 1953-54. | 1953-54<br>(from 1st<br>October<br>1953 to<br>31st March<br>1954). |        |        |     |
|--------------------|-------|----------|----------|----------|--------------------------------------------------------------------|--------|--------|-----|
|                    |       | Major.   | Minor.   | Major.   | Minor.                                                             | Major. | Minor. |     |
| Bovines            | .. .. | 270      | 30       | 264      | 26                                                                 | 287    | 86     | 145 |
| Equines            | .. .. | 18       | 4        | 16       | 11                                                                 | 13     | 6      | 8   |
| Canines and others | .. .. | 21       | 123      | 14       | 242                                                                | 20     | 278    | 12  |
| Total              | .. .. | 309      | 157      | 294      | 279                                                                | 320    | 370    | 165 |
|                    |       |          |          |          |                                                                    |        |        | 192 |

TABLE III.—Castrations.

|                    |       | 1951-52. | 1952-53. | 1953-54. | 1953-54<br>(from 1st<br>October<br>1953 to<br>31st March<br>1954). |    |
|--------------------|-------|----------|----------|----------|--------------------------------------------------------------------|----|
|                    |       |          |          |          |                                                                    |    |
| Bovines            | .. .. | 9        | 19       | 9        |                                                                    | 5  |
| Equines            | .. .. | 4        | 11       | 1        |                                                                    | 1  |
| Canines and others | .. .. | 22       | 27       | 23       |                                                                    | 10 |
| Total              | .. .. | 35       | 57       | 33       |                                                                    | 16 |

The following table shows the medical and surgical cases treated in the wards of the hospital during the period under report :—

|                                 | Bovines. | Equines. | Canines<br>and<br>others. | Total. |
|---------------------------------|----------|----------|---------------------------|--------|
| <b>Medical cases—</b>           |          |          |                           |        |
| Contagious diseases ..          | 8        | 2        | 519                       | 529    |
| Protozoan diseases ..           | 17       | ..       | 59                        | 76     |
| Diseases of respiratory system. | 68       | 7        | 38                        | 113    |
| Diseases of digestive system.   | 1,085    | 21       | 1,375                     | 2,481  |
| Diseases of circulatory system. | 1        | ..       | 29                        | 30     |
| Diseases of urinary system.     | 10       | 1        | 5                         | 16     |
| Diseases of nervous system.     | 13       | ..       | 138                       | 151    |
| Diseases of generative system.  | 78       | ..       | 40                        | 118    |
| Diseases of locomotor system.   | 1        | 1        | 45                        | 47     |
| Diseases of skin (parasitic).   | 10       | 1        | 53                        | 64     |
| (non-parasitic) .. ..           | 17       | 1        | 302                       | 320    |
| General diseases .. ..          | 50       | 10       | 164                       | 224    |

|                                            |    | Bovines. | Equines. | Canines<br>and<br>others. | Total. |
|--------------------------------------------|----|----------|----------|---------------------------|--------|
| Diseases of unknown origin.                | .. | 33       | ..       | 13                        | 46     |
| Anti-rabic treatment ..                    | .. | 19       | 1        | 122                       | 142    |
| Rabies .. ..                               | .. | 10       | ..       | 69                        | 79     |
| Total ..                                   | .. | 1,420    | 45       | 2,971                     | 4,436  |
| <b>Surgical cases—</b>                     |    |          |          |                           |        |
| Abscess wound, etc. ..                     | .. | 267      | 31       | 202                       | 500    |
| Tumour, cyst, etc. ..                      | .. | 33       | ..       | 61                        | 94     |
| Hernia, prolapse, etc. ..                  | .. | 29       | ..       | 7                         | 36     |
| Diseases of bones ..                       | .. | 42       | 6        | 47                        | 95     |
| Diseases of Horns ..                       | .. | 43       | ..       | ..                        | 43     |
| Diseases of articulation ..                | .. | 30       | 6        | 8                         | 44     |
| Diseases of muscles, tendons, etc.         | .. | 19       | 7        | 8                         | 34     |
| Diseases of vessels and nerves.            | .. | 1        | 1        | 1                         | 3      |
| Diseases of glands ..                      | .. | 124      | ..       | 13                        | 137    |
| Diseases of foot .. ..                     | .. | 19       | 11       | 52                        | 82     |
| Diseases eye, ear, nose, throat.           | .. | 51       | 6        | 111                       | 168    |
| Diseases of urinary and generative system. | .. | 166      | 3        | 35                        | 204    |
| Docking .. ..                              | .. | ..       | ..       | 45                        | 45     |
| Castrations .. ..                          | .. | 6        | ..       | ..                        | 6      |
| Test for pregnancy ..                      | .. | 383      | ..       | ..                        | 383    |
| Received for destruction                   | .. | ..       | 1        | 46                        | 47     |
| Carcasses received for post-mortem.        | .. | 6        | 5        | 121                       | 132    |
|                                            |    | 1,219    | 77       | 757                       | 2,053  |

The following interesting cases were met with at the College Hospital :—

*Small Animal Clinic.*—(i) In this clinic, 3,728 cases were treated. Twelve major operations, 142 minor operations and 10 castrations were performed during the period. The average daily attendance in this clinic was 70.

(ii) *Rabies.*—Forty-two out of 69 dogs admitted were positive for Rabies. One hundred and thirteen dogs were protected against Rabies with Anti-Rabic Vaccine obtained from the Pasteur Institute, Coonoor. The single dose of Avianized Rabies Vaccine was used to protect 9 dogs against Rabies.

(iii) *Distemper.*—Six cases of distemper were treated during the period. Of these, three cases which were brought to the hospital in the early stages were successfully treated with antibiotics and the remaining 3 cases which were brought to the hospital after the onset of secondary complications did not respond to treatment and died.

*Horse ward.*—Out of 122 cases treated in this ward during the period under report, 40 were medical cases and the remaining 82, surgical cases. Most of the medical cases were for disorders of the digestive system. There were 2 cases of broken wind. Two cases of tetanus were treated but both of them ended fatally. Most of the surgical cases were for abscess and wounds. There were 3 cases of worm in the eyes which were relieved surgically. Tracheotomy was performed on one horse. A radical operation was performed in a case of capped elbow in a horse. The daily average attendance in this ward was 12.

**Cattle ward.**—In this ward 2,639 cases were treated during the period under report.

**Contagious disease (i)—Cowpox.**—There were 7 cases of cowpox among the out-patients and the owners were told of the prophylactic measures to be adopted.

**Contagious Bovine Abortion.**—Serum sample of a suspected case of brucellosis was found negative in agglutination test.

(ii) **Non-contagious diseases.**—Most of the animals brought for treatment were for digestive complaints like impaction of the rumen, Tympanitis, Enteritis and Dyspepsia.

**Mastitis.**—During the period under report, 120 animals were brought for treatment of various conditions associated with the mammary gland. The majority were complaints relating to injuries to the teat and occlusion of the teat duct. In a few of these cases "Colombus medicated teat plugs" were tried and found effective. Fifty cases of Mastitis were treated successfully. The routine treatment adopted was infusion of Udolac with penicillin or penicillin in oil and wax. Both were effective. Acute cases responded well with penicillin 'G' Aqueous 2 to 5 lac units, daily.

**Sterility.**—During the period under report, 139 cases were brought for treatment for sterility. The gross percentage of sterility among cows, buffaloes and heifers brought for treatment was found to be 9.25. The commonest causes of sterility was found to be due to inflammation of external genitalia and the incidence of sterility due to this cause was found to be 45 per cent. Endometritis was responsible for about 6 per cent of the cases.

Cystic ovaries were responsible for about 10 per cent of cases. Anoestrus and persistent corpus luteum were responsible for about 14 per cent of cases. Anoestrus probably due to hormonal insufficiency was responsible for 10 per cent while infantile genitalia was responsible for 10 per cent. These cases responded well with administration of germinated gram in feed. Fibrosed ovaries were responsible in about 2 per cent of the cases and 3 per cent was due to cervicitis.

A classified list of sterility met with is furnished hereunder :—

| Anoestrus. |           | Cystic ovaries. |           | Endometritis. |           | Cervicitis. |           | Vaginitis. |           | Other causes. |           |
|------------|-----------|-----------------|-----------|---------------|-----------|-------------|-----------|------------|-----------|---------------|-----------|
| No.        | Per cent. | No.             | Per cent. | No.           | Per cent. | No.         | Per cent. | No.        | Per cent. | No.           | Per cent. |
| 14         | 10        | 14              | 10        | 9             | 6         | 5           | 3         | 61         | 45        | 36            | 26        |

Percentage of sterility seen in cows and heifers.

| Year.                                          | Admissions. | Sterile. | Percentage. |
|------------------------------------------------|-------------|----------|-------------|
| 1951-52                                        | 1,598       | 114      | 7.1         |
| 1952-53                                        | 1,972       | 206      | 10.4        |
| 1953-54 (1st October 1953 to 31st March 1954). | 1,478       | 139      | 9.25        |

**Rabies.**—During the period under report, 6 out of 10 cases admitted were found positive for Rabies. Twenty-seven animals were given Anti-Rabic treatment.

**Nasal granuloma.**—Two cases were treated for Nasal granuloma.

**Protozoan diseases.**—The total number of protozoan cases met with was 17.

**Theileriasis.**—There were 7 cases of Theileriasis all of which responded well with injection of 1 per cent Acriflavine solution. There was an acute case of "Theileriasis" in an English bull which died in spite of the usual treatment. The post-mortem showed characteristic lesions of acute Theileriasis.

**Piroplasmosis.**—One case of Piroplasmosis due to *Babesia bigemina* was treated with Babesan.

**Coccidiosis.**—Nine cases were treated for Coccidiosis with Sulphamezthine.

**Skin diseases.**—Five samples of skin scrapings were examined microscopically of which 2 were found positive for Trichophyton. There were 5 cases of Demodectic mange and 2 cases of Sarcoptic mange.

**Obstetrics.**—During the period under report, there were 25 cases of Dystokia, most of which were due to malpresentation of the foetus. Eighty cases of retention of the after-birth were attended to.

Three hundred and eighty-three cows and buffaloes were examined for pregnancy.

**Shoeing forge.**—The number of horses shod and whose feet were repaired including bullocks was 286 during the period under report. Most of the horses shod and whose feet were repaired belonged to the Madras City Police. The forge plays an important role in the practical training of students in the art of scientific shoeing.

**Fees.**—The number of cases admitted in the College hospital and fee realised during the years 1951-52, 1952-53, 1953-54 and during the period under report are given below :—

| Year.                                          | Number of cases admitted. | Fee realised. |
|------------------------------------------------|---------------------------|---------------|
|                                                |                           | RS. A. P.     |
| 1951-52                                        | 8,688                     | 17,057 14 2   |
| 1952-53                                        | 11,346                    | 19,909 15 3   |
| 1953-54                                        | 12,906                    | 15,617 4 3    |
| 1953-54 (1st October 1953 to 31st March 1954). | 6,489                     | 7,648 10 9    |

**Pharmacy.**—The total number of prescriptions dispensed during the period under report in the Pharmacy was 13,864 of which 124 were for private cases, 1,229 for the horse ward, 4,663 for the cattle ward and 7,848 for the dog ward with a daily average of 76.17.

11. **Laboratories.**—(i) The number of specimens received during the period under report in the Pharmacy was 13,864 of which 124 were from private cases, 1,229 from the horse ward, 4,663 from the cattle ward and 7,848 from the dog ward with a daily average of 76.17.

(ii) The number of specimens received during the period under report for examination in the Departments of Bacteriology, Pathology, Parasitology and the Clinical Laboratory was 5,915 as against 7,240 received and examined during the previous six months. The total received for 1953-54 was 13,155. The sources from which these materials were received are as follows :—

|                                                                                                 |       |
|-------------------------------------------------------------------------------------------------|-------|
| 1 From the staff of the department in the field                                                 | 1,891 |
| 2 From the wards and laboratories of the Madras Veterinary College                              | 2,534 |
| 3 Livestock Research Station and other Farms of the department                                  | 395   |
| 4 Veterinary Investigation Officer, Ranipet, including Assistant Disease Investigation Officers | 162   |
| 5 Corporation of Madras                                                                         | 8     |
| 6 Agricultural Department                                                                       | 3     |
| 7 Forest Department                                                                             | 69    |
| 8 Co-operative Department                                                                       | 28    |
| 9 Private bodies including other States                                                         | 825   |
| Total                                                                                           | 5,915 |

The following table shows the results of the examination of specimens :—

| Serial number and description.          | Number of specimen positive. | Serial number and description.       | Number of specimen positive. |
|-----------------------------------------|------------------------------|--------------------------------------|------------------------------|
| 1 Adenocarcinoma .. ..                  | 1                            | 44 Myoma .. ..                       | 1                            |
| 2 Anæmic changes .. ..                  | 8                            | 45 Myoepithelioma .. ..              | 1                            |
| 3 Anthrax .. ..                         | 19                           | 46 Nasal polyps .. ..                | 3                            |
| 4 Auto-vaccine (for) .. ..              | 6                            | 47 Nephritis .. ..                   | 2                            |
| 5 Avian leucosis complex .. ..          | 33                           | 48 Notæderes sp. .. ..               | 1                            |
| 6 Babesia bigemina .. ..                | 29                           | 49 Oocysts of Eimeria .. ..          | 51                           |
| 7 „ canis .. ..                         | 9                            | 50 Ova of Ancylostomes sp. .. ..     | 350                          |
| 8 „ equi .. ..                          | 1                            | 51 „ Ascaris .. ..                   | 153                          |
| 9 „ gibsoni .. ..                       | 1                            | 52 „ Coteignia sp. .. ..             | 1                            |
| 10 „ motasi .. ..                       | 1                            | 53 „ D. caninum .. ..                | 4                            |
| 11 Basal cell carcinoma .. ..           | 2                            | 54 „ Hymenolepis sp. .. ..           | 1                            |
| 12 Bileduct carcinoma .. ..             | 1                            | 55 „ Moniezia .. ..                  | 1                            |
| 13 Borellia gallinarum .. ..            | 6                            | 56 „ S. nasalis .. ..                | 60                           |
| 14 Blackquarter .. ..                   | 7                            | 57 „ Spirocerca lupi .. ..           | 47                           |
| 15 Bovine lymphangitis .. ..            | 11                           | 58 „ Strongyle sp. .. ..             | 443                          |
| 16 Brucellosis .. ..                    | 1                            | 59 „ Strongyloides-avian. .. ..      | 1                            |
| 17 Carcinoma simplex .. ..              | 1                            | 60 „ Teania sp. .. ..                | 1                            |
| 18 Chemidocoptes sp. .. ..              | 4                            | 61 „ Trematodes .. ..                | 76                           |
| 19 Cystitis .. ..                       | 1                            | 62 „ Trichuris sp. .. ..             | 5                            |
| 20 Cysts and growths .. ..              | 2                            | 63 Papilloma .. ..                   | 3                            |
| 21 Cystic adenofibroma .. ..            | 1                            | 64 Pneumonia .. ..                   | 5                            |
| 22 Dermoid cyst .. ..                   | 1                            | 65 Psoroptes sp. .. ..               | 2                            |
| 23 Demodex .. ..                        | 34                           | 66 Rabies .. ..                      | 44                           |
| 24 Demodex folliculorum .. ..           | 12                           | 67 Rainey's corpuscles .. ..         | 5                            |
| 25 Endo and Ecto parasites .. ..        | 51                           | 68 Rickettsia canis .. ..            | 6                            |
| 26 Enteritis .. ..                      | 3                            | 69 Rickettsia (bovine) .. ..         | 10                           |
| 27 Fibroma .. ..                        | 2                            | 70 Sarcocysts .. ..                  | 5                            |
| 28 Fibro-adenoma .. ..                  | 2                            | 71 Sarcoptes .. ..                   | 15                           |
| 29 Fowl cholera .. ..                   | 2                            | 72 Sporangia of Rhynospodidium .. .. | 2                            |
| 30 Hæmoproteus columbæ .. ..            | 1                            | 73 Seleaceocis gland adenoma. .. ..  | 1                            |
| 31 Hæmorrhagic septicæmia .. ..         | 14                           | 74 Theileria mutans .. ..            | 127                          |
| 32 Helminthic lesions .. ..             | 4                            | 75 Theileria sp. sheep .. ..         | 54                           |
| 33 Hepatazoon canis .. ..               | 13                           | 76 Trichiphyton .. ..                | 26                           |
| 34 Hepatic cirrhosis .. ..              | 3                            | 77 Tuberculosis .. ..                | 1                            |
| 35 Inflammatory tissues .. ..           | 8                            | 78 Trypanosoma evansi .. ..          | 27                           |
| 36 John's disease .. ..                 | 13                           | (bovines). .. ..                     |                              |
| 37 Leiomyoma .. ..                      | 1                            | 79 Trypanosoma evansi .. ..          | 4                            |
| 38 Leiomyofibro-adenoma .. ..           | 1                            | (equines).. ..                       |                              |
| 39 Liver cell carcinoma .. ..           | 1                            | 80 Veneral Sarcoma .. ..             | 3                            |
| 40 Mastitis (milk samples) .. ..        | 58                           |                                      |                              |
| 41 Melanoma .. ..                       | 3                            |                                      |                              |
| 42 Microfilaria .. ..                   | 5                            |                                      |                              |
| 43 Miscellaneous .. ..                  | 6                            |                                      |                              |
|                                         |                              |                                      | 1,925                        |
| Negatives .. ..                         |                              |                                      | 3,494                        |
| Materials of insignificant nature .. .. |                              |                                      | 417                          |
| Materials unfit for examination .. ..   |                              |                                      | 28                           |
| Materials under examination .. ..       |                              |                                      | 51                           |
|                                         |                              |                                      |                              |
|                                         |                              | 1,925                                | [3,990]                      |
| Grand total .. ..                       |                              | 5,915                                |                              |

Diagnostic and Analytical work carried out by various departments of the College.

### Bacteriology Department.

During the period under report, 875 specimens were received in this department for diagnostic work as against 1,272 for the previous six months. The nature of materials received are as shown below :—

|                                                                                 |     |     |
|---------------------------------------------------------------------------------|-----|-----|
| 1. Microscopical examination—                                                   |     |     |
| (i) Smears consisting of blood, pus and tissues.                                | 503 |     |
| (ii) Bowel washings and rectal pinch smears.                                    | 49  | 552 |
| 2. Cultural examination—                                                        |     |     |
| (i) Blood swabs .. ..                                                           | 39  |     |
| (ii) Pus swabs .. ..                                                            | 71  |     |
| (iii) Ear swabs .. ..                                                           | 18  |     |
| (iv) Vaginal and uterine swabs.                                                 | 2   |     |
| (v) Stomach and intestinal contents.                                            | 19  |     |
| (vi) Ascitic fluid and urine                                                    | 3   |     |
| (vii) Tissue swabs .. ..                                                        | 6   |     |
| (viii) Tissues .. ..                                                            | 16  |     |
| (ix) Milk from cases of Mastitis.                                               | 58  | 232 |
| 3. Biological tests—                                                            |     |     |
| (i) Blood and tissue swabs ..                                                   | 21  |     |
| (ii) Tissues .. ..                                                              | 39  |     |
| (iii) Bone pieces, hide fleshings, goat hairs, etc., for issue of certificates. | 7   | 67  |
| 4. Serological test—                                                            |     |     |
| Sera and synovial fluids ..                                                     | 24  | 24  |
| Total .. ..                                                                     | 875 |     |

The following are the results of the examination done on the materials received during the period :—

| Diseases suspected.                                         | Positive. | Negative. | Total. |
|-------------------------------------------------------------|-----------|-----------|--------|
| 1 Anthrax .. ..                                             | 19        | 54        | 73     |
| 2 Blackquarter .. ..                                        | 7         | 35        | 42     |
| 3 Bovine lymphangitis .. ..                                 | 11        | 73        | 84     |
| 4 Brucellosis .. ..                                         | 1         | 23        | 24     |
| 5 Fowl cholera .. ..                                        | 2         | 7         | 9      |
| 6 Hæmorrhagic septicæmia .. ..                              | 14        | 77        | 91     |
| 7 John's disease .. ..                                      | 10        | 37        | 47     |
| 8 Tuberculosis .. ..                                        | 1         | 4         | 5      |
| 9 Materials examined and not belonging to the above groups. | ..        | ..        | 436    |
| 10 Milk .. ..                                               | ..        | ..        | 58     |
| 11 Auto-vaccines .. ..                                      | ..        | ..        | 6      |
| Total .. ..                                                 |           |           | 875    |

*Biological tests.*—Biological tests are conducted with the materials suspected for Anthrax, Blackquarter, etc., with the following results :—

| Diseases.                        | Positive. | Negative. | Total. |
|----------------------------------|-----------|-----------|--------|
| 1 Anthrax .. .. .                | 5         | 38        | 43     |
| 2 Blackquarter .. .. .           | 1         | 16        | 17     |
| 3 Hæmorrhagic septicæmia .. .. . | 2         | 19        | 21     |
| 4 Tuberculosis .. .. .           | 5         | ..        | 5      |
| 5 Encephalitis (Human) * .. .. . | ..        | 6         | 6      |
| 6 Brucellosis .. .. .            | ..        | 2         | 2      |
| 7 Safety test .. .. .            | ..        | ..        | 4      |
|                                  |           |           | —      |
| Total ..                         |           |           | 98     |
|                                  |           |           | —      |

\* This was conducted at the request of the General Hospital authorities and the Virus Research Centre, Poona, which approached the Lecturer in Bacteriology to help them in cultivation of virus from the materials sent for examination from suspected cases.

*Auto-vaccine.*—During the period under report, six auto-vaccines were prepared and supplied and they were as shown below :—

| Kind of animal. | Illness.     | Pseudomonas. | Coli ærogens. | Staphylococci. |
|-----------------|--------------|--------------|---------------|----------------|
| 1 Bovines ..    | Otorrhoea .. | 1            | ..            | ..             |
| 2 Canines ..    | ..           | 3            | ..            | 2              |
|                 |              | —            | —             | —              |
|                 |              | 4            | ..            | 2              |
|                 |              | —            | —             | —              |

#### Pathology Department.

During the period under report, 221 autopsies were performed as detailed hereunder as against 340 during the previous six months.

|                                      |     |
|--------------------------------------|-----|
| Dogs .. .. .                         | 48  |
| Cattle .. .. .                       | 21  |
| Horses .. .. .                       | 10  |
| Donkey .. .. .                       | 1   |
| Cats .. .. .                         | 4   |
| Chakma baboon .. .. .                | 1   |
| Wallaby .. .. .                      | 1   |
| Goat .. .. .                         | 1   |
| Poultry including one Torcan .. .. . | 134 |
|                                      | —   |
| Total ..                             | 221 |
|                                      | —   |

Among the autopsies conducted, the following interesting conditions were met with :—

|                                   |                |
|-----------------------------------|----------------|
| 1 Traumatic pericarditis .. .. .  | Cow.           |
| 2 Tuberculosis .. .. .            | Chakma baboon. |
| 3 Rupture of the liver .. .. .    | Horse.         |
| 4 Vegetative endocarditis .. .. . | Dog.           |
| 5 Suppurative nephritis .. .. .   | Dog.           |

#### Parasitology Department.

The total number of clinical materials received for examination consisting of blood smears, faecal samples, skin scrapings, etc., was 2,419 as against 3,507 examined during the previous six months. The fall in the number of materials

received and examined is due to the decrease in the number of specimens received from Andhra State and the transfer of Kurukuppi Farm of Bellary district to the Mysore State.

#### Physiology Department.

The total number of specimens examined during the period under report was 460 as detailed hereunder. The total number of specimens examined during the previous six months was 353.

| Serial number and nature of specimens. | Canines. | Bovines. | Equines. | Others. | Total. |
|----------------------------------------|----------|----------|----------|---------|--------|
| 1 Urine .. .. .                        | 160      | 29       | 4        | 3       | 196    |
| 2 Blood for total cell count .. .. .   | 29       | 3        | 1        | ..      | 33     |
| 3 Blood for heamoglobin estimation.    | 19       | 2        | ..       | ..      | 21     |
| 4 Blood smears for differential count. | 77       | 66       | 5        | 2       | 150    |
| 5 Serum for calcium estimation ..      | 1        | 27       | ..       | ..      | 28     |
| 6 Serum for phosphorus estimation.     | 1        | ..       | ..       | ..      | 1      |
| 7 Serum for magnesium estimation.      | ..       | 27       | ..       | ..      | 27     |
| 8 Ascitic fluid .. .. .                | ..       | 1        | ..       | 1       | 2      |
| 9 Bile .. .. .                         | ..       | 1        | ..       | ..      | 1      |
| 10 Milk for the presence of acetone .. | ..       | 1        | ..       | ..      | 1      |
|                                        | —        | —        | —        | —       | —      |
| Total ..                               | 287      | 157      | 10       | 6       | 460    |
|                                        | —        | —        | —        | —       | —      |

*Helminthology section.*—In the study of the identity and number of amphistomes in ruminants, a large collection has been made from bovines and ovines at the Madras slaughter house. They were brought in live condition to the laboratory and sorted out by naked eye as Paramphistomes, Fiscoederius and Gastrothylax as it was found impossible to identify the various species of Paramphistomum in that stage. As all the specimens available in each animal were gathered, the total number in each case has been determined with a view to judge the intensity of natural infections, specimens were also examined after staining.

Important points that emerged from the study are that the occurrence of *Paramphistomum cervi* appears to be doubtful; that more than one species of *Paramphistomum* may be present and that *Cercaria indica* XXVI (Sewell) has to be studied more thoroughly in relation to its adult which is now understood to be.

*Cotylophoron cotylophorum.*—An experiment on calves by direct transference of adult amphistomes was partly successful in that one of the three calves took the infection. The search for amphistome cercaria from snails in Hosur, Madras and Ranipet for infection experiments proved futile. The work will be continued in the following year with emphasis on the experimental aspect.

#### Animal Husbandry Department.

The college Livestock Section and Poultry Unit were continued to be attached to this section. Consequent on the transfer of the Ranikhet Disease Vaccine Section together with its staff to the Veterinary Biological and Research Institute, Ranipet, the Poultry Unit of this College consisting of 5 cocks, and 29 hens was also transferred to the Veterinary Biological and Research Institute, Ranipet, on 19th March 1954.

#### Animal Nutrition Department.

During the period under report, 7 samples of different feeds were analysed for their nutrient composition.

A sample of cotton seed cake manufactured by the Rallis India, Limited, was analysed and found unfit for feeding as it contained an excess of crude fibre and lower amount of nitrogen-free extracts than the normal specimen. It was an undecorticated sample with a large amount of lime fit only for fertilizer use. Two samples of hay were received from the Police Department for examination to know the quality and suitability for horses. On examination, Hariyali grass hay was found superior in quality and more suitable for horses than Spear grass hay. Two samples of fish meal differing greatly in prices, one sample of grass and a sample of soil in which the grass is grown, have been received from the field staff and are under examination.

#### *Special Features—Bacteriology Department.*

(1) During the period under report 4 samples of Hide fleshings, 2 samples of Indian Bone Grit and 1 sample of Goat Hair were examined for issue of Anthrax free certificates all of which on examination were found to be negative.

(2) *Auto-vaccines*.—Six auto-vaccines were prepared and supplied during the period under report. The materials received were from cases not responding to the usual treatment. The auto-vaccines were supplied for both bovines and canines suffering from Ottorrhoea.

(3) *Small animal colony*.—The successful breeding and maintenance of small animals such as rabbits, guinea pigs, mice of different breeds, viz., Japanese and Swiss and white rats for experimental purpose were continued and their stock position for the period under report was satisfactory.

#### *Pathology Department.*

*Tuberculosis*.—This was detected in a Chakma baboon received for autopsy from the Madras Zoo.

#### *Parasitology Department.*

*Dictyocaulus viviparus*.—The long worm of cattle was found in a she-murrah buffalo of the district Livestock Farm, Malabar. This seems to be the first authentic record of the affection in the Madras State.

*Parafilaria bovicola*.—Was recovered from the cutaneous hæmorrhagic-nodule of a bullock in Coimbatore district.

Smears from the skin nodule resembling filaria hæmorrhagica nodules of an elephant from Manantody revealed unsheathed microfilaria. This is the first record of microfilaria from the elephant in South India.

*Stay Babesia motasi* was noticed in a sheep.

*Theileriasis* of sheep in Tanjore district was established and as many as 52 out of 78 sheep examined from a particular flock, revealed varying degrees of the infection.

*Rickettsia canis* was seen in the blood smears of ten dogs.

*Rhinospordial*.—Infection of the nostrils was confirmed in two cows of Tanjore district.

The hart blood smears of four bovines revealed Rainey's Corpuscles.

#### *Manufacture of biological products.*

*Ranikhet disease vaccine section*.—Even after the transfer of the Research Officer of this section to the Andhra State on 31st October 1953 the section continued to function and two brews of vaccine consisting of 80,000 doses were manufactured of which 50,000 doses were distributed before its transfer to the Veterinary Biological and Research Institute, Ranipet.

*Auto-vaccine*.—Vide under the Bacteriology department.

12. *Poultry*.—At the beginning of the period under report, the stock position of the poultry unit attached to this college was as shown hereunder—

|                     |    |    |    |    |    |
|---------------------|----|----|----|----|----|
| White Leghorn cocks | .. | .. | .. | .. | 4  |
| White Leghorn hens  | .. | .. | .. | .. | 27 |
|                     |    |    |    |    | —  |
| Total               | .. |    |    |    | 31 |
|                     |    |    |    |    | —  |

Five cockrels were added to the adult stock bringing the total of cocks to nine. Of this four were sold to public, leaving only five cocks on hand. Similarly 10 pullets were added to the adult stock bringing the total of hens to 37. Six aged hens being poor layers were sold to public and two died. Thus, there remained 29 hens in the Unit. With the transfer of the Ranikhet Disease Vaccine Section to the Veterinary Biological and Research Institute, Ranipet, all these birds, viz., 5 cocks and 29 hens were transferred to the Veterinary Biological and Research Institute, Ranipet, on 19th March 1954, retaining the poultry runs and houses for housing birds used for research and investigations.

The number of eggs collected during the period from 1st October 1953 to 18th March 1954 was 1,741. These and five eggs left on hand at the end of the previous half year ending 31st September 1953 were disposed off as follows:—

|                                                                          |    |    |    |    |       |
|--------------------------------------------------------------------------|----|----|----|----|-------|
| 1 Supply to the section of this college                                  | .. | .. | .. | .. | 451   |
| 2 Supply for Ranikhet Disease Vaccine section for production of vaccine. |    |    |    |    | 508   |
| 3 Sold to public for hatching                                            | .. | .. | .. | .. | 610   |
| 4 Supply to the Ranikhet Disease Vaccine section for hatching            | .. |    |    |    | 50    |
| 5 Fed to birds                                                           | .. | .. | .. | .. | 80    |
| 6 Sold to public for table purpose                                       | .. | .. | .. | .. | 47    |
|                                                                          |    |    |    |    | —     |
| Total                                                                    | .. |    |    |    | 1,746 |

#### IV. VETERINARY BIOLOGICAL AND RESEARCH INSTITUTE, RANIPET.

##### *Accommodation and equipment.*

13. Repairs to some "Q" type quarters in the estate are under progress. The Public Works Department has completed the construction of the incinerator sanctioned for Rs. 9,900 and handed it over to the institute on 3rd December 1953. Fencing of the compound of the institute is nearing completion. The partitioning of the process room into four cubicals to make them suitable for bacteriological and cultural work, and the reconstruction of the two cattle sheds sanctioned by the Government are in progress. During the year three ceiling fans were fitted in the Office rooms of the Gazetted Officers of the Investigation Section and the putting up of six street lights to the residential area in the estate was also completed by the Public Works Department.

The supply of water to the Institute was made during the year by Messrs. Parry & Co., as in previous years. Regarding the sinking of a bore well to get enough water for meeting the requirements of the Institute, the allotment of a drill by the Industries Department is awaited.

The community radio set in the Institute was continued to be used during the period.

14. *Livestock and fodder*.—During the period under report 378 adult he-buffaloes, 358 buffalo calves, 25 bull calves, 6 heifer calves, 1,230 goats and 96 sheep were purchased. Out of the discontinued animals 322 (three hundred and twenty-two) adult he-buffaloes, 232 buffalo calves, 16 bull calves, 4 heifer calves, 115 goats and 21 sheep were salvaged after the preparation of the biological products and resold to the contractors.

The adult he-buffaloes, buffalo calves, bull calves, heifer calves, goats and sheep required for the preparation and test of biological products and for experiments in the institute were obtained on a contract basis as in previous years. Some chicks and rabbits required for experiments were purchased locally. The guinea pigs, some of the rabbits and mice required for tests and experiments were bred in the Institute. A small poultry unit was also being maintained for the supply of eggs and chicks required for the manufacture and test of some of the vaccines. The poultry unit belonging to the Ranikhet Disease Vaccine Section of the Madras Veterinary College consisting of 29 hens and 5 cocks of the white leg-horn breed was also transferred to the Institute along with some trap-nests, brooder box, etc., during the period.

The various articles of cattle fodder except bengalgram and salt were purchased through contractors on contract basis as in the previous years.

15. *Cultivation of cattle fodder*.—Cholam crop was raised in about 2 acres of land and yielded 77 lb. of cholam grain and 7,925 lb. of cholam straw.

16. *Production of biological products*—(a) *Anti-Rinderpest Serum*.—The stock of Anti-Rinderpest Serum on hand at the beginning of the period was 22,840 doses of 5 c.c. each. During the period under report 19 brews of the product consisting of 620,960 doses of 5 c.c. each were manufactured. Four hundred and ten healthy adult buffaloes were actually used for the manufacture of this product during the period and on an average a buffalo produced 1,514.54 doses of serum of 5 c.c. each.

Three hundred, and seventy-eight adult he-buffaloes for the production of Anti-Rinderpest Serum and 114 buffalo calves for testing the potency of the serum were purchased during the period. Besi des 2 calves were transferred to this section from other sections of the Institute.

The total quantity of serum issued during the period was 5,83,640 doses of 5 c.c. each. The demand was mostly from the Andhra districts, viz., East Godavari, West Godavari, Kistna, Nellore, Cuddapah, Kurnool and Chittoor. All the brews of Anti-Rinderpest Serum manufactured were tested for sterility, safety and potency before issue to the field staff. Serum from individual bleedings were also tested culturally and found to be sterile on almost all the occasions. The potency of the serum was evaluated for every brew by the Haddow's and Edward's methods.

During the whole year 1953-54, 31 brews of Anti-Rinderpest Serum were manufactured yielding 10,38,540 doses of 5 c.c. each as against 43 brews yielding 19,56,650 doses of 5 c.c. each manufactured in the previous year. During this year, 685 adult he-buffaloes were actually used for the manufacture of serum and on average a buffalo produced 1,516 doses of serum as against 1,292 animals actually used for serum production and an average of 1,514 doses of serum from each buffalo during the previous year.

(b) *Rinderpest bull virus*.—Fifty-six buffalo calves were used for the production and maintenance of this virus during the period. Six thousand, one hundred and fifty-five c.c. of the product were manufactured and of these 4,950 c.c. were used for immunising buffaloes for Anti-Rinderpest Serum production and carrying out necessary tests.

Seed bull virus was supplied to Hyderabad and Uttar Pradesh Veterinary College, Mathurai, during the period.

During the whole year 1953-54, 138 buffalo calves were used for the production and maintenance of this virus strain. The quantity of bull virus manufactured during the whole year is 14,480 c.c. as against 15,932 c.c. during the previous year. 12,055 c.c. of the virus were issued during the year 1953-54 as against 14,207 c.c. issued during the previous year.

(c) *Rinderpest goat virus*.—There was a heavy demand for this product during the period under report due to the prevalence of Rinderpest outbreaks in the northern districts of Andhra State. During the period 752 goats were used for the manufacture of this product out of which 124 goats could not be bled due to unsatisfactory

reactions and in regulating production according to the demands from the field staff. During the period 279,056 c.c. of goat virus were manufactured and of this 256,226 c.c. were issued to the field staff for controlling outbreaks of rinderpest.

The Mukteswar 'W' line of virus was maintained and used at the Institute for goat virus production.

During the year 553,840 c.c. of goat blood virus were manufactured as against 929,477 c.c. of the previous year. Of these 495,766 were issued to the field staff including Andhra State during the year as against 842,089 c.c. of the previous year. The large decrease in the quantity of this product manufactured and issued is due to the manufacture and issue of the Goat Tissue Vaccine in a freeze dried form from this Institute during the year.

(d) *Haemorrhagic Septicaemia vaccine*.—Seven brews of this vaccine yielding 206,910 doses of 5 c.c. each were manufactured during the period under report. Thirty-five buffalo calves and four rabbits were used for the testing of the vaccine and for the various experiments in the section. The virulence of the cultures for vaccine production and tests were maintained by passage in buffalo calves.

The total number of doses of vaccine manufactured for the period 1st April 1953 to 31st March 1954 was 586,550 doses as against 562,790 doses manufactured during the previous year.

The quantity of Haemorrhagic Septicaemia Vaccine issued during the period was 236,486 doses of 5 c.c. each and the total quantity issued during the whole year is 628,950 doses as against 562,856 doses in the previous year.

(e) *Black-quarter vaccine*.—The stock of this product on hand at the beginning of the period was 21,070 doses of 5 c.c. each. Four brews of black-quarter vaccine comprising 205,410 doses were manufactured during the period. Each brew was tested for its sterility, safety and potency in bull calves, buffalo calves, sheep and Guinea pigs.

Four hundred and sixty three thousand three hundred and seventy doses of the product were manufactured for the whole year as against 329,010 cc. of the previous year. One hundred and twenty-five buffalo calves, 22 bull calves, six heifer calves, 12 sheep and 70 Guinea pigs were used to test the potency of the brews of black-quarter vaccine and for the different experiments. Nine bull calves and four heifer calves were purchased for this purpose. The remaining calves and sheep were transferred from other sections.

The quantity of black-quarter vaccine issued during the period was 209,792 doses of 5 c.c. each and the total quantity issued during the whole year is 462,550 doses as against 356,446 doses of the previous year.

(f) *Bovine Lymphangitis vaccine*.—One brew of this product yielding 220 courses was manufactured during the period. The number of courses of vaccine issued to the field staff was 260.

The quantity produced during the year 1953-54 was 358 courses as against 624 courses during 1952-53 and the quantity issued during the year was 420 courses as against 640 courses of the previous year.

(g) *Sheep pox vaccine*.—Four brews of this vaccine yielding 32,575 doses were manufactured and supplied to the field staff during the period under report. Seventy-three sheep were utilized for the manufacture of the vaccine and for experiments connected with it.

The quantity of sheep pox vaccine produced and issued during the year 1953-54 was 36,680 doses as against 14,020 doses of the previous year.

(h) *Fowl pox vaccine*.—The period opened with a balance of 260 ampoules (26,000 doses) of the vaccine. One batch of this vaccine was prepared and freeze dried during the period. It yielded 24,200 doses. Seven chicks were used for testing the vaccine. One hundred and eighty-two ampoules or 18,200 doses were despatched to the field staff which left a closing balance of 320 ampoules of 100 dose each. Forty-four thousand doses of the vaccine were produced and of these 25,400 doses of the vaccine were issued to the field staff during the whole year 1953-54.

(i) *Pigeon pox vaccine*.—The stock on hand of this produce was 120 ampoules or 6,000 doses and 2,200 doses were despatched to the field staff leaving a closing balance of 3,800 doses. No fresh brews were manufactured during the year.

(j) *Fowl cholera vaccine*.—One brew of this vaccine yielding 600 doses was manufactured during the period. Two chicks were used for testing the vaccine. During the year 2,050 doses of the vaccine were produced and 1,800 doses issued as against 950 and 775 doses respectively of the previous year.

(k) *Ranikhet disease vaccine*.—The manufacture of this vaccine was transferred to Ranipet from the Madras Veterinary College. Supply of the vaccine in a freeze dried form using the Komarov strain or Ranikhet Disease Virus to the field staff replaced the wet vaccine that was being supplied hitherto from the Madras Veterinary College. Regular supplies of the freeze dried vaccine to the field staff commenced from January 1954. Seven hundred and fifty-seven ampoules of 400 doses each of the vaccine have been supplied during the period.

Five batches of this vaccine were manufactured using infected membrane, embryos and fluids during the period the total number of ampoules obtained being 1,006 of 200 doses each. Thirty-three chicks were used for the testing of the vaccine and for experiments in the section.

17. *Other sera and vaccine*.—The requirements of anthrax spore vaccine by the Inspector of Livestock were obtained from the Assistant Disease Investigation Officer (Sheep and Goats).

18. (a) *Experiments and research*.—During the year, a large number of blood smears from serum makers and serum testing calves were positive for blood parasites, the chief of them being Trypanosomes, Plasmodium Bubalis and Spirochaetes were also found in a few cases. All cases of surra were immediately treated with Antrycide, Antrypol or tartar ematic.

During the year, the serum makers were immunised by the following methods:—

- (1) S.S. using bull virus and anti-rinderpest serum.
- (2) Goat virus alone.
- (3) Freeze dried goat virus.
- (4) Lapinised virus—both KLM and LVM strains, the latter at various passage levels.

In all the above cases of immunisation, the serum makers did not manifest any reactions when challenged with massive doses of bull virus ten days after immunisation, thus showing that the various methods have conferred immunity against rinderpest (for the immunised animals).

In one lot of animals half the number of serum makers were immunised with serum first and bull virus after 30 minutes and the other half were immunised with virus first and serum after 30 minutes. There was no marked difference in the reactions observed among the two batches of animals and so no valid conclusion could be drawn from the experiments about the relative value of injecting Anti Rinderpest Serum or Rinderpest virus first during immunisation by the S.S. method.

An experiment to study the interference phenomenon in Rinderpest immunisations using an attenuated virus is in progress among the serum makers.

A brew of serum has been prepared from serum makers immunised with the Madras strain of Lapinised Vaccine. The potency of the serum will be tested during the course of the year.

During the period under report material collected from a bull calf suspected for Rinderpest was received for biological test and it proved negative for Rinderpest.

Experiments were conducted to find out whether healthy unvaccinated goats pick up infection by contact when left free with goats injected with goat virus. Eight healthy goats were left along with goats injected with virulent goat virus ('W' Line). The infected goats were in various stages of infection. All the goats had a common water and feed troughs to ensure close contact between infected and healthy ones. They were also looked after by the same attendants and left free in a well ventilated shed.

One of the incontact goats died on the 10th day due to causes other than rinderpest. The remaining seven goats were challenged with virulent rinderpest goat virus after 15 days. All the seven goats reacted to the challenge and died of rinderpest. The result of this experiment indicates that healthy goats do not pick up rinderpest infection by contact with animals injected with goat virus.

Experiments were also conducted to find out whether healthy buffalo calves pick up infection by contact with calves injected with virulent bull virus maintained at the Institute. Four buffalo calves were left free with infected calves which were in various stages of infection.

After being in contact with the infected animals for a period of 21 days, the four calves were challenged with virulent bull virus and all of them reacted typically and three of them died of Rinderpest. The result of this experiment also indicates that under laboratory conditions the disease does not spread from injected animals to healthy ones by contact. Further study is being continued.

(b) *Ranikhet disease*.—To study whether incontact healthy chicks developed immunity when mixed with vaccinated birds, five healthy chicks of six weeks old were left to mix with five vaccinated chicks. When the sera of the incontact chicks were tested after 21 days they showed a Hemoagglutination inhibition titre ranging from 40 to 320. On challenge with virulent virus on the 23rd day one incontact chick and the contact chick died showing lesions of Ranikhet disease. All the others did not react to the virus. Further study is in progress.

(c) *Lapinised rinderpest virus—Adaptation and fixation of the virus on rabbits*.—Further experimental work on adapting the laboratory strain of Rinderpest Bovine Virus to local rabbits was continued during the period. The strain which had already undergone 154 serial passages in rabbits up to 31st October 1953 was passaged further and during the above period 23 more serial passages from 155 to 177 were made. The strain has been maintained quite successfully as can be studied by the characteristic reactions and lesions in the infected rabbits. The presentation of the constant findings as to incubation period, thermal reactions and pathological changes in the findings as to incubation period, thermal reactions and pathological changes in the rabbits would support the conclusion that this virus has got fixed in its virulence, for the rabbits. This has encouraged the further undertaking of experiments and study with this strain of virus.

(d) *Attempts to evolve a goat reactor virus*.—A few attempts were made to produce a reactor virus in goats by direct serial passages in goats and alternate passages using goats and rabbits. In four series of experiments it was found rather difficult to establish this virus in goats while in the fifth attempt a measure of success has been achieved.

The blood from the first passage goats was found to infect rabbit again and also protected a pair of goats and buffalo calves against Rinderpest, thus showing that the Madras strain of lapinised virus could establish itself in the tissues of goats. Further study is in progress. An attempt to establish the virus in goats by alternating the passages between goats and rabbits as suggested by Mr. Hudson in his work at Siam using pigs in the alternating technique did not meet with success. It was found that even the second passage goats could not withstand challenge with goat virus. However further experiments are being planned to evolve and effective reactor virus from the Madras strain of lapinised virus.

(e) *Titration experiments*.—Titrations conducted with the fresh wet lapinised virus material (1:4 parts tissues and blood) LVM 173 showed its minimum infective dose was 1 in 1,000.

Titrations with freeze dried material LVM 170 showed its m.v.d. was at least one in 1,000 as both the buffalo calves that received a one in 1,000 dilution of the vaccine withstood a challenge with virulent bull virus while one of the two buffalo calves that received a one in 2,000 dilution failed to withstand a subsequent challenge with virulent bovine virus. Hence it is proposed to repeat the tests in a few more buffalo calves.

(f) *Viability experiments*.—Experiments to assess the viability of freeze dried virus in ampoules (LVM 150) kept at room temperature for 48 hours and 72 hours

showed that the freeze dried lapinised virus was viable for at least 72 hours at room temperature. Experiments to study the viability for further periods, viz., 96 hours and 120 hours at room temperature are in progress.

The freeze dried virus in ampoules (LVM 100) stored in a deep freeze at  $-20^{\circ}$  was found viable for a period of at least six months. Further studies on the keeping qualities of the virus are in progress.

(g) *Safety and potency tests.*—The tests were conducted on adult he-buffaloes (serum makers) using the 150th, 160th, 165th and 170th passage of the lapinised virus. Six buffaloes were tested at the 150th passage (LVM 150), 10 at the 165th passage (LVM 160), 8 at the 165th passage (blood 165th), 6 at the 170th passage (blood) and 6 at the 170th passage (LVM 170). All the buffaloes evinced only very mild reactions to the lapinised virus and withstood a subsequent challenge with virulent rinderpest bull virus thereby showing that the virus has reached that stage of attenuation when it can be used safely as a vaccine on indigenous buffaloes. In all 36 buffaloes were tested with the virus during the period.

The lapinised virus was tested on sheep also to study its effect on them. The virus set up only a mild thermal reaction in them. Two of the sheep when tested for immunity withstood the challenge well. Further experiments to study the usefulness of the lapinised virus for protecting sheep against rinderpest are being taken up.

(h) *Interference phenomenon experiments.*—Experiments to study the earliest period in which the lapinised virus confers immunity by the so-called 'Interference Phenomenon' based on the work of Mr. Pfaff with goat virus in Burma and Mr. Jenkins and Shope with avianised virus at Gross Isle was taken up during the period. Six buffalo calves were vaccinated with the lapinised virus and at intervals of 24 hours, 48 hours and 72 hours two calves were injected with virulent bull virus. The study made so far indicates that no immunity by the interference phenomenon was conferred before the 72nd hour.

The experiments were repeated on adult he-buffaloes testing them with virulent bull virus at the 72nd and 96th hours. Here also no immunity was noticed at the 72nd hour while indications of the interference phenomenon were observed at the 96th hour. The study is being continued.

A comparative study of the immunising value of Kabete strain of lapinised virus and Madras Lapinised virus was made on adult buffaloes (serum makers) using 4 for the KLM and 6 for the LVM strain. No appreciable difference in the reactions were observed among the buffaloes immunised with both strains. Both the strains provoked only very mild thermal reaction in the test animals and all the buffaloes withstood a subsequent challenge with virulent virus.

Lapinised virus materials of the 160th, 170th and 173rd passage levels were freeze dried and preserved in deep freeze during the period for further study.

Further study of the Madras strain of Lapinised virus with regard to its—

- (1) Titre in the various tissues of rabbits in the wet and freeze dried form,
- (2) Viability (a) at room temperature, (b) in refrigerator at  $0^{\circ}\text{C}$  and (c) in deep freeze at  $-20^{\circ}\text{C}$  both in wet and freeze dried form and before and after reconstitution using different diluents,
- (3) Possibility of evolving a reactor virus from goats or calves to be used as a vaccine, and
- (4) Immunity studies and other allied experiments with the vaccine, will be taken up during the coming year. Forty-six adult he-buffaloes, 32 buffalo calves, 31 goats, 5 sheep and 65 rabbits were used in the above experiments during the period.

(i) *Hæmorrhagic Septicaemia.*—Work on serological typing of field strains of Pasteurella was continued. During the period under report, three more strains of Pasteurella Boviseptica including one strain received from Burma through Mr. Bain were tested and found to be serologically identical. Further work is in progress.

(j) *Adjuvant vaccine.*—Immunity experiments on the experimental adjuvant vaccine (prepared by the addition of Lanolin and Liq. Paraffin to a formalin killed cell suspension of the organism) were continued. Three vaccinated calves were challenged with 1,000 m.l.ds. of virulent Pasteurella culture at the end of four months and all of them resisted the challenge. When tested after six months after vaccination, two of the three vaccinated calves survived to a challenge dose of 1,000 m.l.ds. of virulent culture, while the third calf died of Hæmorrhagic Septicaemia. This indicates that the adjuvant vaccine confers a strong immunity for a period of at least six months after vaccination.

(k) *Viability experiments.*—Experiments were carried out to find out the period of viability of the adjuvant vaccine when stored at  $40^{\circ}\text{F}$ . in the cold storage room. It was found that 2 of the 3 calves vaccinated with vaccine stored for 6 months at  $40^{\circ}\text{F}$ . survived a challenge dose of 500 m.l.ds. of virulent culture, while the third one succumbed to the challenge.

As the adjuvant vaccine prepared using liquid paraffin appears to be a little thick and creamy, a thinner brand of white oil supplied by Messrs. Burmah Shell & Co., Limited, is being tried to replace the liquid paraffin. Work in this direction and further work on immunity experiments are in progress.

(l) *Heat killed vaccine.*—Experiments have been undertaken to incorporate a cell suspension of the organism killed by heat instead of a formalin inactivated culture in the adjuvant vaccine. Calves immunised with 5 c.c. of heat killed broth vaccine failed to withstand a challenge dose of 50 m.l.ds. Further study is in progress.

(m) *Blackquarter.*—The study on the comparative immunising values of the vaccines prepared in Noguchi's medium and cystine broth was conducted in buffalo calves and guinea pigs during the period and it was observed that the potency of the two vaccines was more or less equal. However, some more experiments have to be conducted to obtain more tangible and significant results. In an experiment in which two groups of these buffalo calves each were immunised with the two vaccines, one calf in either group died when tested with 3 m.l.ds. of virulent Cl. Chauvoei culture on the 15th day following vaccination. In another experiment two out of five immunised calves, in the cystine-broth vaccine group and one out of five in the Noguchi medium vaccine group died when the same dose of Cl. Chauvoei culture was employed. Similar results were obtained in guinea pigs when the same dose of culture was employed for challenging them.

Experiments were also conducted to determine the relative immunological value of alum precipitated vaccines prepared using Noguchi's medium and cystine broth. The latter vaccine appeared to be slightly superior to the former because of the high concentration of bacterial cells in the medium. Out of three buffalo calves protected with cystine-broth alum precipitated vaccine none died when challenged with 10 m.l.ds. of Cl. Chauvoei culture, while in the Noguchi medium group, one of the three vaccinated animals died of Blackquarter when the same dose of Cl. Chauvoei culture was given.

An experimental study was taken up to find out if the process of manufacture of Blackquarter vaccine in Noguchi's medium could be simplified by dispensing with the preparation of the 14 days old cultures. It was found that the immunising value of the 48 hours and the 14 days old anacultures with and without the addition of alum (1 per cent) was not significantly different. Studies are under progress to improve the concentration of bacterial cells in the present vaccines by incorporating into the medium growth factors such as serum, reducing agents, minerals and vitamin supplements.

When two groups of animals immunised with 48 hours and 14 days old mixed anacultures of Cl. Chauvoei and Cl. Septique were challenged on the 18th day with 4 m.l.ds. of Cl. Chauvoei culture all of them withstood the challenge. However, when the test dose was raised to 5 m. l. ds. 2 out of 3 in the 48 hours vaccine group and none out of 3 in the 14 days old vaccine group succumbed to infection showing that vaccine prepared from cultures incubated for 14 days had better immunising value.

(n) *Cross immunity tests* were conducted with Cl. Chauvoei and Cl. Septicum strains. The experiments which were conducted in guinea pigs showed that while Cl. Chauvoei could confer immunity against Cl. Chauvoei infection alone, Cl. Septicum gave protection against Cl. Chauvoei as well as Cl. Septicum infections. However, the antigenic value of Cl. Septicum seemed to be somewhat inferior to that of Cl. Chauvoei in that Cl. Septicum failed to give as much protection against Cl. Septicum infection itself as Cl. Chauvoei gives against Cl. Chauvoei infection. The immunising power of Cl. Septicum antigen appears to be potentiated by the addition to it of Cl. Chauvoei antigen. Out of the three guinea pigs immunised with Cl. Chauvoei antigen none died when tested with 3 m. l. ds. of Cl. Chauvoei culture, but all the three guinea pigs immunised with the same vaccine died when tested with 3 m. l. ds. of Cl. Septicum culture. Conversely when Cl. Septicum was used, none of the three vaccinated animals succumbed to a test dose of 3 m. l. ds. of Cl. Chauvoei culture, but one of the three vaccinated guinea pigs died when challenged with 3 m. l. ds. of Cl. Septicum culture. Similarly, while three guinea pigs immunised with the mixed antigen (Cl. Septicum and Cl. Chauvoei in equal proportions) withstood 3 m. l. ds. of Cl. Chauvoei culture, only two of them withstood a similar dose of Cl. Septicum culture.

During the period under review, 9,480 dose of *Clostridium Welchii* anaculture were prepared using types B and D and issued for the use of the Assistant Disease Investigation Officer (Sheep and Goats). A detailed report from the Assistant Disease Investigation Officer (Sheep and Goats) on the efficacy of the vaccine is awaited.

During this period 26 muscle pieces were received from the field staff for biological test and bacteriological examination. Of these 20 were positive for black-quarter. Studies on the determination of the antigenic structure of the field strains of black-quarter are being continued.

(o) *Sheep pox*.—Local strains of sheep pox virus is being maintained by passage through sheep. Two batches of sheep pox vaccine using the local strain were prepared in freeze dried form and a number of experiments were conducted during the period with this vaccine.

(p) *Sensitised vaccine*.—Three batches of sheep were tested with the sensitised vaccine prepared at the Institute with encouraging results. Out of 12 sheep vaccinated, excepting two, the rest of the sheep showed only mild reactions developing a small swelling at the seat of injection which gradually subsided. All these vaccinated animals withstood a subsequent challenge very well. Some more experiments have to be conducted before trying the vaccine in the field.

(q) *Viability tests*.—Sheep pox vaccine prepared in 50 per cent glycerine saline kept at room temperature for ten days was tested on sheep and all the sheep were challenged after a fortnight with virulent virus. All the sheep reacted to the challenge dose developing typical pox lesions. This experiment indicates that this vaccine in the liquid form loses its potency when kept for ten days outside the cold storage.

(r) *Studies on freeze dried vaccine*.—A comparative study of the freeze dried vaccine in a concentrated form freshly reconstituted and used immediately was made on one batch of sheep by vaccinating them in the ear by the usual scarification method and the second batch of sheep was vaccinated in the ear by the stab method by means of a forked needle dipped in the vaccine. The percentage of 'takes' in the latter method was quite appreciable and such of those animals which showed a good 'take' were found to have developed a solid immunity. Titration experiments to determine the safe vaccinating dose of the freeze dried vaccine capable of giving adequate protection to sheep are in progress.

Three materials from suspected cases of sheep-pox received from the Assistant Disease Investigation Officer (Sheep and Goats) were tested biologically on sheep. All the specimens were found to be inert and did not set up any reaction in the animals tested.

Experiments to cultivate the sheep-pox virus in embryonating eggs were continued during the period. Cultivation of the virus in the eggs by the alternate passages of virus between sheep and C.A. membrane of 12 days old developing eggs is in progress.

(s) *Goat-pox*.—One case of goat-pox was met with in the institute during the period and scabs collected from the nodular lesions of the affected goat were used for infecting two goats and one sheep. Out of these, one goat developed typical lesions of goat-pox and died of the disease on the 19th day. Lesions in the lungs and spleen were also noticed.

The goat-pox virus is being maintained by passage through goats and a detailed study pertaining to the several aspects of the disease and its infectivity to other species of animals are in progress.

Six goats, two sheep and two rabbits have been utilised for the above experiments.

(t) *Brucella abortus vaccine*.—Six brews of *Brucella abortus* vaccine prepared from the *brucella abortus* vaccine strain obtained from the Indian Veterinary Research Institute, Mukteswar, comprising 1,970 doses of 5 c.c. each c.c. containing 16,000,000 live organisms were manufactured during the period and 1,340 doses were issued for carrying out experimental vaccinations.

All the batches of vaccine have been tested on calves and guinea pigs for safety and potency and no untoward reaction was noticed in the vaccinated animals. Two heifer calves, 12 bull calves and 12 guinea pigs were utilised for testing the vaccine prepared during the period.

Two batches comprising of 4,200 c.c. of brucella tube antigen were prepared during the period and 250 c.c. were supplied to the Principal, Madras Veterinary College, Madras, 200 c.c. to the Veterinary Investigation Officer, Ranipet, 50 c.c. to the Andhra State and 2,600 c.c. were utilized in the institute for conducting agglutination tests.

As there was not much demand for the plate antigen, the same was not manufactured during the period. The Principal, Madras Veterinary College, Veterinary Investigation Officer and the Veterinary Assistant Surgeon in charge, Veterinary Hospital, Kumbakonam, were each supplied with 25 c.c. of the plate antigen.

The actual time taken for the formation of agglutinins in the blood, the titre of the agglutinins at varying periods in the sera of vaccinated animals were studied systematically by conducting agglutination tests with the sera collected daily from the vaccinated animals and the observations are being recorded. From the tests carried out so far it is seen that the agglutinins begin to appear in the blood from the fourth day of vaccination, after which it gradually increases reaching the peak by about the tenth day. It remains stationary at this level for a week and then gradually declines. By the fourth month of vaccination the titre of the agglutinins becomes very low. Further tests are in progress.

Twenty-one specimens of blood sera and synovial fluids from cases suspected for brucellosis were received from the field for diagnostic tests. From the agglutination tests conducted with the above materials, eight of them proved to be positive for brucellosis.

(u) *Anthrax spore vaccine*.—Several experiments in connection with the preparation of anthrax spore vaccine were conducted during the period.

One brew of experimental anthrax spore vaccine comprising 10,000 doses was manufactured from the virulent strain obtained from the Indian Veterinary Research Institute, Mukteswar. The vaccine has been tested on sheep and goats and a dose containing 2 million spores was found to confer adequate protection to both sheep and goats against a challenge dose of 50 m. l. ds. of virulent anthrax spores.

One more batch of vaccine is under preparation and it will be released after the tests are completed.

In all 11,220 doses were issued to the Veterinary Investigation Officer, Assistant Disease Investigation Officer (Sheep and Goats) and to some of the field staff for conducting experimental trials in the field. The reports received from the Veterinary Investigation Officer from his observation of 1,601 vaccinated cattle shows that this product is found to be satisfactory and safe when used both in actual outbreaks and free areas and no untoward results were met with.

A new vaccine strain obtained from the Veterinary Research Laboratory, Weybridge, England, has been used for the manufacture of a small batch of experimental vaccine. A brew of vaccine manufactured with this strain has been tested on batches of sheep and goats in doses of 1-million spores and 2-million spores per c.c. The vaccinated animals were challenged 21 days later with 100 m. l. ds. of virulent anthrax spores. All the animals that were protected with vaccine containing 2-million spores withstood the challenge and no untoward results have been noticed.

Further work will be taken up to determine the comparative value relating to the efficacy of the vaccine using different strains in its preparation. Thirty-nine sheep, 33 goats and 25 guinea pigs have been utilized for the production of the vaccine and in connected experiments.

(v) *Anti-anthrax serum*.—After the receipt of the Government Order, the manufacture of anti-anthrax serum was taken up at the close of the year and one brew is under preparation.

(w) *Freeze dried rinderpest vaccine*.—During the period 33 batches of freeze dried rinderpest goat tissue vaccine were manufactured. Of these 28 batches were titrated and the exact titre of the virus in each batch was ascertained. The total number of doses of vaccine in the above 28 batches calculated comes to 585,825. Twenty-five of these batches gave a titre of 1—8,000, while the remaining 3 batches yielded a titre of 1—4,000 only. Five batches manufactured during the period are under test for which the exact number of doses of vaccine produced can be known only after the completion of the titration experiments.

To ascertain the viability of the freeze dried spleen tissue rinderpest vaccine stored in the deep freeze at—20°C, the following experiment with vaccine stored in the deep freeze for nine months was undertaken.

Two buffalo calves were injected with 1 c.c. of 1 : 4,000 dilution each and two other buffalo calves were injected with 1 c.c. of 1 : 8,000 dilution. On the 15th day the vaccinated calves were challenged with virulent bull virus keeping a control. All the four test calves withstood the challenge whereas the control reacted typically to rinderpest.

Another experiment on the above lines is under progress to ascertain the viability of freeze dried rinderpest spleen tissue vaccine after storage for one year in deep freeze.

During the period under review there was a great demand for this product from the Andhra State where rinderpest was prevailing in many districts. In all 321,750 doses of freeze dried rinderpest goat tissue vaccine were issued for use in the Andhra State. The reports received so far after the use of the vaccine both in free areas and actual outbreaks are encouraging.

In the residuary State, the demand was normal as there were only stray outbreaks of rinderpest and in all 77,100 doses of the vaccine were issued during the period.

Hundred doses of freeze dried rinderpest goat tissue vaccine were supplied to the Ceylon Government.

Two local bred calves vaccinated with freeze dried Rinderpest vaccine on 20th May 1953 at the District Livestock Farm, Koila, were tested for immunity with virulent rinderpest bull virus on 17th March 1954. Both these calves were found to be resistant to the disease indicating that the freeze dried rinderpest vaccine confers immunity for a period of at least ten months. Further immunity tests will be conducted in due course.

During the period under review 49 batches of different products were freeze-dried as detailed below :—

|                                                | CATCHES. |
|------------------------------------------------|----------|
| (a) Rinderpest goat tissue vaccine .. ..       | 35       |
| (b) Rinderpest lapinized vaccine .. ..         | 3        |
| (c) Ranikhet disease vaccine .. ..             | 5        |
| (d) Fowl-pox vaccine .. ..                     | 1        |
| (e) Sheep-pox vaccine .. ..                    | 3        |
| (f) Human serum from King Institute, Guindy .. | 2        |
| Total ..                                       | 49       |

#### Laboratory.

19. (a) *Specimens examined*.—During the period under report 3,775 specimens were examined out of which 3,757 were blood smears, 12 faeces, 4 scrapings and 2 nasal washings. The following were detected in them :—

|                                  |     |
|----------------------------------|-----|
| Microfilaria .. ..               | 1   |
| Trypanosomes .. ..               | 139 |
| Theileria .. ..                  | 1   |
| Plasmodium .. ..                 | 1   |
| Spirochaetes .. ..               | 2   |
| Anthrax .. ..                    | 5   |
| Pasteurella .. ..                | 4   |
| B. Subtilis .. ..                | 14  |
| P.M. Invaders .. ..              | 3   |
| Pseudomonas .. ..                | 4   |
| Coccobacillus .. ..              | 6   |
| Ova of Schistosoma nasalis .. .. | 1   |
| Oocysts of coccidia .. ..        | 1   |

During the period under report 19 specimens of skin and muzzle pieces were received for biological test out of which 5 proved positive for anthrax.

(b) *Post-mortem examination*.—During the period under report 1,213 post-mortems were conducted, the details of which are as follows :—

#### Kind of animal. Number.

|                          |       |
|--------------------------|-------|
| (1) He-buffaloes .. ..   | 50    |
| (2) Goats .. ..          | 1,100 |
| (3) Buffalo calves .. .. | 61    |
| (4) Sheep .. ..          | 2     |
| Total ..                 | 1,213 |

| Kind of animal. | Disposal. |        | Skin and bones handed over. | Total. |
|-----------------|-----------|--------|-----------------------------|--------|
|                 | Buried.   | Burnt. |                             |        |
| Buffaloes .. .. | 3         | 36     | 11                          | 50     |
| Calves .. ..    | 9         | 47     | 5                           | 61     |
| Goats .. ..     | ..        | 1      | 1,099                       | 1,100  |
| Sheep .. ..     | ..        | 2      | ..                          | 2      |
| Total ..        | 12        | 86     | 1,115                       | 1,213  |

*Interesting features noticed during post-mortem*.—Goats.—Round worms belonging to haemonchus species were frequently observed. Two cases of volvulus and intussusception were met with.

*Buffalo calves*.—Hydatid cysts and liver flukes and paramphistomes were met with during post-mortem in a few cases.

*Buffaloes*.—Incidence of liver flukes and paramphistomes was noticed in as many as 21 buffaloes during post-mortem. Mixed infection of both was sometimes met with. Hydatid cysts in five cases were found distributed mostly in the abdominal cavity, liver and the lungs, sometimes completely replacing the parenchyma of the organ. Worms belonging to setaria genus were seen in the abdominal cavity in many animals during post-mortem.

Interesting exhibits showing the lesions of rinderpest in the various organs have been collected and preserved in the Museum. Other interesting lesions have also been preserved.

20. *Sale of biological products*.—During the period, a sum of Rs. 8,056-14-4 was realized by the sale of biological products to neighbouring States. Statement showing the quantity sold during the period including the supply made to Community Projects, National Extension Service areas is furnished below :—

|                                        |              |
|----------------------------------------|--------------|
| Anti-rinderpest serum .. .. .          | 1,200 doses. |
| Goat virus .. .. .                     | 2,725 c.c.   |
| Bull virus .. .. .                     | 500 c.c.     |
| Black-quarter vaccine .. .. .          | 1,350        |
| Hæmorrhagic septicæmia vaccine .. .. . | 19,940       |
| Fowlpox vaccine .. .. .                | 1,500        |
| Bovine lymphangitis vaccine .. .. .    | 1 course.    |
| Rinderpest (F.D.V.) .. .. .            | 100 doses.   |
| Fowl-cholera vaccine .. .. .           | 400 „        |
| Ranikhet vaccine .. .. .               | 3,400 „      |
| Sheep-pox vaccine .. .. .              | 1,000 „      |

*Cost of production*.—As no further consolidated annual report is to be furnished, the particulars regarding the unit cost of production of the different biological products manufactured for which cost of production is worked out on a pro-forma basis is furnished below and this relates to the year 1952-53 as no production cost of 1953-54 will be available before audit on the accounts of that year :

|                                           | Cost of production |                 |
|-------------------------------------------|--------------------|-----------------|
|                                           | during 1952-53.    | during 1951-52. |
|                                           | PIES PER C.C.      | PIES PER C.C.   |
| 1 Anti-rinderpest serum .. .. .           | 2-64               | 2-53            |
| 2 Rinderpest virus products .. .. .       | 12-54              | 12-04           |
| 3 Hæmorrhagic septicæmia vaccine. .. .. . | 1-54               | 1-35            |
| 4 Black-quarter vaccine .. .. .           | 1-69               | 1-41            |
| 5 Fowlpox vaccine .. .. .                 | 30-57              | 23-02           |
| 6 Fowl cholera vaccine .. .. .            | 14-88              | 12-32           |
| 7 Sheep-pox vaccine .. .. .               | 68-14              | 64-87           |
| 8 Bovine lymphangitis vaccine .. .. .     | 3-35               | 12-88           |
|                                           | pies per course.   |                 |

21. *Five-year plan schemes*.—The scheme for the purchase of laboratory equipment and furniture sanctioned for Rs. 30,000 in G.O. Ms. No. 1505, Development, dated 4th April 1951, and the scheme for the purchase of books for the library of the institute sanctioned in G.O. Ms. No. 1504, Development, dated 4th April 1951, for Rs. 10,000 were the two schemes relating to the institute included in the Five-year Plan.

The expenditure incurred in respect of these two schemes during the period is Rs. 377-10-0 and the total progressive expenditure to the end of 31st March 1954 is Rs. 30,241-13-3, leaving a balance of Rs. 9,758-2-9. Purchases are being made as and when sanction is received and proposals for further purchases of furniture and books for the balance amount available are being submitted and will be completed shortly. The progress as such is satisfactory.

22. *Miscellaneous*.—(a) A stand-by freeze drying machine sanctioned for purchase from Messrs. Edwards & Co., London, is expected to be received soon and payment for the same has also been completed.

(b) The institute has taken part under the Unesco International Coupon Scheme and the following machinery have been purchased under this scheme :—

|                                                                                                                  |             |
|------------------------------------------------------------------------------------------------------------------|-------------|
| 1 Spencer's stereoscopic microscope—one .. .. .                                                                  | \$ 447-50   |
| 2 Dark field Qubec colony-counter for bacteria—one .. .. .                                                       | \$ 57-00    |
| 3 Spencer's Universal microscope lamp on 3-link jack, knife and stand attachable to stereoscopic microscope—one. | \$ 69-00    |
| 4 Sharples Laboratory Super centrifuge refrigeration unit—one .. .. .                                            | \$ 1,449-25 |
| Total .. .. .                                                                                                    | \$ 2,022-75 |

(c) Clyricidia seeds and cuttings from the plants available at the institute were supplied to the Agricultural Department Officers for distribution to ryots to be grown as green manure.

23. *Visitors*.—The following gentlemen visited the institute and they were taken round and the activities of the institute explained :—

(1) Hon'ble Sri V. C. Palaniswamy Gounder, Minister for Animal Husbandry and Harijan Welfare.

(2) Sri W. R. S. Sathianathan, I.C.S., Member, Board of Revenue.

(3) Sir Thomas Dalling, Chief Veterinary Officer, Food and Agriculture Organization of the United Nations.

In addition the second and third batches of the Veterinary Assistant Surgeons undergoing Refresher Course underwent necessary training. Further, students and teachers from various schools, and students of the Madras Veterinary College visited the institute on their educational tour.

## V. LIVESTOCK.

### Administration.

24. Consequent on the transfer of Sri T. Murari as Director of Animal Husbandry, Andhra State, Sri D. Pattabiraman held charge of the Office of the Deputy Director of Animal Husbandry (Livestock), Madras, during the entire period. He attended the Indian Council of Agricultural Research meeting held at Srinagar during October 1953. He toured the State and inspected the work done in livestock farms and institutions and livestock improvement work in the field regularly.

The post of the Deputy Director of Animal Husbandry (Key Villages) was not in existence during the period.

The following institutions, etc., were in charge of the officers noted against each :—

|                                                          |                                                                                                                                                                                                                                                   |
|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 Superintendent, Livestock Research Station, Hosur.     | Sri G. Venkatachalam (throughout the period).                                                                                                                                                                                                     |
| 2 Superintendent, District Livestock Farm, South Kanara. | Sri K. Thomas Benjamin (throughout the period).                                                                                                                                                                                                   |
| 3 Superintendent, District Livestock Farm, Malabar.      | Sri George Ebenezer (throughout the period).                                                                                                                                                                                                      |
| 4 Superintendent, District Livestock Farm, Pudukkottai.  | Sri K. S. Shanmugasundaram from 1st to 18th October 1953.<br>Sri G. B. Radhakrishnan from 19th October 1953 to 18th February 1954.<br>Sri P. Satyendhra Rao, District Veterinary Officer, Tiruchirappalli, from 19th February to 31st March 1954. |

- 5 Superintendent, Kangayam Cattle Improvement Scheme, Palayakottai. Sri K. Kandaswami Raju (throughout the period).
- 6 Poultry Development Officer, Madras. Sri H. Narahari Rao (throughout the period).
- 7 Sheep and Goat Development Officer, Hosur. Sri R. Vijayarangam, Veterinary Assistant Surgeon in charge of the office of the Sheep and Goat Development Officer, Hosur (throughout the period).
- 8 Special Officer, Artificial Insemination, Madras. Sri R. Veeramani Ayyar, from 1st to 31st October 1953.  
Sri C. K. Subbu Singh, from 1st November 1953 to 31st March 1954.
- 9 Inspector of Key Villages, Kangayam. Sri G. B. Radhakrishnan, from 1st to 10th October 1953.  
Sri M. C. Chellam, from 11th October to 6th November 1953.  
Sri R. Veeramani Ayyar, from 7th November 1953 to 31st March 1954.

Sri G. B. Radhakrishnan was deputed on 18th February 1954 to New Zealand for training in Livestock Improvement for a period of not exceeding one year under the Commonwealth Technical Co-operation Scheme.

#### Cattle.

25. *Livestock Research Station, Hosur*—(a) *Strength*.—There were 1,279 animals on 1st October 1953. During the period under report there were 155 births and three receipts. The number of animals transferred during the period was 48 and there were 21 deaths. The strength on 31st March 1954 was 1,368 as detailed below :—

| Breed.            | Cows.   | Heifers.  | Young bulls. | Breeding bulls. | Calves. | Work cattle. | Total. |
|-------------------|---------|-----------|--------------|-----------------|---------|--------------|--------|
| Scindhi .. ..     | 173     | 121       | 161          | 9               | 112     | 11           | 587    |
| Kangayam .. ..    | 165     | 108       | 92           | 14              | 98      | 54           | 531    |
| Hallikar .. ..    | ..      | ..        | ..           | 11              | ..      | 11           | 22     |
| Cross breed .. .. | 21      | 16        | 19           | ..              | 11      | 15           | 82     |
| Gir .. ..         | 37      | 22        | 35           | 3               | 34      | 1            | 132    |
| Tharparkar .. ..  | ..      | ..        | ..           | ..              | ..      | 5            | 5      |
| Murrah .. ..      | ..      | ..        | 2            | 1               | ..      | ..           | 3      |
| Horses .. ..      | 2       | 2         | ..           | 2               | ..      | ..           | 6      |
|                   | (Mares) | (Fillies) |              | (Stallions)     |         |              |        |
| Total .. ..       | 398     | 269       | 309          | 40              | 255     | 97           | 1,368  |

(b) *Dairy*.—(i) Particulars of the average number of animals in each breed, milk yield, etc., are as follows :—

| Breed.            | Average number of cows in the herd. | Average number of cows in milk. | Total milk yield during the period. | Daily average yield per cow for the cows in milk. | Daily average yield per cow for the herd. | Daily average yield per cow during 1952-53 |                       |
|-------------------|-------------------------------------|---------------------------------|-------------------------------------|---------------------------------------------------|-------------------------------------------|--------------------------------------------|-----------------------|
|                   |                                     |                                 |                                     |                                                   |                                           | for cows in milk.                          | for cows in the herd. |
| (1)               | (2)                                 | (3)                             | (4)                                 | (5)                                               | (6)                                       | (7)                                        | (8)                   |
| Scindhi .. ..     | 160.8                               | 91.2                            | 2,09,536                            | 10.7                                              | 5.6                                       | 11.0                                       | 6.3                   |
| Kangayam .. ..    | 143.2                               | 64.5                            | 78,226                              | 6.6                                               | 3.0                                       | 5.2                                        | 2.1                   |
| Cross breed .. .. | 19.8                                | 10.2                            | 26,580                              | 14.2                                              | 7.4                                       | 11.5                                       | 6.5                   |
| Gir .. ..         | 37.8                                | 25.1                            | 56,790                              | 12.5                                              | 8.2                                       | 11.3                                       | 7.6                   |

(ii) Particulars in respect of some of the good performers in the different breeds which completed their lactation during the period are given below :—

| Breed.            | Cow number. | Milk yield. | Number of days in milk. | Daily average for the lactation. |
|-------------------|-------------|-------------|-------------------------|----------------------------------|
| (1)               | (2)         | (3)         | (4)                     | (5)                              |
|                   |             | LB.         |                         | LB.                              |
| Scindhi .. ..     | 291         | 11,153      | 332                     | 33.6                             |
| Do. .. ..         | 303         | 4,939       | 190                     | 26.0                             |
| Kangayam .. ..    | 598         | 6,254       | 345                     | 18.1                             |
| Cross breed .. .. | 429         | 6,905       | 344                     | 20.1                             |
| Gir .. ..         | 21          | 3,864       | 250                     | 15.5                             |
| Gir .. ..         | 31          | 4,952       | 307                     | 16.1                             |
| Gir .. ..         | 38          | 5,863       | 321                     | 18.3                             |

(c) *Veterinary hospital and disease position*.—(i) The particulars of work done in the hospital are given below :—

Number of cases treated—546.

Number of castrations done—19.

Daily average attendance—44.42.

Number of specimens examined—240.

Number of specimens sent to the Principal, Madras Veterinary College and Investigation Officers—61.

(ii) *Disease position—Contagious diseases*.—The only outbreak of contagious disease during the period was that of foot and mouth disease with 19 attacks and two deaths in calves. All the animals were given suitable treatment and special diet. The disease was prevalent for about a week and then subsided.

*Non-contagious diseases*.—Particulars of cases treated for different conditions are given below :—

| Name of disease.          | Number of cases treated. |
|---------------------------|--------------------------|
| 1 Ephimeral fever .. ..   | 40                       |
| 2 Mastitis .. ..          | 16                       |
| 3 Coccidiosis .. ..       | 13                       |
| 4 Helminthiasis .. ..     | 4                        |
| 5 Mange .. ..             | 3                        |
| 6 Naval ill .. ..         | 14                       |
| 7 Johne's disease .. ..   | 4                        |
| 8 Abortion .. ..          | 5                        |
| 9 Retained placenta .. .. | 6                        |
| 10 Cancer .. ..           | 2                        |

Three cases of Johne's disease were confirmed and disposed of. The viscera were seized and destroyed in all of them. One case suspected for the disease died and was confirmed on post-mortem.

26. *District Livestock Farm, South Kanara*—(a) *Strength*.—The strength on 1st October 1953 was 290. There were 28 births, 1 transfer, 18 disposals and 13 deaths during the period. The strength on 31st March 1954 was 286 as shown below :—

| Breed.         | Cows. | Heifers. | Young bulls. | Breeding bulls. | Calves. | Work cattle. | Total. |
|----------------|-------|----------|--------------|-----------------|---------|--------------|--------|
| Murrah .. ..   | 51    | 31       | 7            | 2               | 21      | ..           | 112    |
| Dharwar .. ..  | 6     | 1        | 1            | 1               | 2       | ..           | 11     |
| Scindhi .. ..  | 16    | 15       | 16           | 6               | 14      | ..           | 67     |
| Gir .. ..      | 5     | 5        | 6            | 1               | 4       | ..           | 21     |
| Local .. ..    | 19    | 16       | 3            | 1               | 17      | ..           | 56     |
| Hallikar .. .. | ..    | ..       | ..           | ..              | ..      | 19           | 19     |
| Total .. ..    | 97    | 68       | 33           | 11              | 58      | 19           | 286    |

(b) Dairy.—(i) Particulars of milk yield, etc., for each breed are given below :—

| Breed.  | Average number of cows in the herd. | Average number of cows in milk. | Total milk yield during the period. | Daily average yield per cow. |                       | Daily average yield per cow in 1952-53. |                       |
|---------|-------------------------------------|---------------------------------|-------------------------------------|------------------------------|-----------------------|-----------------------------------------|-----------------------|
|         |                                     |                                 |                                     | For cows in milk.            | For cows in the herd. | For cows in milk.                       | For cows in the herd. |
| (1)     | (2)                                 | (3)                             | (4)                                 | (7)                          | (6)                   | (7)                                     | (8)                   |
| Murrah  | 53                                  | 41.1                            | 90,412                              | LB.                          | LB.                   | LB.                                     | LB.                   |
| Dharwar | 6                                   | 2.8                             | 3,643                               | 11.9                         | 9.4                   | 11.9                                    | 8.3                   |
| Scindhi | 16.7                                | 9.6                             | 26,071                              | 7.0                          | 3.4                   | 7.7                                     | 5.6                   |
| Gir     | 6                                   | 3.1                             | 8,539                               | 14.8                         | 8.9                   | 11.1                                    | 7.6                   |
| Local   | 19.3                                | 12.5                            | 4,677                               | 15.0                         | 8.0                   | 13.3                                    | 7.9                   |
|         |                                     |                                 |                                     | 2.1                          | 1.4                   | 1.9                                     | 0.8                   |

(ii) Particulars of some of the good performers which completed lactation during the period are given below in respect of each breed :—

| Breed.  | Cow. | Milk yield. | Number of days in milk. | Daily average for the lactation. |
|---------|------|-------------|-------------------------|----------------------------------|
| (1)     | (2)  | (3)         | (4)                     | (5)                              |
| Murrah  | 65   | LB.         | LB.                     | LB.                              |
| Do.     | 1    | 6,037       | 322                     | 18.8                             |
| Do.     | 54   | 5,322       | 307                     | 17.3                             |
| Dharwar | 12   | 5,099       | 300                     | 17.0                             |
| Scindhi | 517  | 3,130       | 320                     | 9.8                              |
| Do.     | 471  | 4,883       | 261                     | 18.7                             |
| Do.     | 463  | 5,001       | 320                     | 15.6                             |
| Gir     | 29   | 4,927       | 320                     | 15.4                             |
|         |      | 6,533       | 367                     | 17.8                             |

27. District Livestock Farm, Malabar—(a) Strength.—The strength on 1st October 1953 was 134. There were 17 births. Eight animals were disposed of and eight transferred. There were nine deaths during the period. The strength on 31st March 1954 was 126 as detailed below :—

| Breed.   | Cows. | Heifers. | Young bulls. | Breeding bulls. | Calves. | Work cattle. | Total. |
|----------|-------|----------|--------------|-----------------|---------|--------------|--------|
| (1)      | (2)   | (3)      | (4)          | (5)             | (6)     | (7)          | (8)    |
| Murrah   | 27    | 13       | 11           | 2               | 17      | ..           | 70     |
| Dharwar  | 5     | 2        | ..           | 1               | 3       | ..           | 11     |
| Scindhi  | 5     | 2        | 1            | 4               | 5       | ..           | 17     |
| Kangayam | 3     | ..       | ..           | ..              | ..      | 18           | 21     |
| Mysore   | ..    | ..       | ..           | ..              | ..      | 4            | 4      |
| Local    | ..    | ..       | ..           | ..              | ..      | 2            | 2      |
| Sahiwal  | ..    | ..       | ..           | ..              | ..      | 1            | 1      |
| Total    | 40    | 17       | 12           | 7               | 25      | 25           | 126    |

(b) Dairy.—Particulars of milk yield, etc., for each breed are given below :—

| Breed.  | Average number of cows in the herd. | Average number of cows in milk. | Total milk yield during the period. | Daily average yield per cow or cows in milk. | Daily average yield per cow for the herd. | Daily average yield per cow during 1952-53. |                       |
|---------|-------------------------------------|---------------------------------|-------------------------------------|----------------------------------------------|-------------------------------------------|---------------------------------------------|-----------------------|
|         |                                     |                                 |                                     |                                              |                                           | For cows in milk.                           | For cows in the herd. |
| (1)     | (2)                                 | (3)                             | (4)                                 | (5)                                          | (6)                                       | (7)                                         | (8)                   |
| Murrah  | 25.4                                | 20.3                            | LB.                                 | LB.                                          | LB.                                       | LB.                                         | LB.                   |
| Dharwar | 5                                   | 2.3                             | 46,864                              | 12.6                                         | 10.1                                      | 13.5                                        | 6.6                   |
| Scindhi | 5                                   | 3.2                             | 3,200                               | 7.6                                          | 3.5                                       | 7.7                                         | 4.8                   |
|         |                                     |                                 | 5,826                               | 10.0                                         | 6.4                                       | 14.1                                        | 7.2                   |

Particulars of some of the good performers which completed lactation during the period are as follows in respect of each breed :—

| Breed.  | Cow number. | Milk yield. | Number of days in milk. | Daily average for the lactation. |
|---------|-------------|-------------|-------------------------|----------------------------------|
|         |             | LB.         |                         | LB.                              |
| Murrah  | 19          | 5,436       | 403                     | 13.4                             |
| Scindhi | 523         | 6,384       | 397                     | 16.0                             |

28. District Livestock Farm, Pudukkottai—(a) Strength.—The strength on 1st October 1953 was 132. There were 22 births, 3 receipts, 8 disposals and 3 deaths during the period. The strength on 31st March 1954 was 146 as detailed below :—

| Breed.      | Cows. | Heifers. | Young bulls. | Breeding bulls. | Calves. | Work cattle. | Total. |
|-------------|-------|----------|--------------|-----------------|---------|--------------|--------|
| Scindhi     | 15    | 12       | 4            | 3               | 11      | ..           | 45     |
| Kangayam    | 22    | 12       | 15           | 4               | 17      | 8            | 78     |
| Sahiwal     | 2     | ..       | ..           | ..              | 1       | ..           | 3      |
| Cross breed | 6     | 4        | ..           | 1               | 4       | 1            | 16     |
| Murrah      | ..    | ..       | ..           | 4               | ..      | ..           | 4      |
| Total       | 45    | 28       | 19           | 12              | 33      | 9            | 146    |

(b) (i) Particulars of milk yield, etc., for each breed are given below :—

| Breed.      | Average number of cows in the herd. | Average number of cows in milk. | Total milk yield during the period. | Daily average yield per cow. |                       | Daily average yield per cow in 1952-53. |                       |
|-------------|-------------------------------------|---------------------------------|-------------------------------------|------------------------------|-----------------------|-----------------------------------------|-----------------------|
|             |                                     |                                 |                                     | For cows in milk.            | For cows in the herd. | For cows in milk.                       | For cows in the herd. |
|             |                                     |                                 |                                     | LB.                          | LB.                   | LB.                                     | LB.                   |
| Scindhi     | 14.5                                | 6.9                             | 15,027                              | 12.0                         | 5.7                   | 10.0                                    | 6.3                   |
| Kangayam    | 22.2                                | 8.3                             | 10,456                              | 7.0                          | 2.6                   | 5.5                                     | 4.0                   |
| Sahiwal     | 2.0                                 | 1.4                             | 2,334                               | 9.2                          | 6.4                   | 8.5                                     | 3.4                   |
| Cross breed | 5.2                                 | 4.0                             | 9,077                               | 12.6                         | 9.7                   | 7.3                                     | 7.3                   |

(ii) Particulars of some of the good performers which completed lactation during the period are given below for each breed :—

| Breed.   | Cow number. | Milk yield. | Number of days in milk. | Daily average for the lactation. |
|----------|-------------|-------------|-------------------------|----------------------------------|
|          |             | LB.         |                         | LB.                              |
| Scindhi  | 493         | 7,748       | 553                     | 14.0                             |
| Do.      | 61          | 3,792       | 300                     | 12.6                             |
| Kangayam | 853         | 2,945       | 300                     | 9.8                              |
| Do.      | 855         | 2,454       | 255                     | 9.6                              |
| Sahiwal  | 51          | 4,512       | 375                     | 12.0                             |

29. Mortality in all farms.—(i) There has been a total mortality of 46 animals in all the farms during the period as against 65 of the previous period (1st April to 30th September 1953) of which 26 were in white cattle and 20 in buffaloes. Out of 26 in cattle 12 were among young calves and out of 20 in buffaloes 16 were among young calves.

(ii) Majority of the animals that died during the period at the District Livestock Farm, South Kanara, were Murrah buffalo young calves which were adversely affected by the prevailing monsoon in the month of October 1953.

(iii) The percentage of mortality on the various farms is as follows :—

|                                               |    |    |    |      |
|-----------------------------------------------|----|----|----|------|
| Livestock Research Station, Hosur Cattle Farm | .. | .. | .. | 1.56 |
| District Livestock Farm, South Kanara         | .. | .. | .. | 4.54 |
| District Livestock Farm, Malabar              | .. | .. | .. | 6.92 |
| District Livestock Farm, Pudukkottai          | .. | .. | .. | 2.1  |

*Season and crop.*

30. *Livestock Research Station, Hosur Cattle Farm*—(i) *Rainfall*.—The total rainfall during the period was 16.08 inches in 29 days. The rains during September and October were favourable and the growth of grass was normal. Hay-making operations commenced in the third week of November.

(ii) *Pasture*.—One thousand and seventy-nine acres remained under pastures and a major portion of this area was under spear grass. The other grasses cultivated were Guinea, buffalo, Kolakkattai, Rhodes, etc., in about 30 acres.

Six hundred and ninety-six acres of the pasture were utilized for hay-making.

(iii) *Silage*—(a) *From pastures*.—One silopit was filled with cholam, buffalo grass and guinea grass, the total quantity ensilaged being 176,208 lb.

(b) *From cultivated lands*.—(i) A total quantity of 950,644 lb. of silage was made in three silopits with green fodder obtained through cultivated garden lands.

(ii) *Hay-making*.—Hay-making operations were started on 22nd November 1953 and continued till 23rd January 1954. Fifteen stacks were put up during the period. 696.21 acres were utilized for hay-making. The quantity of hay obtained from these paddocks which covers stacked hay, loose hay and amount of green grass as such converted into hay comes to 1,182,978 lb. thus giving an average of 1,843 lb. per acre.

(iii) Leaving the area under hay-making and that mentioned in the beginning of the report, viz., 15 acres of Guinea grass, 2.30 acres of buffalo grass, 2 acres of Kolakkattai grass and 10 acres of Rhodes grass mixture, the rest was utilized for grazing systematically. The area under hay-making was closed from October 1953 to January 1954 and that portion was also utilized for grazing during the rest of the period.

(iv) *Fodder supply*.—The position regarding supply of green fodder was fairly satisfactory. The total quantity of fodder issued was 1,605,207 lb.

31. *District Livestock Farm, South Kanara*—(i) *Rainfall*.—The rainfall during the period was 27.67 inches in 33 days.

(ii) *Pasture and cultivation*.—The total area under pasture is about 500 acres, under irrigated crops 2.5 acres and under rain-fed crops 18.65 acres. Particulars of area harvested, yield, etc., are given below :—

| Name of crop. | Area harvested in acres. | Total yield.             |         |
|---------------|--------------------------|--------------------------|---------|
|               |                          | Green fodder straw, etc. | Grain.  |
|               |                          | LB.                      | LB.     |
| Horse gram    | ..                       | 2.0                      | 6,000   |
| Sunhemp       | ..                       | 1.9                      | 8,040   |
| Paddy         | ..                       | 4.5                      | 6,720   |
| Cholam        | ..                       | 0.75                     | 3,500   |
| Guinea grass  | ..                       | 5.5                      | 29,000  |
| Hay           | ..                       | 580.0                    | 485,108 |

(iii) *Silage-making*.—Five lakhs forty-eight thousand and five hundred pounds of grass were ensilaged in nine silopits during the period.

(iv) *Hay-making*.—About 436,000 lb. of hay were stacked in nine hay-stacks.

32. *District Livestock Farm, Malabar*—(i) *Rainfall*.—The total rainfall during the period was 27.06 inches in 35 days. The incidence and distribution of rains during the period were very favourable and the growth of crops satisfactory.

(ii) *Pasture and cultivation*.—The total area under pasture was 81 acres and that under cultivation about 70 acres (irrigated 3.8 acres and non-irrigated 66 acres).

(iii) Particulars of crops harvested during the period are given below :—

|                                                                                          | Kind of fodder.                                 | Area harvested. | Yield. |         |
|------------------------------------------------------------------------------------------|-------------------------------------------------|-----------------|--------|---------|
|                                                                                          |                                                 |                 | ACS.   | LB.     |
| (i) Irrigated garden lands                                                               | .. Different kinds of grass.                    | 3.4             |        | 70,929  |
| (ii) Non-irrigated garden lands.                                                         | Grasses, cholam, teosinte, sunnhemp, ragi, etc. | 32.67           |        | 220,803 |
| (iii) Pasture area                                                                       | .. Different kinds of grass.                    | 60.37           |        | 277,263 |
| (iv) <i>Silage making</i> .—The quantity of silage made during the period was 35,540 lb. |                                                 |                 |        |         |

33. *District Livestock Farm, Pudukkottai*.—(i) This farm had a total extent of 4.02 acres for fodder production at the beginning of the period and this has been gradually increased to 6.28 acres at the end of the period by reclaiming and getting under cultivation all the available land (2.26 acres) at the Veterinary Hospital Compound.

(ii) The total quantity of green fodder produced during the period was 156,814 lb.

34. The cost of management of the several livestock farms during 1st October 1953 to 31st March 1954 is furnished below :—

| Farms.                                          | Receipts. |    |    | Expenditure. |    |    |
|-------------------------------------------------|-----------|----|----|--------------|----|----|
|                                                 | RS.       | A. | P. | RS.          | A. | P. |
| 1 Livestock Research Station, Hosur Cattle Farm | 43,190    | 1  | 11 | 2,01,375     | 8  | 10 |
| 2 District Livestock Farm, South Kanara         | 31,146    | 14 | 0  | 86,054       | 5  | 3  |
| 3 District Livestock Farm, Malabar              | 11,565    | 10 | 0  | 51,209       | 11 | 3  |
| 4 District Livestock Farm, Pudukkottai          | 7,248     | 12 | 6  | 33,460       | 5  | 3  |
| 5 Salvage Farm, Kancha                          | 23,013    | 0  | 0  | 24,431       | 0  | 0  |
| 6 Sheep Farm, Ootacamund                        | 558       | 0  | 0  | 14,861       | 13 | 9  |
| Total                                           | 1,16,722  | 6  | 5  | 4,11,392     | 12 | 4  |

It may be stated that the object of the farms are (a) the production of pure-bred bulls and (b) improvement of cattle, etc., of the breed selected and stocked by selective breeding. The working of the farms has to be judged against these objects. The farms other than Hosur opened in recent years have not been fully established with all the facilities and equipment for successful stock raising.

35. *Livestock Research Station, Hosur Cattle Farm*—

|                                      | RS.      | A. | P. |
|--------------------------------------|----------|----|----|
| Receipts                             | 43,190   | 1  | 11 |
| Expenditure on maintenance of cattle | 1,32,433 | 10 | 1  |

The farm issued 30 bulls during the period as against 65 bulls during the year 1952-53. At the end of the period the farm had 309 young bulls (161 Scindhi, 92 Kangayam, 35 Gir and 19 cross-bred). With the revival of the Male Stock Distribution Scheme ordered to be done during 1954-55, a large number of bulls will be distributed. There is a great demand for Scindhi and Gir bulls from other States.

36. *District Livestock Farm, South Kanara*—

|                                      | RS.    | A. | P. |
|--------------------------------------|--------|----|----|
| (i) Receipts                         | 31,146 | 14 | 0  |
| Expenditure on maintenance of cattle | 60,789 | 13 | 0  |

(ii) The cattle on the West Coast are generally small in size and of low efficiency both in milk production and work. The object of this farm (and that of Malabar) is to improve the local type of cattle and to introduce other suitable breeds. With this purpose, Scindhi, Gir and local breeds of cattle and Murrah and Dharwar breed of buffaloes are maintained for comparative study.

(iii) The farm is situated at a distance of about 40 miles from Mangalore and has been able to continue to market its milk to Mangalore. This has contributed to the receipts.

(iv) The farm issued one bull and the number of young bulls in the different breeds is 33.

### 37. District Livestock Farm, Malabar—

|                                        | RS.    | A. | P. |
|----------------------------------------|--------|----|----|
| (i) Receipts .. .. .                   | 11,565 | 10 | 0  |
| Expenditure (maintenance of cattle) .. | 23,967 | 7  | 3  |

(ii) The approach road to the farm is still under construction by the Public Works Department. Much pioneering work has been done during the period. Only 1½ acres of shrubs were cleared during the period. Clearing with human labour, especially stump removal, is a costly and laborious item of work which can be much simplified if only a bull-dozer is allotted to this farm.

(iii) A small herd of Scindhi cattle and Murrah buffaloes with a few Tellicherry goats are maintained. This farm has not been so successful as the South Kanara farm in disposal of milk due to lack of facilities.

(iv) The farm issued eight bulls during the period for stud purposes. At the end of the period, the farm had a strength of twelve young bulls both in Murrah and Scindhi breeds.

### 38. District Livestock Farm, Pudukkottai—

|                                        | RS.    | A. | P. |
|----------------------------------------|--------|----|----|
| (i) Receipts .. .. .                   | 7,248  | 12 | 6  |
| Expenditure (maintenance of cattle) .. | 18,787 | 12 | 9  |

(ii) The farm has only seven acres of land situated in the town. There was a total extent of 4.02 acres for fodder production at the beginning of the period and this has been gradually increased to 6.28 acres at the end of the period.

(iii) The proposal to acquire 1,000 acres of grazing areas in the near by reserve forest is under consideration. If the additional area is secured, the farm can be developed into a dairy farm as there is a good market for milk. One Kangayam bull was issued and the strength of the young bulls at the end of the period was 19.

### 39. Salvage Farm at Kambakkam Kancha :—

|                     | RS.    |
|---------------------|--------|
| Receipts .. .. .    | 23,013 |
| Expenditure .. .. . | 24,431 |

40. (1) *Cattle improvement and development.*—The particulars of bulls issued from the farms for stud purposes are given below :—

| Name of Farm.                                         | Number of bulls issued. |
|-------------------------------------------------------|-------------------------|
| 1 Livestock Research Station, Hosur Cattle Farm .. .. | 30                      |
| 2 District Livestock Farm, South Kanara .. ..         | 1                       |
| 3 District Livestock Farm, Malabar .. ..              | 8                       |
| 4 District Livestock Farm, Pudukkottai .. ..          | 1                       |

(2) *Kangayam Cattle Improvement scheme.*—(a) This Indian Council of Agricultural Research Scheme has been functioning since 31st July 1942. The last sanction expired on 31st March 1954. Proposals for the extension of the scheme for a further period of three years from 1st April 1954 have been approved by the Indian Council of Agricultural Research and sanction of Government has been accorded for a further period of three years from 1st April 1954.

(b) The object of the scheme is to improve the milking qualities of the Kangayam cow without impairing the draught qualities of the male by selective breeding and management.

(c) *Strength.*—The strength of livestock on 1st October 1953 to 31st March 1954 is given below :—

| Particulars of stock.               | Strength on 1st October 1953. | Strength on 31st March 1954. |
|-------------------------------------|-------------------------------|------------------------------|
| Cows in milk .. .. .                | 67                            | 64                           |
| Dry and nearing parturition cows .. | 52                            | 41                           |
| Heifers over two years old .. ..    | 39                            | 28                           |
| Heifers over one year old .. ..     | 31                            | 32                           |
| Heifer-calves below one year old .. | 36                            | 34                           |
| Young bulls over two years old ..   | 25                            | 31                           |
| Young bulls over one year old ..    | 37                            | 36                           |
| Bull-calves below one year old ..   | 50                            | 54                           |
| Bullocks .. .. .                    | 52                            | 66                           |
| Breeding bulls .. .. .              | 4                             | 4                            |
|                                     | <hr/> 393                     | <hr/> 390                    |

(d) *Milk yield.*—There were on an average 60.7 cows in milk and they yielded 55,362 lb. of milk with a daily individual average of 5 lb. as against 5.7 lb. in the year 1952-53.

(e) *Calvings.*—There were 58 births of which 33 were bull-calves and 25 heifer-calves. Of these, two were deformed at birth and one still-born. All the other calves were normal.

(f) Particulars of birth weights of calves are given below :—

|                                             | 1st October 1953 to 31st March 1954. | 1952-53. |
|---------------------------------------------|--------------------------------------|----------|
|                                             | LB.                                  | LB.      |
| Average birth weight of a calf .. ..        | 42.4                                 | 40.2     |
| Average birth weight of a bull-calf .. ..   | 44.2                                 | 42.7     |
| Average birth weight of a heifer-calf .. .. | 40.1                                 | 38.4     |
| Maximum birth weight of a calf .. ..        | 50.0                                 | 57.0     |
| Minimum birth weight of a calf .. ..        | 22.0                                 | 28.0     |

(g) *Experimental work.*—Records of milk yields of cows, fat content in milk and pedigree are being maintained.

(h) The udder of each pregnant heifer is massaged about 6 to 8 weeks before calving with a view to stimulating milk secretion and remove nervousness of the animals when they come to lactation.

(i) The birth weight of calves is recorded and the weight of each calf taken every fortnight in order to study the rate of growth.

(j) Work bullocks are tested for mhoote work ploughing fields and dragging loads and records maintained. For this purpose, a committee of local experts has been constituted.

(3) *Scheme for the salvage of dry cows.*—(a) *Strength.*—On 1st October 1953 there were 265 cows and on 31st March 1954 there were 228. Particulars of cows admitted, etc., are given below :—

|                                                   | 1st October 1953 to 31st March 1954. | 1952-53. |
|---------------------------------------------------|--------------------------------------|----------|
| 1 Number of cows on hand on 1st October .. ..     | 265                                  | 290      |
| 2 Number of cows admitted during the period ..    | 115                                  | 152      |
| 3 Number of cows returned after calving .. ..     | 103                                  | 136      |
| 4 Number of cows returned before calving .. ..    | 32                                   | 39       |
| 5 Number of cows returned as unfit for salvage .. | 11                                   | 14       |
| 6 Number of cows that died during the period ..   | 6                                    | 6        |
| 7 Number of cows on hand on 31st March .. ..      | 228                                  | 247      |

(b) *Breeding bulls*.—There were 4 Ongole, 2 Scindhi and one Gir bulls in the farm as on 31st March 1954. They performed 190 services during the period.

(c) *Agricultural operations, pasture, etc.*—(i) *Rainfall*.—There were good rains during October and November 1953. Sufficient grazing was available till the end of February 1954.

(ii) Fodder crops were raised in 12.48 acres in all. Details of harvests during the period are given below :—

| Crops grown.                        |  |  |  | Area. | Yield. |       |
|-------------------------------------|--|--|--|-------|--------|-------|
|                                     |  |  |  | ACS.  | TONS.  | LB.   |
| Australian drought resistant grass. |  |  |  | 1.9   | 25     | 708   |
| Maize .. .. .                       |  |  |  | 4.2   | 19     | 1,609 |
| Cholam .. .. .                      |  |  |  | 6.38  | 26     | 1,730 |

(iii) Out of the above yield, over 36 tons of maize and cholam were ensilaged and the balance fed to animals.

(4) *Artificial insemination*.—(a) The four Artificial Insemination Centres at Madras, Coimbatore, Madurai and Ootacamund were functioning during the period.

(b) Particulars regarding number of bulls, number of collections, inseminations, etc., are given below :—

(i) *Artificial Insemination Centre, Madras*.—Two Scindhi, two Ongole and two Murrah buffalo bulls were maintained at the Madras Veterinary College for use of this centre. One hundred and seventy-two collections were made and 2,090 inseminations done. Two hundred and sixty-seven cases of pregnancy were verified and 37 calves inspected during the period.

(ii) *Artificial Insemination Centre, Coimbatore*.—Three Scindhi bulls, one Kangayam bull and one Murrah buffalo bull were maintained at the Veterinary Hospital, Coimbatore, for the use of this centre. Two hundred and fourteen collections were made and 3,143 inseminations done. Three hundred and fifty-nine cases of pregnancy were verified and 276 calves inspected during the period. Thirteen cases of sterility were also handled.

(iii) *Artificial Insemination Centre, Madurai*.—One Kangayam bull, one Scindhi and one Murrah buffalo bull were maintained at the Veterinary Hospital, Tallakulam, for the use of this centre. Ninety-four collections were made and 436 inseminations done. Two hundred and fifty-eight cases of pregnancy were verified and 55 calves inspected during the period. Fifteen cases of sterility were also handled.

(iv) *Artificial Insemination Centre, Ootacamund*.—One Holstein Friesian bull, one Murrah buffalo bull and one Scindhi bull at the Veterinary Hospital, Ootacamund, and one Jersey bull at the Veterinary Hospital, Coonoor, were maintained for use of this centre. One hundred and fourteen collections were made and 562 inseminations done. One hundred cases of pregnancy were verified and 148 calves inspected during the period. Thirty-one cases of sterility were also handled.

(v) *Re-inseminations*.—About 10 per cent of the inseminated animals came back for re-inseminations at various intervals. There were a number of cases in which cows that did not conceive through natural services were successfully inseminated.

(vi) *Experimental work—Semen studies*.—All the semen samples collected were evaluated for various characteristics. Representative samples were taken periodically and their morphology and concentration studied. The semen of all the breeding bulls used for artificial insemination was of high quality. Study of the percentage of abnormal sperms was undertaken in the semen samples used for artificial insemination work and the percentage was found to be within the normal range.

(vii) *Sterility cases*.—A routine examination of the cows brought for artificial insemination was carried out and it was observed that Granular vaginitis, Cervicitis, Cystic ovaries, Anoestrous conditions, Endometritis and Pyometra were

mainly responsible for the large percentage of non-conception among cows. Whenever such cases were met with, the owners were advised to have the cases treated at the nearest Veterinary Institution. The total number of cases of infertility handled during the period was 59.

(5) *Key Village Scheme*.—(a) (i) *Key Village Centres*.—There were five Key Village Centres on 1st October 1953. Two additional centres were opened at Mulanur and Sankarandampalayam during March 1954. The total Key Village Centres as on 31st March 1954 are given below :—

| Name of Key Village (Artificial Insemination Centre).                                              | Breeding tract.  | Number of Key Villages attached to the Centre. |
|----------------------------------------------------------------------------------------------------|------------------|------------------------------------------------|
| Vellakoil .. .. .                                                                                  | Kangayam .. .. . | 4                                              |
| Kangayam .. .. .                                                                                   | Do. .. .. .      | 4                                              |
| Anamalai (Cinchona).                                                                               | Scindhi .. .. .  | 4                                              |
| Anamalai (Valparai) (since shifted to Malayandipatnam on 31st March 1954 Kangayam Breeding tract). | Do. .. .. .      | 4                                              |
| Livestock Research Station Cattle Farm.                                                            | Hallikar .. .. . | 4                                              |
| Mulanur .. .. .                                                                                    | Kangayam .. .. . | 4                                              |
| Sankarandampalayam.                                                                                |                  |                                                |

(ii) Details of work done in the abovementioned Key Village Centres are tabulated below :—

| Name of Key Village (Artificial Insemination Centre). | Number of bulls in the centre and Key villages.                                                                                                        | Number of semen collections made. | Number of inseminations done. | Number of natural services performed. |
|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------------------------|---------------------------------------|
| (1)                                                   | (2)                                                                                                                                                    | (3)                               | (4)                           | (5)                                   |
| Vellakoil .. .. .                                     | 8                                                                                                                                                      | 168                               | 1,389                         | 257                                   |
| Kangayam .. .. .                                      | 7                                                                                                                                                      | 214                               | 2,086                         | 254                                   |
| Anamalais (Cinchona) .. .. .                          | 7                                                                                                                                                      | 56                                | 158                           | 51                                    |
| Anamalais (Valparai) .. .. .                          | 10                                                                                                                                                     | 7                                 | 2                             | 82                                    |
| Hosur Cattle Farm .. .. .                             | 12                                                                                                                                                     | 104                               | 554                           | 152                                   |
| Mulanur .. .. .                                       | Though the centres were opened on 4th March 1954, the regular work was not commenced, but preliminary work like house-to-house survey, etc., was done. |                                   |                               |                                       |
| Sankarandampalayam .. .. .                            |                                                                                                                                                        |                                   |                               |                                       |

Inseminated cows are periodically verified for pregnancy and re-inseminations done wherever necessary.

(iii) In fertile cases with infantile Genitalia and cows that had calved once or twice but not come to heat subsequently with atrophy of the genitalia have been treated successfully by feeding them with germinated gram.

(b) (i) *Key Farm Centres in private institutions*.—The six Key Farm Centres opened in 1952-53 shown below continued to function during the period :—

Palayakottai—Palayakottai Cattle Farm.  
Neikarapatty—Narendra Dairy Farm.  
Idayakottai—Idayakottai Cattle Farm.  
Kilamoongiladi—Gandhi Ashram.  
Valarpuram, Kilacheri—Madras Co-operative Milk Supply Union.

(ii) Details of work done in the above Key Farm Centres are given below :—

| Name of Key Farm Artificial Insemination Centre. | Number of bulls stationed at the centre. | Natural services. | Number of semen collections made. | Number of inseminations done. |
|--------------------------------------------------|------------------------------------------|-------------------|-----------------------------------|-------------------------------|
| (1)                                              | (2)                                      | (3)               | (4)                               | (5)                           |
| Palayakottai .. .. .                             | 6                                        | 371               | 28                                | 90                            |
| Neikarapatti .. .. .                             | 7                                        | 112               | 157                               | 720                           |
| Idayakottai .. .. .                              | 6                                        | 48                | 67                                | 748                           |
| Kilamoongiladi .. .. .                           | 6                                        | 8                 | 97                                | 348                           |
| Valarapuram .. .. .                              | 6                                        | 6                 | 49                                | 158                           |
| Kilacheri .. .. .                                | 6                                        | 39                | 72                                | 245                           |

(6) *Village Livestock Improvement Scheme.*—(a) The general features of the scheme worked out by this department and through co-operative societies are that all the unwanted male stock in the area should be castrated and only the services of the approved bulls be made available to the cows in the areas. The animals around the area should be protected against all cattle diseases. The cows and the progeny should be tattooed and necessary records with regard to breeding, pedigree, production, etc., maintained. The scheme also provides for payment of a subsidy of Rs. 5 per mensem for heifer-calves born to the cows registered for proper maintenance.

(b) The firkas which have been allotted to this department for working this scheme are Saliangalam (Tanjore district), Malli (Ramanathapuram district) and Kumbla (South Kanara district). The two firkas Alur (Bellary district) and Dendalur (West Godavari district) which were in this State are now under the control of Animal Husbandry Department of Andhra State from 1st October 1953.

(c) A summary of work done by this department in the above is given below :—

(i) *Saliangalam.*—Three Umbalacheri breeding bulls are stationed at this centre. During the period of this report these bulls performed 114 services and the number of calves born was 39. The Livestock Improvement Act is in force in this area.

(ii) *Malli.*—Two Kangayam and two Murrah buffalo bulls are stationed here of which two (one Kangayam and one Murrah buffalo) did not commence serving. The other two bulls served 100 animals. Ten calves were born and they were inspected. The number of cows and buffaloes registered was 100. The number of calves inspected for payment of subsidy was 6. The Livestock Improvement Act was in force in this area also.

(iii) *Kumbla.*—The buildings and equipment have been got ready but work has not yet started. The area is under the Community Project Administration. The question as to whether the scheme should not be worked by this department or by the Community Project Department has not been decided.

(7) *Co-operative Cattle Breeding Associations, Societies, etc.*—The Anamalai Hills Cattle Society continues to work for the improvement of the Scindhi Breed. Two Key Village (Artificial Insemination) Centres are also working in this place, one at Cinchona and the other at Valparai.

(8) *The Anchetty Cattle Breeding Society in Salem district.*—There were four Halliker breeding bulls on 1st October 1953, out of which one was removed from the Premium Scheme and one bull purchased was included in the scheme. Thus at the end of the period there were four bulls in the scheme. The Society has purchased five new bulls to be included in the Premium Scheme. The total number of services performed by the bulls was 130. Out of 56 calves born, 54 were inspected.

(9) *Mecheri Co-operative Cattle Breeding Society.*—(i) This society was revived during the period and the by-law modified to create better interest among the custodians. The society has purchased eight Hullikar bulls and they are to be included in the Premium Scheme.

(ii) There is a Co-operative Cattle-Breeding Society at Odugathur in North Arcot district. This was started in 1949 with six bulls. But during the period of this report there were only two bulls and even these two bulls did not perform any service as they were not being maintained properly. This Society is not functioning satisfactorily.

(10) The Kalasapakkam Co-operative Cattle-Breeding Society in North Arcot also continued to function. There are two Kangayam bulls owned by this Society and included in the Premium Scheme. The total number of services done by both the bulls during the period was 36.

(11) The Kannivadi Cattle-Breeding Society in Madurai district owns ten bulls distributed to suitable custodian. These bulls have been included in the Premium Scheme. A stockman compounder has been specially sanctioned for this Society.

(12) *Bulls under Premium Scheme.*—At the end of the year under report there were 460 bulls under the Premium Scheme. They performed 14,197 services. Four thousand one hundred and forty-nine calves were born and 3,073 calves were inspected by the staff during the period.

41. *Grants-in-aid to district boards.*—(a) The total number of bulls in this scheme as on 31st March 1954 was 63. During the period these bulls served 5,096 animals. The number of calves born during the period was 1,117 and the number inspected was 896.

(b) The District Board, Salem, purchased four Kangayam bulls and the District Board, Coimbatore, purchased two bulls and distributed them to the ryots.

42. *Government Malestock Distribution Scheme.*—(a) No bulls were distributed under this scheme during the period. The total number of bulls (that had been distributed in previous years) under this scheme as on 31st March 1954 was 177, and they performed 4,598 services. Out of 1,413 calves born 930 calves were inspected during the period.

(b) The number of bulls stationed in Veterinary institutions for stud purposes as on 31st March 1954 was 98. They performed 3,331 services, 664 calves were born and 481 calves were inspected during the period.

43. *Other Schemes.*—(a) *Toda Welfare.*—(i) There were six Jafferbadi buffaloes and one calf with the Todas on 31st March 1954. It is reported that the Todas take little interest in the buffaloes entrusted to their care under the scheme.

(ii) There were about seventeen bulls in the National Extension areas in Salem, North Arcot and Madurai districts.

(b) *Local development works in Salem district.*—(i) Out of funds set apart for purchase of four breeding bulls only two bulls were purchased with 50 per cent contribution by the Gandhi Ashram, Tiruchengode.

(ii) The number of approved bulls in this State and the services performed during the periods 1st April to 30th September 1953 and 1st October 1953 to 31st March 1954 are furnished below :—

|                       | 1st April to 30th September 1953. | 1st October 1953 to 31st March 1954. | 1952-53. |
|-----------------------|-----------------------------------|--------------------------------------|----------|
| Number of bulls—      |                                   |                                      |          |
| Bulls .. .. .         | 1,126                             | 847                                  | 1,282    |
| Buffaloes .. .. .     | 301                               | 111                                  | 337      |
| Number of services—   |                                   |                                      |          |
| Bulls .. .. .         | 41,952                            | 24,641                               | 75,205   |
| Buffalo bulls .. .. . | 9,331                             | 3,487                                | 24,537   |
| Insemination .. .. .  | 7,667                             | 12,729                               | 10,540   |

*Private Dairies.*

44. There are a number of co-operative organizations, like milk supply unions in the important towns and cities which collect milk from rural parts and supply the same to residents in towns. Apart from the above, the following are the private dairies that were functioning during the period in the districts mentioned :—

| District.               | Particulars of the dairy.                                                                                                                                                                     |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tiruchirappalli .. .. . | 1 St. Joseph's College Dairy Farm, Tiruchirappalli.<br>2 Southern Railway Dairy Farm, Golden Rock.<br>3 Dalmia Cement Dairy Farm, Dalmiapuram.<br>4 Central Jail Dairy Farm, Tiruchirappalli. |
| Madurai .. .. .         | 1 Sacred Heart's College Dairy, Shenbaganur, Kodaikanal.<br>2 Narendra Dairy Farm, Neikarapatti.<br>3 Dairy Farm, Idayakottai.<br>4 Dairy Farm, "Angu Vilas", Dindigul.                       |
| Ramanathapuram .. .. .  | A private dairy at Kanadukathan.                                                                                                                                                              |
| Tirunelveli .. .. .     | 1 Vaniankulam Estate (Dairy Farm).<br>2 A private dairy run by the Missionaries of Donavoor.                                                                                                  |
| Nilgiris .. .. .        | Municipal Dairy, Ootacamund.                                                                                                                                                                  |
| Coimbatore .. .. .      | A private dairy at Modakurichi.                                                                                                                                                               |
| Malabar .. .. .         | 1 Dairy farm run by Sri M. K. Nambisson at Iritty.<br>2 Vijaya Dairy Farm, Badagara.                                                                                                          |

*Sheep and Goats.*

45. *Sheep breeding*—(a) *Sheep Farm, Ootacamund*—(i) *Strength*.—The strength on 1st October 1953 the changes which took place during the half-year and the strength on 31st March 1954 are tabulated below :—

| Particulars.                   | Rams. | Ewes. | Ram-lambs. | Ewe-lambs. | Total. | Scindhi cows. | Breed-ing bulls. |
|--------------------------------|-------|-------|------------|------------|--------|---------------|------------------|
| 1 Stock on 1st October 1953 .. | 82    | 223   | 53         | 48         | 406    | 2             | 2                |
| 2 Births .. .. .               | ..    | ..    | 9          | 19         | 28     | ..            | ..               |
| 3 Deaths .. .. .               | ..    | 6     | 1          | 3          | 10     | ..            | ..               |
| 4 Transfers .. .. .            | ..    | ..    | ..         | ..         | ..     | ..            | ..               |
| 5 Sales .. .. .                | 29    | ..    | ..         | 1          | 30     | ..            | ..               |
| Stock on 31st March 1954 ..    | 53    | 217   | 61         | 63         | 394    | 2             | 2                |

(ii) *Shearing and wool yield*.—Shearing was done during February and May 1954. A total quantity of 235 lb. of wool was obtained from 202 adults. The average wool yield was 1.16 lb.

The highest yield for a ram is 2 lb. 3½ oz. and for an ewe is 2 lb. 5½ oz.

(iii) *Season and rainfall*.—There was a rainfall of 14.22 inches during the period as against 14.36 inches during the corresponding period of the previous year.

(iv) *Cultivation and pasture*.—The following crops and grasses were tried with varying results during the period—Berseem, maize and oats. Due to non-availability of green grass during November to April on account of heavy frost, berseem oats and Italian rye produced at this farm were cut and kept as dry fodder for feeding the stock during lean periods. Cabbage seeds were sown in the nursery and the seedlings transplanted are being utilized for feeding the sheep. Acacia seedlings which were raised in the nursery were transplanted in the pasture area and near the

sheep sheds. Silage making was also carried out for the first time in the farm during the period. The silage pit was not yet opened and the result will be watched. Love grass, Pestuca grass and smooth broome of American origin continued to be on trial and the results are proving favourable. Pestuca grass and smooth broome withstood the forest well. Perennial rye and tuber grass which are also of American origin were tried with great success and they are also extended in the field.

(b) *Livestock Research Station, Hosur Cattle Farm*.—(i) A scheme known as the "Madras Sheep Breeding Scheme" sponsored by the Indian Council of Agricultural Research was functioning in this farm till 31st March 1952 when the Indian Council of Agricultural Research stopped financing the scheme. Since then that scheme is being run by this State in addition to the normal work of sheep breeding that had been going on in the farm.

(ii) The objects of sheep breeding are as follows :—

- (1) To evolve white woolly sheep for dual purpose.
- (2) To make available Bikanir rams for introduction among the flocks of woolly sheep in the State in order to improve their wool qualities.
- (3) To study the suitability of the Nilgiri breed to the conditions in the plains.

(iii) The following breeds of sheep are maintained in the farm :—

- (1) Bellary flock.
- (2) Bikanir flock.
- (3) Bikanir × Bellary graded flock.
- (4) Nilgiri rams.
- (5) Nilgiri × Bellary graded ewe.

(iv) A statement showing the receipts and disposal of sheep during the period 1st October 1953 to 31st March 1954 is given below :—

|                           | Stock on 1st October 1953. | Receipts. | Births. | Deaths. | Disposals. | Balance on 31st March 1954. |
|---------------------------|----------------------------|-----------|---------|---------|------------|-----------------------------|
| Bellary .. .. .           | 20                         | ..        | 8       | 5       | 2          | 21                          |
| Bikanir .. .. .           | 167                        | ..        | 15      | 13      | 25         | 144                         |
| Nilgiri rams .. .. .      | 3                          | ..        | ..      | ..      | 1          | 2                           |
| Bikanir × Bellary rams .. | 84                         | ..        | 11      | 5       | 24         | 66                          |
| Nilgiri × Bellary rams .. | 1                          | ..        | ..      | ..      | ..         | 1                           |
| Total .. .. .             | 275                        | ..        | 34      | 23      | 52         | 234                         |

(v) *Mating*.—Different rams of different breeds were allowed to mate different ewes of different breeds during October-November 1953 season and the results of mating are given below :—

| Serial number. | Number and breed of ram put for mating.  | October-November 1953 mating. |                        |                        |
|----------------|------------------------------------------|-------------------------------|------------------------|------------------------|
|                |                                          | Number of ewes put.           | Number of ewes served. | Number of lambs born.* |
| 1              | Bellary 796 .. .. .                      | 4                             | 4                      | 2                      |
| 2              | Bikanir 18 .. .. .                       | 19                            | 18                     | 1                      |
| 3              | Bikanir 17 .. .. .                       | 25                            | 24                     | 2                      |
| 4              | Bikanir 15 .. .. .                       | 25                            | 25                     | 5                      |
| 5              | Bikanir × Bellary—<br>Bikanir 15 .. .. . | 6                             | 5                      | 1                      |
| 6              | Bikanir × Bellary—<br>Bikanir 18 .. .. . | 6                             | 6                      | 3                      |
|                | Total .. .. .                            | 85                            | 82                     | 14                     |

\* The number of lambs born entered here are up to 31st March 1954. Further lambings are expected during April 1954.

NOTE.—Lambs born of ewes mated during April-May 1953 .. .. . 20  
October-November 1953 .. .. . 14

Total number of births for half-year ending 31st March 1954 .. .. . 34

(vi) *Shearing*.—The sheep were shorn by improved methods, viz., by means of improved hand shears and shearing machine. All the sheep were weighed after shearing. The average body weights are given below :—

| Serial number. | Breed.                           | Average body weight after shearing in pounds |       |            |       |
|----------------|----------------------------------|----------------------------------------------|-------|------------|-------|
|                |                                  | Adult.                                       |       | Yearlings. |       |
|                |                                  | Rams.                                        | Ewes. | Rams.      | Ewes. |
| 1              | Bellary .. .. .                  | 126-11                                       | 69- 8 | 72- 0      | 50- 0 |
| 2              | Bikanir .. .. .                  | 94- 2                                        | 57- 8 | 60- 0      | 39- 0 |
| 3              | Nilgiris .. .. .                 | 95- 0                                        | ..    | ..         | ..    |
| 4              | Bikanir × Bellary graded—        |                                              |       |            |       |
|                | First cross .. .. .              | ..                                           | 56- 0 | ..         | ..    |
| 5              | Second cross .. .. .             | 114- 0                                       | 64- 2 | 101- 0     | 53- 0 |
| 6              | Third cross .. .. .              | 147- 0                                       | 66-12 | 87- 1      | 52- 8 |
| 7              | Fourth cross .. .. .             | 89-12                                        | 49- 4 | 57- 0      | ..    |
| 8              | Nilgiri × Bellary—First cross .. | ..                                           | 64- 0 | ..         | ..    |

(vii) *Wool yield*.—Particulars of the sheep shorn, and the average wool yield are given below :—

*Bellary flock*.—Three rams and 11 ewes were shorn, which yielded 17 lb. 9 oz. of wool giving an average of 1 lb. 14 oz. and 1 lb. 9 oz. for rams and ewes respectively.

(viii) *Bikanir flock*.—Forty rams and 89 ewes were shorn which yielded 170 lb. and 5 oz. of wool giving an average of 1 lb. and 14 oz. and 1 lb. for rams and ewes respectively.

(ix) *Bikanir × Bellary graded flock*.—Nineteen rams and 27 ewes were shorn which yielded 65 lb. 13 oz. of wool giving an average of 2 lb. and 1 lb. 1 oz. for ram and ewes respectively.

(x) *Nilgiri rams*.—Two rams which were shorn which yielded 1 lb. 10 oz. of wool giving an average of 13 oz. per ram.

(xi) *Nilgiri × Bellary graded ewes*.—Only one ewe was shorn which yielded 0-14 oz. of wool.

(xii) A study of wool yield of sheep at different ages was carried out and their performances are as follows :—

| Breed.                    | Adult. |       | Yearling. |       |
|---------------------------|--------|-------|-----------|-------|
|                           | Rams.  | Ewes. | Rams.     | Ewes. |
|                           | LB.    | LB.   | LB.       | LB.   |
| Bellary .. .. .           | 2-15   | 0-14  | 1- 4      | 0-14  |
| Bikanir .. .. .           | 2- 4   | 1- 1  | 1- 7      | 0-15  |
| Nilgiris .. .. .          | 0-13   | ..    | ..        | ..    |
| Bikanir × Bellary—        |        |       |           |       |
| First cross .. .. .       | ..     | ..    | ..        | ..    |
| Second cross .. .. .      | 1-13   | 0-15  | 2- 2      | ..    |
| Third cross .. .. .       | 2-14   | 1- 0  | 1-10      | 1- 7  |
| Fourth cross .. .. .      | 2- 6   | 0-14  | 1-13      | ..    |
| Nilgiri × Bellary .. .. . | ..     | 0-14  | ..        | ..    |

(xiii) *Wool grading*.—All sheep were shorn on improved methods by means of hand shears and shearing machine. The clipped wool was graded and sorted according to the region of the body, colour, age, breed and quality. All the available wool was disposed of by sale in auction.

(xiv) *Mandya flock*.—The flock was introduced into this farm under the Five-Year Plan. The object in this is to make available Mandya rams for introduction among the flocks of hairy sheep in the State in order to improve their mutton qualities. The particulars of stock, receipts, etc., are given below :—

| Stock on 1st October 1953. | Births. | Deaths. | Disposals. | Stock on 31st March 1954. |
|----------------------------|---------|---------|------------|---------------------------|
| 123                        | 28      | 7       | 2          | 142                       |

(xv) *Mating*.—During the October-November mating season 42 ewes were mated to one ram. During the period 1st October 1953 to 31st March 1954, 11 lambs were born. The average birth weight of lambs was 5 lb. 2 oz.

(xvi) *Shearing*.—Sheep were shorn only once in a year. Those that had not been shorn during September 1953 were shorn during March 1954. Nine ram lambs and 18 ewe lambs just over one year of age were shorn and their average hair yield was 0-14 oz. and 0-11 oz. respectively.

46. (a) *Mortality of sheep in sheep farms*.—Comparative figures of mortality in the different farms during the period under report and the previous half year in 1953-54 are given below :—

|                                                | During the period 1st October 1953 to 31st March 1954. | During the period 1st April 1953 to 30th September 1953. | In the year 1952-53. |
|------------------------------------------------|--------------------------------------------------------|----------------------------------------------------------|----------------------|
| (1)                                            | (2)                                                    | (3)                                                      | (4)                  |
| Sheep Farm, Ootacamund ..                      | 10                                                     | 19                                                       | 32                   |
| Livestock Research Station, Hosur Cattle Farm. | 30                                                     | 39                                                       | 41                   |

(b) (i) The deaths were due to the following causes :

|                                  | 1st October 1953 to 31st March 1954. | 1st October 1952 to 31st March 1953. |
|----------------------------------|--------------------------------------|--------------------------------------|
| Enteritis .. .. .                | 3                                    | ..                                   |
| Cirrhosis of liver .. .. .       | 1                                    | ..                                   |
| Endo-carditis .. .. .            | 1                                    | ..                                   |
| Weakness and debility .. .. .    | 3                                    | ..                                   |
| Syncope .. .. .                  | ..                                   | 2                                    |
| Vegetative endo-carditis .. .. . | 1                                    | ..                                   |
| Obscure causes .. .. .           | ..                                   | 13                                   |
| Antipartum paralysis .. .. .     | 1                                    | ..                                   |
| Shock .. .. .                    | ..                                   | 1                                    |
|                                  | 10                                   | 16                                   |

(ii) *Livestock Research Station, Hosur Cattle Farm*.—

|                             |   |                               |    |
|-----------------------------|---|-------------------------------|----|
| Born weak .. .. .           | 4 | Pneumonia .. .. .             | 1  |
| John's disease .. .. .      | 1 | Rupture of heart .. .. .      | 1  |
| Endo-carditis .. .. .       | 1 | Anæmia and debility .. .. .   | 4  |
| Cachecia .. .. .            | 3 | Gastro-enteritis .. .. .      | 2  |
| Growth in the sinus .. .. . | 1 | Dystokia .. .. .              | 2  |
| Lethal factors .. .. .      | 2 | Meningitis .. .. .            | 1  |
| Veominous Txaemia .. .. .   | 4 | Pulmonary haemorrhage .. .. . | 1  |
| Pimpily gut .. .. .         | 2 |                               |    |
|                             |   |                               | 30 |

#### Sheep and Goat Development.

47. (a) (i) *Sheep Shearing and Demonstration Units*.—Out of six units working in the composite State on 30th September 1953, three remained in the residuary State and continued to function at Coimbatore, Madurai and Cuddalore during the period. Demonstrations on the improved methods of washing, shearing, grading of wool, etc., were conducted and propaganda regarding scientific management and breeding of sheep and goats carried out. Demonstrations on deworming and deticking done in selected centres and by recording the weights of treated and control groups

the fact that there was gain in weight through deworming in deticking operations was brought home to the flock-owners.

(ii) The work done by the units is given below :—

|                                                         |        |
|---------------------------------------------------------|--------|
| 1 Number of villages visited .. .. .                    | 54     |
| 2 Number of shearing demonstrations conducted ..        | 141    |
| 3 Number of sheep washed .. .. .                        | 3,199  |
| 4 Number of sheep shorn with improved hand shears ..    | 3,275  |
| 5 Number of shepherds trained in the art of shearing.   | 175    |
| 6 Number of castrations done .. .. .                    | 100    |
| 7 Number of sheep dewormed .. .. .                      | 3,917  |
| 8 Number of sheep deticked .. .. .                      | 14,422 |
| 9 Number of exhibitions and shows attended ..           | 14     |
| 10 Number of rams and bucks inspected ..                | 181    |
| 11 Number of societies, loan flocks, etc., inspected .. | 2      |

(b) *Grading scheme for mutton sheep.*—This scheme for grading up of local sheep in Hosur taluk of Salem district sanctioned for a period of six years and commenced in 1952–53 continued to function during the period under report with 48 rams. Two thousand, seven hundred and thirty-seven sheep were dewormed, 1,821 sheep deticked and 49 scrub rams castrated in the area during the period.

(c) *Goat rearing.*—(i) Breeding of Tellicherry goats continued at the District Livestock Farm, Malabar.

(ii) *Strength.*—The strength on 1st October 1953 was 44. There were 34 births, 2 disposals, 3 transfers and 6 deaths during the period. The strength on 31st March 1954 was 67 consisting of 1 buck, 26 does and 40 kids.

(iii) *Dairy.*—On an average there were 18.9 goats in the herd of which 11.5 remained in milk and yielded 5,051 lb. of milk with a daily individual average of 2.4 lb. for the goats in milk and 1.4 lb. for the herd as against 2.0 lb. and 0.7 lb. respectively for the corresponding period of the previous year.

(d) *Scheme for the improvement of milch goats in South Kanara district.*—On 1st October 1953, there were 11 bucks distributed under the Government Male Stock Distribution Scheme. Six bucks were distributed during the period, ownership in respect of one buck was declared and one buck died due to acute Tympanitis. The number of bucks in the scheme on 31st March 1954 was 15. The number of services performed by the bucks during the period was 470; the number of kids born was 274 and the number inspected 163.

## VI. POULTRY.

48. *Livestock Research Station, Hosur Cattle Farm.*—The breeds maintained in this farm are White Leghorn, Black Minorca and Rhode Island Red.

(a) *Strength.*—The strength on 1st October 1953 was 907. One hundred and eighty White Leghorn chicks were purchased. One thousand five hundred and thirty-two chicks were hatched out. Three hundred and fifty-nine chickens were sold for breeding; 185 birds were culled out and sold for table, 135 birds were transferred to Poultry Demonstration Units and other stations. Six hundred and fourteen birds died and 148 chickens (weaklings and affected with Avian Leucosis Complex) were destroyed. The stock on 31st March 1954 was 1,178 as detailed below :—

| Breed.                   | Cocks. | Hens. | Chicks. | Total. |
|--------------------------|--------|-------|---------|--------|
| White Leghorn .. .. .    | 13     | 38    | 409     | 460    |
| Rhode Island Red .. .. . | 12     | 51    | 521     | 584    |
| Black Minorca .. .. .    | 5      | 13    | 115     | 133    |
| Austrolop cross .. .. .  | ..     | ..    | 1       | 1      |
| Total .. .. .            | 30     | 102   | 1,046   | 1,178  |

(b) *Egg production.*—The opening balance on 1st October 1953 was 109 receipts, disposal, etc., during the period are given below :—

|                                   |       |
|-----------------------------------|-------|
| Stock on 1st October 1953 .. .. . | 109   |
| Receipt—                          |       |
| Collections .. .. .               | 9,162 |
| Purchases .. .. .                 | 232   |
| Total .. .. .                     | 9,503 |
| Disposal—                         |       |
| Kept for hatching .. .. .         | 3,496 |
| Sold for hatching .. .. .         | 3,604 |
| Sold for table .. .. .            | 1,489 |
| Transfers .. .. .                 | 175   |
| Broken and fed to chicks .. .. .  | 698   |
| Total .. .. .                     | 9,462 |

Balance on 31st March 1954 .. .. . 41

(c) *Laying hens.*—There were on an average 113.6 laying hens of all the breeds (White Leghorn, Rhode Island Red and Black Minorca) which yielded 9,503 eggs, giving an overall flock average of 83.6 eggs per hen for the half-year under report or 13.9 eggs per month per bird. Some of the high yielding pullets which completed their first year laying (pullet year) during the six months under report are given below :—

|                                         |           |
|-----------------------------------------|-----------|
| White Leghorn Pullet No. 592 .. .. .    | 201 eggs. |
| Rhode Island Red Pullet No. 589 .. .. . | 230 "     |
| Rhode Island Red Pullet No. 590 .. .. . | 274 "     |
| Rhode Island Red Pullet No. 591 .. .. . | 218 "     |
| Rhode Island Red Pullet No. 602 .. .. . | 203 "     |

49. *Poultry Research Station, Madras.*—The breeds maintained in this Station are White Leghorn, Rhode Island Red, Black Minorca, Light Sussex and some indigenous birds.

(a) *Strength.*—The stock on 1st October 1953 was 503 (499 chickens and 4 geese). One thousand and sixty-six chicken were received by hatch. Four hundred and forty-eight birds were sold for breeding, 199 for table and 23 were transferred to other stations. One hundred and forty-one birds died or were destroyed. The balance on 31st March 1954 was 758 as detailed below :—

| Breed.                   | Cocks. | Hens. | Chickens. | Total. |
|--------------------------|--------|-------|-----------|--------|
| White Leghorn .. .. .    | 7      | 33    | 69        | 109    |
| Rhode Island Red .. .. . | 10     | 41    | 324       | 375    |
| Black Minorca .. .. .    | 4      | 19    | 59        | 82     |
| Light Sussex .. .. .     | 3      | 13    | 26        | 42     |
| Indigenous .. .. .       | 4      | 17    | 125       | 146    |
|                          | 28     | 123   | 603       | 754    |
| Geese .. .. .            | ..     | ..    | ..        | 4      |
| Total .. .. .            |        |       |           | 758    |

(b) *Performance of birds.*—(i) Trapnesting was done for all the laying birds at the farm throughout the period. The following was the average production :—

| Breed.                 | Average number of laying hens. | Number of eggs collected. | Average egg yield per half-year. |
|------------------------|--------------------------------|---------------------------|----------------------------------|
| White Leghorn .. ..    | 32                             | 892                       | 27.8                             |
| Rhode Island Red .. .. | 44                             | 1,133                     | 25.7                             |
| Black Minorca .. ..    | 19                             | 652                       | 34.3                             |
| Light Sussex .. ..     | 13                             | 251                       | 19.3                             |
| Indigenous .. ..       | 17                             | 641                       | 37.7                             |

*Remarks.*—Due to adverse seasonal conditions, the majority of the laying birds continued to be in moult thus affecting their production.

(ii) Comparative figures of body weight of the different breeds of birds in the farm are given below :—

| Breed.                 | 1953-54<br>(second half-year). |     | 1953-54<br>(first half-year). |     | 1952-53. |     |
|------------------------|--------------------------------|-----|-------------------------------|-----|----------|-----|
|                        | LB.                            | OZ. | LB.                           | OZ. | LB.      | OZ. |
| White Leghorn .. ..    | 3                              | 10  | 3                             | 9   | 3        | 10  |
| Rhode Island Red .. .. | 5                              | 4   | 5                             | 5   | 5        | 6   |
| Black Minorca .. ..    | 3                              | 10  | 3                             | 12  | 3        | 12  |
| Light Sussex .. ..     | 5                              | 4   | 5                             | 6   | 5        | 8   |
| Indigenous .. ..       | 3                              | 14  | 3                             | 14  | 3        | 14  |

(c) *Egg production.*—Particulars of stock, receipts, etc., for the period under report are given below :—

|                                    |       |
|------------------------------------|-------|
| Stock on 1st October 1953 .. ..    | 234   |
| <i>Receipts—</i>                   |       |
| Collections .. ..                  | 3,569 |
| Received from other stations .. .. | 1,839 |
| Total .. ..                        | 5,642 |
| <i>Disposal—</i>                   |       |
| Kept for hatching .. ..            | 2,816 |
| Sold for hatching .. ..            | 1,033 |
| Sold for table .. ..               | 1,038 |
| Broken and fed to chicks .. ..     | 264   |
| Transfer .. ..                     | 367   |
| Total .. ..                        | 5,518 |
| Balance on 31st March 1954 .. ..   | 124   |

(d) *Percentage of hatchability.*—Out of 2,816 eggs kept for hatching, 1,066 chicks were hatched out and 196 eggs have yet to hatch showing a percentage of 40.7 to the total number of eggs kept, 855 eggs were infertile thus showing a percentage of 60.3 to the fertile number of eggs kept for hatching.

(e) *Investigation and research.*—(i) *Selective breeding among indigenous breed of poultry.*—The experiment was taken up with a small group of birds, selected from the Kalahasti and Visakhapatnam localities. Selective breeding with the aim of increasing their egg yield and egg size lowering the period of broodiness and achieving comparatively early maturity was done among them. The results are satisfactory.

(ii) *Sexual maturity among country hens.*—Observations made in respect of hens that began first laying during the period showed that the average number of days taken for maturity is 230 days.

(iii) *Broodiness in country hens.*—Attempts to break down broodiness considerably by teasing the birds with young vigorous cockerels, etc., were continued during the period and it was observed that as a result broodiness was not so intense.

50. *District Livestock Farm, South Kanara.*—This farm is maintaining White Leghorn, Rhode Island Red, Desi and Rhode Island Red Desi birds.

(a) *Strength.*—On 1st October 1953 there were 286 birds. Two hundred and ninety-two chicks were received by hatch and 2 Rhode Island Red cocks received from another farm. One hundred and sixty birds were sold for table, 67 birds were culled out and sold, eight were transferred and 95 birds died. The strength on 31st March 1954 was 250 as detailed below :—

| Breed.                            | Cocks. | Hens. | Chicks. | Total. |
|-----------------------------------|--------|-------|---------|--------|
| Rhode Island Red .. ..            | 11     | 42    | 104     | 157    |
| White Leghorn .. ..               | 5      | 20    | 50      | 75     |
| Desi .. ..                        | ..     | 9     | ..      | 9      |
| Rhode Island Red Desi Cross .. .. | ..     | 4     | 5       | 9      |
| Total .. ..                       | 16     | 75    | 159     | 250    |

(b) *Egg production.*—Particulars of stock on 1st October 1953, receipts and disposals, etc., during the period are given below :—

|                                 |       |
|---------------------------------|-------|
| Stock on 1st October 1953 .. .. | 187   |
| Receipts (collections) .. ..    | 4,414 |
| Total .. ..                     | 4,601 |
| <i>Disposal—</i>                |       |
| Kept for hatching .. ..         | 724   |
| Sold for hatching .. ..         | 1,023 |
| Sold for table .. ..            | 1,949 |
| Fed to chicks, etc. .. ..       | 625   |
| Total .. ..                     | 4,321 |

Balance on 31st March 1954. .. .. 280

(c) *Performance of birds.*—Particulars of the average number of laying hens, egg yield, etc., during the period are given below :—

| Breed.                            | Average number of laying hens per month. | Egg yield for the period. | Average yield per month. | Average yield per hen per month. |
|-----------------------------------|------------------------------------------|---------------------------|--------------------------|----------------------------------|
| White Leghorn .. ..               | 22.1                                     | 1,201                     | 200.2                    | 9.3                              |
| Rhode Island Red .. ..            | 37.4                                     | 2,533                     | 422.2                    | 11.2                             |
| Desi .. ..                        | 9.9                                      | 411                       | 68.5                     | 6.9                              |
| Rhode Island Red Desi Cross .. .. | 5.2                                      | 269                       | 44.8                     | 8.8                              |

The average percentage of hatchability was 42.4.

51. *District Poultry Farm, Cannanore.*—This farm is maintaining Rhode Island Reds and White Leghorns.

(a) *Strength.*—On 1st October 1953 there were 554 birds. Three hundred and four birds were received by hatch, 197 birds were sold for breeding and 35 for

table and two transferred. Forty-nine birds died during the period. The balance on 31st March 1954 was 575 as detailed below :—

| Breed.                 | Cocks. | Hens. | Chicks. | Total. |
|------------------------|--------|-------|---------|--------|
| Rhode Island Red .. .. | 2      | 22    | 90      | 114    |
| White Leghorn .. ..    | 6      | 73    | 382     | 461    |
| Total .. ..            | 8      | 95    | 472     | 575    |

(b) *Egg production.*—Particulars of balance on 1st October 1953, receipts, disposal, etc., during the period are given below :—

|                                  |       |
|----------------------------------|-------|
| Stock on 1st October 1953 .. ..  | 35    |
| Receipts (collection) .. ..      | 6,594 |
| Total .. ..                      | 6,629 |
| Kept for hatching ... ..         | 1,171 |
| Sold for hatching .. ..          | 3,999 |
| Sold for table .. ..             | 1,281 |
| Fed to chicks .. ..              | 171   |
| Total .. ..                      | 6,622 |
| Balance on 31st March 1954 .. .. | 7     |

52. *Poultry Units in Veterinary Institutions.*—(i) Out of 40 Poultry Demonstration Units in Veterinary Institutions in the Composite State, 22 Units have been functioning in this State during the period.

(ii) Statement showing the receipts of birds and eggs in these Units are annexed.

(iii) The receipts and the cost of management of the Poultry Research Station, Madras and the District Poultry Farm, Cannanore, during the period from 1st October 1953 to 31st March 1954 are furnished below :—

| Farms.                              | Receipts. |       |                                         | Expenditure. |       |                |
|-------------------------------------|-----------|-------|-----------------------------------------|--------------|-------|----------------|
|                                     | Realized. |       | Value of birds, eggs, etc, transferred. | Recurring.   |       | Non-recurring. |
|                                     | RS.       | A. P. |                                         | RS.          | A. P. |                |
| 1 Poultry Research Station, Madras. | 1,438     | 9 6   | 124 8 0                                 | 7,780        | 12 5  | 5,065 14 8     |
| 2 District Poultry Farm, Cannanore. | 1,743     | 1 6   | 2,768 10 2                              | 2,741        | 12 5  | 2,737 0 0      |

(iv) The working of the Poultry Farms and the Demonstration Units in Veterinary Institutions shows that during the period under report 42,468 eggs were produced of which 19,892 were sold for setting and 10,399 used for hatching. Four thousand two hundred and forty-two chicks were hatched out. It would be seen that more than 70 per cent of eggs were sold or utilized for hatching which is highly satisfactory. One thousand seven hundred and seventy-five were sold for breeding and 665 for table.

Among the Poultry Farms, District Poultry Farm, Cannanore, sold 3,999 eggs, the largest number of eggs for hatching and hatched 1,171 chicks. The Livestock Research Station, Hosur Cattle Farm, and District Poultry Farm, Cannanore, had good records of sale for hatching. The production was lowest at District Livestock Farm, South Kanara, with 4,601 eggs and a sale of 1,023 for hatching.

(v) Among the Poultry Demonstration Units in Veterinary Institutions the Units at Kallakurichi, Tanjore, Tallakulam, Dharapuram, Kozhikode, Erode and Tiruppur produced more than 1,000 eggs and sold about 500 eggs for setting. Taking

the number of chicks hatched, the Veterinary Hospital, Dharapuram, leads with 276 chicks followed by Erode with 270 chicks. The other Institution hatching more than 100 chicks is Pollachi.

(vi) Some of the units, especially at Kaliyampundi, Kancheepuram, Nagapattinam and Salem produced less than 150 eggs. On the whole there has been an improvement in the poultry work with increase in yield and reduction in mortality and it is expected that the record of work in the following year will be still better.

(vii) A statement of mortality among poultry in Farms during the period 1st October 1953 to 31st March 1954 is appended below :—

| Farms.                                           | Deaths. | Percentage of mortality. |
|--------------------------------------------------|---------|--------------------------|
| 1 Livestock Research Station, Hosur Cattle farm. | 614     | 23.4                     |
| 2 Poultry Research Station, Madras ..            | 141     | 9.0                      |
| 3 District Livestock Farm, South Kanara.         | 95      | 16.4                     |
| 4 District Poultry Farm, Cannanore ..            | 49      | 5.7                      |

The majority of the deaths in the farms were from the young stock. The percentage of mortality is within the normal range in all the farms.

(viii) At Hosur, large mortality was due to Avian Leucosis complex, an obscure and a complex disease as the name itself indicates. This problem is being tackled by systematic breeding and progeny testing, for which a preliminary effort has already been set. At the District Livestock Farm, South Kanara, outbreaks of Coccidiosis and pox were responsible for more number of mortality. Both the diseases were controlled.

53. *Poultry Rearing in Private Farms.*—The American Arcot Mission, Katpadi Scheme, has been functioning with 12 Model Village Poultry Farms as well as 2 auxiliary centres, viz., (1) Arni, North Arcot district, and (2) Muttathur, South Arcot district. The poultry development work has been in progress in the areas round about Katpadi for more than 15 to 16 years for which Government subsidy is granted. There were 24 cockerels, 300 hens and 104 chicks in the breeds of White Leghorn and Rhode Island Red at the 12 Model Village Poultry Farms on 31st March 1954. One thousand three hundred and sixty-three eggs were sold for hatching at these units during the period.

54. *Firka Development Scheme.*—The four centres at T. Kallupatti (Madurai district), Kinnigoli (South Kanara district), Malli (Ramanathapuram district) and Saliangalam (Tanjore district) continued to function during the period under report.

55. *North Arcot district.*—(i) The American Arcot Mission, Katpadi, continued to maintain 12 model village poultry farms during this period also.

(ii) The Mission distributed 126 cockerels for grading up village poultry at the rate of Rs. 2 per cock.

(iii) At the beginning of the period, there were 10 poultry units in the National Extension area ranging from a stock of 3 to 5 hens and a cock for each unit. These units have produced 2,117 eggs and of them 124 eggs were set at the units, 208 eggs sold for setting, 1,775 eggs, sold for table and 10 eggs were broken and fed to chicks.

56. *South Arcot district.*—The poultry unit at Muttathur is being run by the American Arcot Mission, Katpadi, for which a sum of Rs. 663-3-6 was paid as subsidy during this period.

57. *Tiruchirappalli district.*—(i) The poultry unit at the Central Jail, Tiruchirappalli, is having a strength of 8 cockerels, 12 hens and 15 chicks on the White Leghorn breed at the end of the period under report.

(ii) There were 43 poultry units with private parties with 660 birds of exotic breed in the district. The total number of eggs collected was 9,304, of which 1,425 eggs were set for hatching.

(iii) Twenty-one backyard poultry units were started under the guidance and help of the departmental staff during the period under report. Two hundred and thirty-two eggs were set for hatching by artificial incubation by two private parties, from which 150 chicks were hatched out.

(iv) A cash prize of Rs. 50 was awarded to the St. Joseph's College Poultry Farm during the period under report for maintaining the largest and the best farm.

58. *Salem district*.—(i) An aggregate sum of Rs. 335-14-0 was given to the poultry breeder at Mallur, Salem taluk, to help him to purchase wire-netting and other requirements to his farm.

(ii) A sum of Rs. 100 was set apart from the Collector's discretionary grant for supply of cockerels for upgrading the village poultry in the Key Village, Achettipally. Eighteen Rhode Island Red cockerels were distributed during this period in addition to 12 given in the previous year.

(iii) The grading up of village poultry started in the previous years in three centres continued to function satisfactorily. Model poultry units in 3 Board High Schools of this district were started during the period. Another village in Krishnagiri Block Development area has been selected for grading up village poultry, and cockerels have been distributed. White Leghorn fowls have been distributed in the Block Development area, Athur, also.

59. *Madurai district*.—(i) The poultry farm at the Tamilnad Grama Sevak Vidyalayam at Kallupatti continued to function with the Rhode Island Red breed with a strength of 13 cocks, 20 hens and 40 chicks. One hundred and sixty-one eggs were collected, of which 130 eggs were sold for hatching and 19 eggs were set for hatching at the farm itself.

(ii) One poultry breeders' association has been organized in Ammapatti village. Six private persons maintained their own poultry units in the district.

60. *Tanjore district*.—A poultry production centre which was opened in the firka development area at Saliangalam with White Leghorn breed of birds continued to function. There were 3 cocks, 7 hens, 21 chicks and 18 Desi birds at the end of the period under report. Four hundred and thirty-six eggs were collected, of which 142 were sold for setting and 124 were kept for hatching.

61. *Ramanathapuram district*.—Ten private individuals maintained 30 cockerels, 115 hens and 36 chicks in the breeds of Rhode Island Red, White Leghorn and Black Minorca.

62. *Malabar district*.—About 1,098 exotic birds are bred by private people in the National Extension areas and 463 exotic birds are reared by private people in the Community Project areas of this district.

63. *Chingleput district*.—There was one private poultry farm at Dhimmavaram maintained by Mr. Lakshmiopathy Reddiar. There were about 120 White Leghorn birds and 100 indigenous birds. The farm was maintained well and was being inspected by the departmental staff whenever required and necessary advice given for their proper maintenance.

There was another poultry farm maintained by a private person at Mathivakka. There were about 200 birds in the breeds of Rhode Island Red, White Leghorn, Black Minorca and Light Sussex in addition to the Desi hens.

64. *Coimbatore district*.—Twenty-one cockerels were distributed in the National Extension area. Thirty-one Rhode Island Red Cockerels, 16 White Leghorn cockerels and 4 Black Minorca cockerels were purchased from the Collector's discretionary grant and distributed to the public in Avanashi firka area. Three hundred and fifteen eggs were collected and 162 chicks were hatched out during the period.

65. *South Kanara district*.—(i) The poultry farm at Kinigoli which was started during 1952-53 continued to function with a strength of 2 cocks, 15 hens and 22 chicks of the Rhode Island Red breed. The opening balance of eggs on 1st October 1953 was 20. Six hundred and sixty-two eggs were collected, of which 272 eggs were sold for hatching, 71 eggs were sold for table, 283 eggs were kept for hatching and 46 eggs were fed to chicks, thus leaving a balance of 10 eggs at the end of the period under report.

(ii) Two hundred hatching eggs and 3 cocks and 5 hens were distributed to the public during the period.

#### *Horses and Pony Breedings.*

66. (i) The stallions at Veterinary Institutions, Coimbatore and Gobichetti-palayam, were auctioned due to old age. The stallions stationed at Pollachi, Erode and Tiruppur continued to be at stud. The number of services performed by the stallions are furnished below :—

|          |    |    |    |    |    |    | Number of services. |
|----------|----|----|----|----|----|----|---------------------|
| Pollachi | .. | .. | .. | .. | .. | .. | 21                  |
| Erode .. | .. | .. | .. | .. | .. | .. | 19                  |
| Tiruppur | .. | .. | .. | .. | .. | .. | 26                  |
|          |    |    |    |    |    |    | <hr/> 66 <hr/>      |

(ii) Besides 2 stallions, 2 mares and 2 fillies are available at the Livestock Research Station, Hosur Cattle Farm.

#### *Pig Rearing.*

67. (i) The Yorkshire and African breeds of pigs are reared in the Sacred Hearts College, Shenbanur, Kodaikanal.

(ii) Pig breeding is done at the farm near Pudupakkam Village, Chingleput taluk, by Mrs. R. M. Buck and there were 50 pigs including Berkshire pigs.

(iii) Berkshire pigs, both white and black, are reared at the following places in Tiruchirappalli district :—

|                                           |    |    |     |
|-------------------------------------------|----|----|-----|
| (a) St. Joseph's College, Tiruchirappalli | .. | .. | 200 |
| (b) St. Paul's Seminary, Tiruchirappalli  | .. | .. | 10  |
| (c) Dr. Rajan's Farm, Thiruvengimalai     | .. | .. | 50  |
| (d) Sri Thangarajan, Anoor ..             | .. | .. | 5   |

#### *Cattle Shows and Exhibitions.*

68. (a) *Private Cattle Shows*.—Eleven cattle shows were organized by non-official agencies and a grant of Rs. 1,385 was sanctioned during the period under report.

(b) *One-day cattle shows*.—(i) Out of 45 one-day cattle shows held during the period, 18 shows were held in connexion with Gosamvardhana Day Celebrations and 7 in Community Project and National Extensions Service areas.

(ii) A sum of Rs. 200 per show was sanctioned for the one-day cattle shows and an additional sum of Rs. 50 for each was sanctioned for the one-day cattle day cattle shows conducted in connexion with Gosamvardhana Day Celebrations.

(iii) In addition 8 cattle and calf rallies were held in the Key village areas during the period. A sum of Rs. 2,250 has been incurred towards conducting the above shows.

(c) A cattle exhibition was held at Erode in Coimbatore district.

(d) One poultry and cattle exhibition was held at the Rural Development Centre, Katpadi, North Arcot district. There were 266 entries, both cattle and birds of exotic breeds. Sixty-one prizes were awarded to the best exhibits of poultry and cattle to the value of Rs. 208. A sum of Rs. 100 was granted to the American Arcot Mission, Katpadi, for conducting the exhibition.

69. *Propaganda*.—The department participated in the following exhibitions :—

- (i) All-India Khadi, Swadesi and Industrial Exhibition held at Madras.
- (ii) Annual Flower Show at Horticultural Garden, Teynampet, Madras.
- (iii) Municipal Exhibition at Kancheepuram.
- (iv) Two exhibitions held at Coimbatore.

70. (i) There are several private tanneries at South Kanara, Tiruchirappalli, Madurai, Chingleput and Salem districts.

A statement showing the export and import of livestock products during the period 1st October 1953 to 31st March 1954, is furnished below :—

| Commodity.                        | 1st April to 30th September 1953. |             | 1st October 1953 to 31st March 1954. |             |
|-----------------------------------|-----------------------------------|-------------|--------------------------------------|-------------|
|                                   | Quantity.                         | Value.      | Quantity.                            | Value.      |
|                                   | CWT.                              | RS.         | CWT.                                 | RS.         |
| <i>Exports.</i>                   |                                   |             |                                      |             |
| Raw goat skins ..                 | 7,278                             | 24,29,490   | 10,484                               | 27,79,412   |
| Raw sheep skins .. ..             | ..                                | ..          | 2,570                                | 1,560       |
| Raw cuttings of hides and skins.  | 4,579                             | 57,851      | 10,169                               | 1,13,007    |
| Raw cow-calf skins .. ..          | ..                                | ..          | ..                                   | ..          |
| Raw buffalo hides .. ..           | ..                                | ..          | ..                                   | ..          |
| Raw cow hides .. ..               | ..                                | ..          | ..                                   | ..          |
| Tanned cow-calf skins ..          | 9,012                             | 41,33,342   | 9,223                                | 42,25,471   |
| Tanned buffalo-calf skins ..      | 9,815                             | 28,82,162   | 13,063                               | 39,81,347   |
| Tanned buffalo hides ..           | 8,541                             | 16,18,261   | 13,890                               | 23,38,157   |
| Tanned cow hides .. ..            | 138,298                           | 3,46,92,150 | 147,785                              | 3,55,58,884 |
| Tanned goat skins .. ..           | 41,954                            | 1,17,12,857 | 50,764                               | 3,33,06,676 |
| Tanned sheep skins .. ..          | 29,978                            | 2,79,12,164 | 40,784                               | 3,90,20,869 |
| Tanned other skins .. ..          | 24                                | 70,718      | 38                                   | 23,946      |
| Horn tips and pieces of horns.    | 12,680                            | 2,35,307    | 13,321                               | 3,04,611    |
| Ivory, manufactured .. ..         | ..                                | ..          | ..                                   | 225         |
| Bone meal .. ..                   | ..                                | ..          | ..                                   | ..          |
| Horn meal .. ..                   | ..                                | ..          | ..                                   | ..          |
| Bones for manurial purposes.      | ..                                | ..          | ..                                   | ..          |
| Bones for manufacturing purposes. | 5,174                             | 14,80,688   | 6,784                                | 19,25,214   |
| Animals living .. ..              | ..                                | ..          | ..                                   | ..          |
| Animals—                          |                                   |             |                                      |             |
| (a) Excepting sheep and goats.    | ..                                | ..          | 45                                   | 47,743      |
| (b) Sheep and goats .. ..         | 25,287                            | 14,81,618   | 29,046                               | 15,52,789   |
| (c) Other kinds .. ..             | 1,065                             | 78,163      | 4,265                                | 2,29,301    |
| Leather unwrought .. ..           | 499                               | 4,65,116    | 1,276                                | 16,74,498   |
| <i>Imports.</i>                   |                                   |             |                                      |             |
| Leather unwrought .. ..           | 8,946                             | 1,89,514    | 13,196                               | 2,49,193    |
| Roller skins .. ..                | 4                                 | 12,532      | 21                                   | 65,309      |
| Hides, raw .. ..                  | 175                               | 35,502      | 2,005                                | 3,25,717    |
|                                   | No. 912                           |             | No. 12039                            |             |
| Skins, tanned.. ..                | 10 H                              | 88          | 1—6 H                                | 1,058       |
|                                   | No. 13                            |             | No. 56                               |             |
| Skins, raw .. ..                  | 3,191                             | 3,32,643    | 3,233                                | 3,31,745    |
|                                   | No. 112502                        |             |                                      |             |
| Hides, tanned .. ..               | ..                                | ..          | ..                                   | ..          |
| Bacon and ham .. ..               | 34                                | 10,073      | 89                                   | 25,731      |

| Commodity.                                            | 1st April to 30th September 1953. |           | 1st October 1953 to 31st March 1954. |           |
|-------------------------------------------------------|-----------------------------------|-----------|--------------------------------------|-----------|
|                                                       | Quantity.                         | Value.    | Quantity.                            | Value.    |
|                                                       | CWT.                              | RS.       | CWT.                                 | RS.       |
| <i>Imports—cont.</i>                                  |                                   |           |                                      |           |
| Milk food for infants and invalids.                   | 11,846                            | 32,66,999 | 20,244                               | 30,86,866 |
| Whole milk including cream (evaporated or condensed). | 20,943                            | 22,65,453 | 5,205                                | 5,39,668  |
| Dried skimmed milk.. ..                               | 61,884                            | 53,30,296 | 55,171                               | 43,62,110 |
| Animals, living horses ..                             | No. 3                             | 32,031    | 43                                   | 45,312    |
| Other kinds .. ..                                     | No. 590                           | 5,912     | 20,032                               | 28,476    |
| Dried milk or powder, whole.                          | 1,823                             | 2,89,496  | 702                                  | 1,72,555  |
| Dried milk or powder skimmed.                         | ..                                | ..        | ..                                   | ..        |
| Dried milk condensed or powder—                       | ..                                | ..        | ..                                   | ..        |
| Whole .. ..                                           | 468                               | 1,19,937  | 492                                  | 1,36,061  |
| Butter .. ..                                          | ..                                | ..        | ..                                   | ..        |
| Ghee .. ..                                            | ..                                | ..        | ..                                   | ..        |

(ii) *Trade in livestock.*—The number of cows and buffaloes brought into Tiruvottiyur Cattle Market for sale to the persons in the City of Madras and surrounding areas for purposes of milk during the period were as follows :—

|                 |    |    |    |    |    | Numbers. |
|-----------------|----|----|----|----|----|----------|
| Cows .. ..      | .. | .. | .. | .. | .. | 3,027    |
| Buffaloes .. .. | .. | .. | .. | .. | .. | 4,349    |
| Total ..        |    |    |    |    |    | 7,376    |

The prices of work-bullocks, she-buffaloes and sheep prevailing at the important weekly cattle markets are being reported to the Director of Statistics, Madras.

The average wholesale prices of hides and skins in Madras City and particulars of export and import of animals during the year which were obtained from the State Marketing Officer, Madras, are furnished in the annexure.

ANNEXURE I.—Average wholesale price in rupees per pound prevailing in Madras City during the period 1st October 1953 to 31st March 1954.

| Months.     | Tanned cow hides. |             |         | Tanned goat skins. |        |         | Tanned sheep skins. |        |         |
|-------------|-------------------|-------------|---------|--------------------|--------|---------|---------------------|--------|---------|
|             | Bangalore.        | Up-country. | Coasts. | Good.              | Fair.  | Common. | Good.               | Fair.  | Common. |
|             | (2)               | (3)         | (4)     | (5)                | (6)    | (7)     | (8)                 | (9)    | (10)    |
| (1)         | RS. A.            | RS. A.      | RS. A.  | RS. A.             | RS. A. | RS. A.  | RS. A.              | RS. A. | RS. A.  |
| October ..  | 2 2               | 2 2         | 2 2     | 4 8                | 4 3    | 4 2     | 6 7                 | 6 4    | 6 2     |
| November .. | 2 1               | 2 1         | 2 1     | 4 11               | 4 8    | 4 7     | 6 5                 | 6 2    | 5 15    |
| December .. | 2 0               | 2 0         | 2 0     | 4 14               | 4 11   | 4 8     | 6 0                 | 5 12   | 5 12    |
| January ..  | 2 0               | 2 0         | 2 0     | 5 3                | 5 6    | 4 13    | 5 13                | 5 11   | 5 9     |
| February .. | 2 0               | 2 0         | 2 0     | 5 4                | 5 2    | 5 1     | 5 4                 | 5 2    | 5 0     |
| March ..    | 2 0               | 2 0         | 2 0     | 5 4                | 5 2    | 5 1     | 5 5                 | 5 3    | 5 1     |

ANNEXURE I.—Average wholesale price in rupees per pound prevailing in Madras City during the period 1st October 1953 to 31st March 1954—cont.

| Months.     | Dindigul price per lb. |           |           |                 |           |              |           |  |  |  |
|-------------|------------------------|-----------|-----------|-----------------|-----------|--------------|-----------|--|--|--|
|             | Cow hides.             |           |           | Goat skins.     |           | Sheep skins. |           |  |  |  |
|             | Superior.              |           |           | Average.        |           | Inferior.    |           |  |  |  |
|             | A quality.             |           |           | Deccan quality. |           | Superior.    |           |  |  |  |
|             | Skins inferior.        |           |           |                 |           |              |           |  |  |  |
|             | (11)                   | (12)      | (13)      | (14)            | (15)      | (16)         | (17)      |  |  |  |
|             | RS. A. P.              | RS. A. P. | RS. A. P. | RS. A. P.       | RS. A. P. | RS. A. P.    | RS. A. P. |  |  |  |
| October ..  | 0 11 0                 | 0 10 0    | 0 9 0     | 1 5 3           | 0 15 9    | 1 10 0       | 1 3 6     |  |  |  |
| November .. | 0 11 6                 | 0 10 6    | 0 9 6     | 1 6 6           | 1 1 0     | 1 11 3       | 1 4 9     |  |  |  |
| December .. | 0 11 6                 | 0 10 6    | 0 9 6     | 1 4 3           | 0 14 9    | 1 8 9        | 1 2 3     |  |  |  |
| January ..  | 0 11 6                 | 0 10 6    | 0 9 6     | 1 5 0           | 1 0 3     | 1 9 0        | 1 3 0     |  |  |  |
| February .. | 0 11 6                 | 0 10 6    | 0 9 6     | 1 5 0           | 1 1 3     | 1 6 6        | 1 0 9     |  |  |  |
| March ..    | 0 11 6                 | 0 10 6    | 0 9 6     | 1 5 6           | 1 1 10    | 1 6 6        | 0 15 0    |  |  |  |

ANNEXURE II.—Inter-block movements (imports) of Livestock into Madras State by Southern Railway 1953-54 (1st October 1953 to 31st March 1954).

| From         | To        | Cattle. | Horses. | Sheep and goats. | Other kinds. | Total. |
|--------------|-----------|---------|---------|------------------|--------------|--------|
| Mysore ..    | Madras .. | 3,697   | 6       | 100              | 5            | 3,808  |
| Punjab ..    | Do. ..    | 44      | ..      | ..               | ..           | 44     |
| Bombay ..    | Do. ..    | 4       | 70      | ..               | ..           | 74     |
| Hyderabad .. | Do. ..    | 10      | 19      | ..               | 35           | 64     |

Inter-block movements (exports) of Livestock from Madras State by Southern Railway 1953-54 (1st October 1953 to 31st March 1954).

| From      | To           | Cattle. | Horses. | Sheep and goats. | Other kinds. | Total. |
|-----------|--------------|---------|---------|------------------|--------------|--------|
| Madras .. | Mysore ..    | 106     | 12      | 450              | 9            | 577    |
| Do. ..    | Hyderabad .. | 1       | ..      | ..               | ..           | 1      |
| Do. ..    | Bombay ..    | 14      | ..      | ..               | ..           | 14     |

Foreign imports of animals (living) into Madras State, 1953-54 (1st October 1953 to 31st March 1954) (quantity in numbers and value in rupees).

| From           | Cattle.  |        | Sheep and goats. |        | Horses.  |            | Other kinds. |            | Total.   |            |
|----------------|----------|--------|------------------|--------|----------|------------|--------------|------------|----------|------------|
|                | Num-ber. | Value. | Num-ber.         | Value. | Num-ber. | Value.     | Num-ber.     | Value.     | Num-ber. | Value.     |
| United Kingdom | ..       | ..     | ..               | ..     | 10       | RS. 41,582 | 6            | RS. 12,370 | 16       | RS. 53,952 |
| Ceylon ..      | ..       | ..     | ..               | ..     | ..       | ..         | 3            | 300        | 3        | 300        |
| West Germany.  | ..       | ..     | ..               | ..     | 33       | 3,730      | ..           | ..         | 33       | 3,730      |
| Singapore ..   | ..       | ..     | ..               | ..     | ..       | ..         | 2            | 450        | 2        | 450        |
| Kenya Colony.  | ..       | ..     | ..               | ..     | ..       | ..         | 9            | 19,725     | 9        | 19,725     |

Foreign exports of animals (living) from Madras State, 1953-54 (1st October 1953 to 31st March 1954) (quantity in numbers and value in rupees).

| To             | Cattle.  |        | Sheep and goats. |           | Horses.  |        | Other kinds. |        |
|----------------|----------|--------|------------------|-----------|----------|--------|--------------|--------|
|                | Num-ber. | Value. | Num-ber.         | Value.    | Num-ber. | Value. | Num-ber.     | Value. |
| United Kingdom | ..       | ..     | ..               | ..        | ..       | ..     | 1            | 50     |
| Ceylon ..      | ..       | ..     | 59,158           | 33,30,219 | 13       | 47,600 | 4,246        | 22,925 |

|                |    |    |    | <i>Total.</i>  |               |
|----------------|----|----|----|----------------|---------------|
|                |    |    |    | <i>Number.</i> | <i>Value.</i> |
|                |    |    |    |                | RS.           |
| United Kingdom | .. | .. |    | 1              | 50            |
| Ceylon         | .. | .. | .. | 63,417         | 34,00,744     |

Coastal imports of animals (living) into Madras State, 1953-54 (1st October 1953 to 31st March 1954) (quantity in number and value in rupees).

| From      | Cattle.  |        | Horses.  |        | Sheep and goats. |        | Other kinds. |        | Total.   |        |
|-----------|----------|--------|----------|--------|------------------|--------|--------------|--------|----------|--------|
|           | Num-ber. | Value. | Num-ber. | Value. | Num-ber.         | Value. | Num-ber.     | Value. | Num-ber. | Value. |
| Bengal .. | ..       | ..     | ..       | ..     | ..               | ..     | 1            | RS. 20 | 1        | RS. 20 |

Coastal exports of animals (living) from Madras State, 1953-54 (1st October 1953 to 31st March 1954) (quantity in number and value in rupees).

| To        | Cattle.  |        | Horses.  |        | Sheep and goats. |           | Others.  |        | Total.   |           |
|-----------|----------|--------|----------|--------|------------------|-----------|----------|--------|----------|-----------|
|           | Num-ber. | Value. | Num-ber. | Value. | Num-ber.         | Value.    | Num-ber. | Value. | Num-ber. | Value.    |
| Bengal .. | ..       | ..     | ..       | ..     | 60               | RS. 2,020 | ..       | ..     | 60       | RS. 2,020 |
| Bombay .. | ..       | ..     | ..       | ..     | 8                | 190       | ..       | ..     | 8        | 190       |

71. State Livestock Improvement Board.—There was no meeting of the Livestock Improvement Board during the period.

## VII. VETERINARY HEALTH SERVICE.

72. (i) *Veterinary institutions*.—No new Veterinary institutions were opened during the period under report. The number of Veterinary institutions in the State at the end of the period was 87 excluding one Veterinary dispensary at Melur, in the Community Project area in Madurai district and 3 Veterinary dispensaries in the Madras City which are maintained by the Corporation of Madras and the minor veterinary dispensaries in the State run by the Touring Veterinary Assistant Surgeons.

(ii) The total number of in and out-patients treated in all the Veterinary institutions during the period was 1,206,157 as against 341,907 in the previous year. The total number of castrations performed was 20,215 against 60,202 in the previous year.

(iii) The number of cases treated in some of the more important Veterinary institutions in the State during the period is given below :—

|   |                                      |    |    |    | Number of cases treated. |
|---|--------------------------------------|----|----|----|--------------------------|
| 1 | Madras Veterinary College Hospital   | .. | .. | .. | 6,489                    |
| 2 | Veterinary Hospital, Saidapet        | .. | .. | .. | 3,822                    |
| 3 | Do. Coimbatore                       | .. | .. | .. | 3,790                    |
| 4 | Veterinary Dispensary, Madurai City  | .. | .. | .. | 3,038                    |
| 5 | Veterinary Hospital, Tiruchirappalli | .. | .. | .. | 2,460                    |
| 6 | Do. Vellore                          | .. | .. | .. | 2,546                    |
| 7 | Do. Salem                            | .. | .. | .. | 2,248                    |
| 8 | Do. Tiruppur                         | .. | .. | .. | 2,755                    |
| 9 | Do. Kumbakonam                       | .. | .. | .. | 2,271                    |

(iv) *Madras Corporation Veterinary dispensaries.*—The Corporation of Madras continued to maintain three Veterinary dispensaries at the three Cattle Depots, viz., B, D and F. The total number of animals treated and castrated in these Veterinary Dispensaries are as shown below :—

| Depot. | In-patients. | Out-patients. | Castration. |
|--------|--------------|---------------|-------------|
| B      | ....         | 1,925         | ..          |
| D      | ....         | 2,630         | 13          |
| F      | ....         | 2,917         | 15          |

#### *Veterinary Institutions.*

73. Out of 87 institutions, 42 are located in Government buildings at the end of the year. Nine of the institutions located in Government buildings were electrified and the remaining institutions were either located in rented or donated buildings. Most of the rented buildings are totally unfit for use as Veterinary institutions. They do not and cannot provide the ordinary facilities required for a modern hospital.

A stage has come to revise our policy and to make available departmental buildings for better service and efficiency.

The total number of institutions supplied with microscopes was 30 at the end of the period. At the end of the period, the number of institutions supplied with refrigerators was 10.

73A. The policy of obtaining contribution from the public or local bodies towards the maintenance of Veterinary institutions and minor Veterinary dispensaries in the State has been pursued and there has been appreciable response. The names of the individual donors or local bodies are furnished below :—

*Madras City.*—Nil.

*Chingleput district.*—The District Board, Chingleput, has contributed 50 per cent of the recurring expenditure towards running the Veterinary Dispensary, Kaliyampundi.

*North Arcot district.*—The Panchayat Board, Arkonam, meets the recurring expenditure of the Veterinary Dispensary, Arkonam. The Minor Veterinary Dispensary, Cheyyar, is located in the building belonging to Panchayat Board, Cheyyar, free of rent.

The Municipality at Tirupatur has consented to contribute half of the recurring and non-recurring expenditure for running a Veterinary dispensary at Tirupatur.

The Municipal Council, Vaniyambadi, has agreed to contribute 50 per cent of the recurring and non-recurring charges for running a Veterinary dispensary along with a rent-free building.

*South Arcot district.*—Nil.

*Tanjore district.*—The District Board, Tanjore, and His Holiness the Pandara Sannidhi, Thiruppanandal, continued to pay the prescribed contributions towards running the Veterinary institutions at Tiruturaipundi, Shiyali, Papanasam, Arantangi, Pattukottai and Thiruppanandal.

*Tiruchirappalli district.*—The District Board, Tiruchirappalli, meets half the recurring expenditure for the Veterinary Dispensary at Manapparai.

*Madurai district.*—The District Board, Madurai, and Panchayat Board, Tirumangalam, meet half the recurring expenditure for running the Veterinary Dispensary at Tirumangalam.

The Bodinaickanur, Municipality meets half the recurring expenditure for running the Veterinary Dispensary at Bodinaickanur. The Palni Municipality and Sri Dandayudapaniswami Devasthanam, Palni, meet each one-third of half the recurring expenditure towards the Veterinary Dispensary, Palni.

The Panchayat Board, Cumbum, pays a lump-sum contribution of Rs. 200 per annum towards the maintenance of Minor Veterinary Dispensary, Cumbum, in addition to payment of rent for the veterinary dispensary building.

*Ramanathapuram district.*—The Veterinary Dispensary, Karaiukdi, is run on a contribution basis since September 1938. The Karaikudi Municipality agreed to contribute a sum of Rs. 1,000 per mensem.

The Sivakasi Municipality has donated a building and also agreed to contribute a sum of Rs. 750 per mensem towards the maintenance of Minor Veterinary Dispensary, Sivakasi.

The Tiruppathur Panchayat Board continued to contribute a sum of Rs. 240 towards payment of rent for the Minor Veterinary Dispensary, Tiruppathur.

*Tirunelveli district.*—The District Board, Tirunelveli, has contributed half the recurring expenditure towards running the Veterinary dispensaries, Tenkasi and Sivagiri.

The rent for the Minor Veterinary dispensary buildings, Koilpatti, and Valliyur are being paid by Sri A. Ramaswami Dass, M.L.A., and the Panchayat Board, Valliyur, respectively.

The Panchayat Board, Kadayanallur, has agreed to contribute Rs. 1,500 per annum if an institution is opened in the area.

*Salem district.*—Nil.

*Coimbatore district.*—The District Board, Coimbatore, has contributed 50 per cent towards running the Veterinary dispensaries at Annur, Vettaikaranpudur and Ramachandrapuram.

The Panchayat Boards, Singanallur and Uppilipalayam, have contributed 25 per cent each for Veterinary Dispensary, Singanallur.

The Minor Veterinary Dispensary at Kurichikottai is located in a rent-free building belonging to Sri C. Ramaswami Naidu, Director, Tirumurthi Mills, Udumalpet.

The Veterinary Dispensary at Nathakadayur is located in a rent-free building given by the Pattagar of Palayakottai.

The Minor Veterinary Dispensary, Andhiyur, is located in a rented building, the rent of which is being paid by the Panchayat Board, Andhiyur. The Panchayat Boards, Kodumudi, Punjaipuliyampatti, Perundurai and Palladam, contribute towards maintenance of the minor Veterinary dispensaries located in their places.

The Mettupalayam Municipality has to contribute 50 per cent of the recurring expenditure towards running the Veterinary Dispensary, Mettupalayam.

*Malabar district.*—The Panchayat Board, Chowghat, is contributing Rs. 600 per annum towards running the Veterinary Dispensary, Chowghat.

*South Kanara district.*—Nil.

While the policy of eliciting contributions from private and local bodies has the welcome advantage of stimulating local interest, it has brought an unequal distribution of Veterinary institutions in the State. One way to overcome this disparity is to leave the discretion with the Director of Animal Husbandry to accept whatever contributions are forthcoming from backward districts for opening Veterinary institutions, without insisting on the 50 per cent contributions.

The electrification of the Veterinary Hospital buildings at Tiruppur was undertaken by the public of Tiruppur.

## VIII. ITINERATING STAFF.

74. No new Touring Billet was opened during the period under report. The number remained to be 85 at the end of the period under report of which 65 stand converted as minor veterinary dispensaries on 31st March 1954.

Consequent on the transfer of the minor veterinary dispensary at Melur to Community Project Department for conversion into a veterinary dispensary, the touring Billet of Madurai Division was reopened with Headquarters at Madurai during the period. Out of 65 minor veterinary dispensaries, five were located in Government buildings.

Twenty-five thousand three hundred and sixty castrations were performed and 71,122 cases were treated by the touring staff both at headquarters and on tour during the period.

## IX. DISEASES AMONG LIVESTOCK.

75. (i) Eight hundred and twenty-four outbreaks of various diseases were received during the period as against 1,746 during the last period. The statistics of mortality among livestock in the State and the number of preventive inoculations and vaccinations conducted are furnished in Tables I and II respectively.

(ii) *Rinderpest*.—The period under review records another successful endeavour in ensuring the freedom from Rinderpest except for a few outbreaks in the districts of Madras and Chingleput. Poor communication and the absence of quick conveyance like a land rover or jeep to contact the interior scenes of outbreak and the continued absence of refrigeration facilities at important headquarters veterinary institutions for storing biologicals are indeed the factors that mitigate against the endeavour of the field staff in arresting and eradicating the disease. There were eight outbreak reports with 47 deaths during the period.

(iii) *Hæmorrhagic Septicæmia*.—Hæmorrhagic Septicæmia was present throughout the State except in Madras. The disease was rather severe in Tanjore and Malabar and was moderately severe in Chingleput, South Arcot, Tiruchirappalli and South Kanara districts. There were 222 reports with a mortality of 1,177 recorded as against 554 reports with a mortality of 2,760 in the previous period.

(iv) *Blackquarter*.—This disease was widely spread throughout the State. The districts of South Arcot, North Arcot, Madurai, Ramanathapuram, Salem and Coimbatore recorded a large number of outbreaks during the period. Two hundred and seventy-six outbreaks were received with a mortality of 1,229 as against 456 reports and 1,739 deaths in the previous half-year.

(v) *Anthrax*.—Anthrax prevailed in almost all the districts of the State except South Arcot, and Tirunelveli. Salem district recorded large number of outbreak reports. There were 64 outbreaks reports with a mortality of 839 during the period under report as against 221 outbreak reports with 1,591 deaths during the previous year. Large number of vaccinations were done in susceptible stock in endemic areas. Certain field experimental vaccinations against this disease with a view to completely control this disease are being pursued and results watched.

(vi) *Foot and mouth disease*.—There were 55 reports with a mortality of 7 and this disease was prevalent in almost all the districts except South Arcot, Tanjore and Tiruchirappalli.

76. *Reporting of outbreak*.—There was no change in the system of recording mortalities among cattle; the Revenue authorities continued to record the same. The inaccuracies and discrepancies in mortality figures under various diseases between the departmental figures as recorded by the staff and those furnished by the Revenue authorities continued to exist. The mortality figures under the main contagious diseases among all classes of animals, as reported by the Collectors of the districts and by the departmental staff are furnished below :—

Delays in prompt reporting of outbreaks of cattle diseases are still responsible to a great extent for the undue losses in stock, the establishment of the disease and the delay in instituting timely preventive measures. It is needless to emphasize the importance of expeditious reporting of outbreaks by village munsiffs not only to

save loss and control disease but at the same time to do it at great saving to the State.

|                            | <i>Rinderpest.</i> | <i>Hæmorrhagic septicæmia.</i> | <i>Black quarter.</i> | <i>Anthrax.</i> | <i>Foot and mouth.</i> | <i>Total.</i> |
|----------------------------|--------------------|--------------------------------|-----------------------|-----------------|------------------------|---------------|
| By Collectors .. ..        | 51                 | 968                            | 1,233                 | 205             | 7                      | 2,454         |
| By the Departmental Staff. | 47                 | 1,159                          | 1,229                 | 221             | 5                      | 2,661         |

The discrepancies between the collectors and departmental mortality figures were as usual brought to the notice of the Revenue authorities by our departmental staff in the respective districts.

77. *Mortality*.—The total number of mortality from Rinderpest, Hæmorrhagic Septicæmia, Blackquarter and Anthrax was 3,292 as against 8,480 of the previous half-year. The average mortality figure per outbreak on account of these contagious diseases was 5.8 as against 5.3 of the previous year.

The incidence of mortality from these diseases during the period were as follows :—

|                              | <i>Attacks.</i> | <i>Deaths.</i> |
|------------------------------|-----------------|----------------|
| Rinderpest .. ..             | 58              | 47             |
| Hæmorrhagic Septicæmia .. .. | 1,295           | 1,177          |
| Blackquarter .. ..           | 1,301           | 1,229          |
| Anthrax .. ..                | 870             | 839            |
| Total .. ..                  | 3,524           | 3,292          |

There were 2,622 attacks and 7 deaths due to Foot and Mouth during the period.

*Cattle diseases.*

## (a) Contagious diseases (cattle).

78. (i) *Rinderpest*.—There was a remarkable decrease in the number of outbreak reports and mortality during the period. There were only eight outbreak reports with 58 deaths. As in the past, the disease prevailed in the adjoining districts of neighbouring States of Andhra, Hyderabad and Mysore.

The number of animals protected against the disease and the mortality among the inoculated ones were as follows :—

| <i>Kind of animal and method of protection.</i> | <i>In actual outbreaks.</i> |                     | <i>In clean area.</i>     |                     | <i>Total.</i>             |                     |
|-------------------------------------------------|-----------------------------|---------------------|---------------------------|---------------------|---------------------------|---------------------|
|                                                 | <i>Number inoculated.</i>   | <i>Number died.</i> | <i>Number inoculated.</i> | <i>Number died.</i> | <i>Number inoculated.</i> | <i>Number died.</i> |
| <i>Cattle.</i> —                                |                             |                     |                           |                     |                           |                     |
| S.S. with goat virus ..                         | 1,087                       | ..                  | 37,752                    | ..                  | 38,839                    | ..                  |
| Serum alone method ..                           | 32                          | ..                  | ..                        | ..                  | 32                        | ..                  |
| Freeze dried vaccine ..                         | 486                         | 30                  | 41,303                    | ..                  | 41,789                    | 30                  |
| Total ..                                        | 1,605                       | 30                  | 79,055                    | ..                  | 80,660                    | 30                  |

The total number of inoculations done against Rinderpest during the last three years is furnished below :—

|                              |                            |
|------------------------------|----------------------------|
| 1951-52 .. ..                | 6,41,978.                  |
| 1952-53 .. ..                | 6,30,560 including others. |
| 1953-54 (1-10-53-31-3-54) .. | 80,660.                    |

(iii) *Hæmorrhagic Septicæmia*.—Two hundred and twenty outbreaks with 1,159 deaths were recorded during the period as against 1,013 outbreaks with 5,282 deaths in the previous year. The districts of Chingleput, South Arcot, Tanjore, Tiruchirappalli, Malabar and South Kanara recorded large number of outbreaks. Forty-five thousand and two hundred and fifty two animals were protected against the disease by the vaccine alone method in actual outbreaks. Besides 12,772 vaccinations were carried out in disease-free endemic and epidemic areas as a preventive measure. Two lakhs fifty-six thousand four hundred and fifty-two vaccinations in actual outbreaks and 13,746 vaccinations in free areas were conducted against the disease during 1952-53.

(iii) *Black-quarter*.—Two hundred and seventy-six outbreaks of Blackquarter with 1,229 deaths were received as against 691 outbreak reports with 2,888 deaths of the previous year. The disease was widespread in almost all the districts except the districts of Madras, Chingleput, Tirunelveli and South Kanara. Seventy-one thousand and one hundred and thirty-seven vaccinations in actual outbreaks and 10,436 vaccinations in disease-free areas were conducted during the period under report. During the last year, 1,63,347 bovines in actual outbreaks and 19,355 bovines in disease-free areas were protected against the disease.

(iv) *Anthrax*.—Thirty-five outbreaks with 221 deaths were recorded during the period as against 177 outbreak reports with 993 deaths of the previous year. The disease was prevalent in all the districts except the districts of Chingleput, Tiruchirappalli, Ramanathapuram and Tirunelveli. Five thousand seven hundred and eighty eight bovines were protected against the disease in actual outbreaks and 2,988 in clean areas. Besides 42 animals were protected by serum alone method, 20,928 bovines were protected against the disease by vaccine alone method and 3,126 by the serum alone method during the previous year.

(v) *Foot and Mouth*.—Fifty-three outbreak reports were received during the period as against 193 outbreak reports of the previous year. The total number of deaths record was only 5 during the period as against 62 of the previous year. The districts of Chingleput, South Arcot, Tanjore, Tiruchirappalli, Ramanathapuram and Tirunelveli were free from this disease.

(vi) *Surra (Trypanosomiasis in cattle)*.—Seventy-six outbreak reports with 228 deaths were recorded during the period as against 37 outbreak reports with 85 deaths of the previous year. North Arcot district recorded a large number of outbreak reports.

*Nasal Schistosomiasis*.—Seven hundred and eighty-four cases were treated for this affection during the period as against 1,642 cases of the last year. Eighty six cases were confirmed. The disease was met with in all the districts of the State.

(vii) *Johne's disease*.—Four cases were confirmed during the period.

(viii) *Brucellosis*.—Twenty-two cases were suspected for this disease of which 9 were positive.

(ix) *Bovine Lymphangitis*.—One hundred and twelve cases were met with during the period and six were confirmed.

(x) *Coccidiosis*.—Four hundred and forty cases were met with of which 153 cases were confirmed microscopically.

(xi) *Rabies*.—Two hundred and fourteen cases were given anti-rabic treatment free of cost. The districts of Malabar and South Kanara recorded large number of cases during the period.

(xii) *Ephemeral fever*.—Four hundred and nineteen cases were treated for affection.

(xiii) *Prioplasmiasis*.—Ninety-five cases were treated and cured on clinical systems of which 43 cases were confirmed microscopically.

(xiv) *Mange*.—Four hundred and four animals were treated for this condition during the period. Forty cases were confirmed.

(xv) *Cancer*.—One hundred and ninety-three cases of cancer of horn and eye were treated during the period.

(xvi) *Thilirisiasis*.—Thirty-one cases were met with.

### (b) Non-contagious disease.

79. (i) *Rheumatic Arthritis or fluorosis*.—Ninety-one cases were treated. The majority of cases were met with in the districts of South Arcot, Madurai and Ramanathapuram. The use of bonemeal in the rations of stock in these Fluorite areas is being advocated by the departmental staff. Large stocks of bonemeal are continued to be stored in all the Veterinary Institutions in the State for sale at actual cost for the farmers as a preventive against this condition and this has become very popular.

(ii) *Urethral calculi*.—Two cases were met with in Tanjore district and treated.

(iii) *Chronic Luxation of Patella*.—Two thousand and five cases were met with and treated successfully.

*Haematuria in cattle*.—Two hundred and twenty-two cases were met with and treated during the period.

(iv) *Strongylosis in cattle (calves)*.—Out of one thousand and one hundred cases treated for this disease. Tiruchirappalli and Coimbatore districts recorded a large number of cases.

(v) *Sterility*.—Two hundred and sixty-five cases were met with and treated during the period.

(vi) *Mastitis*.—One hundred and twenty two cases were met with and treated during the period.

### Diseases among sheep and goats.

80. *Contagious diseases*.—During the period under report the following diseases among sheep and goats were reported:—

| Name of the disease.             | Number of outbreaks. | Number of deaths. |
|----------------------------------|----------------------|-------------------|
| 1 Anthrax .. .. .                | 29                   | 618               |
| 2 Circling disease .. .. .       | ..                   | ..                |
| 3 Sheep-pox .. .. .              | 73                   | 558               |
| 4 Hæmorrhagic Septicæmia .. .. . | 2                    | 18                |
| 5 Foot and Mouth .. .. .         | 2                    | 2                 |
| 6 Goat Pox .. .. .               | 1                    | 11                |
| Total .. .. .                    | 105                  | 1,034             |

81. *Protection against the disease*.—The number of animals protected against different diseases was as follows:—

|                                  |        |
|----------------------------------|--------|
| 1 Hæmorrhagic Septicæmia .. .. . | 450    |
| 2 Anthrax .. .. .                | 7,153  |
| 3 Sheep-pox .. .. .              | 21,364 |

*Helminthiasis*.—Five outbreak reports with 64 attacks and 64 deaths were recorded during the period in the districts of Salem and Coimbatore.

*Enterotoxaemia*.—Seven outbreaks with 114 deaths were reported in South Arcot, North Arcot and Ramanathapuram district and 2,281 C. welchi Anaculture. Vaccinations were conducted against the disease.

### Other animals.

82. (a) *Canines—Piropasmasis*.—Ten cases were met with and treated.

*Mange*.—Thirty nine cases were met with in Madurai district and treated.

*Distemper*.—Six cases were treated and cured.

*Rabies*.—One hundred and fifty-two cases were given anti-rabic treatment.

(b) *Equines—Surra*.—One case was met with in Coimbatore district and the animal died.

(c) *Diseases of Poultry—Fowl Cholera*.—No case was reported during the period.

**Fowl-pox.**—There were nineteen outbreaks with 208 attacks and 150 deaths during the period under report. One thousand three hundred and sixty-nine birds were protected against the disease in actual outbreaks and 2,686 birds in clean areas.

**Ranikhet disease.**—Seventeen outbreaks reports with 338 attacks and 338 deaths were recorded during the period in the districts of Chingleput, North Arcot, Madurai and Salem of which North Arcot alone recorded 13 outbreaks with 266 attacks and 266 deaths. Three thousand and eighteen birds were protected against the disease in actual outbreaks and 35,298 birds were protected in clean areas. Large scale vaccinations against this disease has become a feature which is very well appreciated by the poultry farmers in the State. Ranikhet is well under control. An increasing large number of ryots have taken to poultry farming under the protecting influence of Veterinary health service against the disease.

## X. INVESTIGATION AND RESEARCH.

83. **Madras Veterinary College.**—The several departments of the College engaged themselves in the following main research activities during the period :—

**Biology.**—Investigation work using anura as test animals is still continued. The effects of mammalian hormones specially those of pregnancy are being studied at present.

**Bacteriology—Encephalitis.**—During the period under report, a new line of research work, in which the Virus Research Centre, Poona, was interested, was undertaken at the request of the Pediatrics Department of the Madras Medical College and General Hospital, which approached the Lecturer in Bacteriology to help them in cultivation of the virus of Encephalitis in human beings. The materials were collected by them from cases suspected of this condition. It was said that this condition was more prevalent in the young. Four samples of materials collected at various times were received and examined biologically. All of them proved negative.

**Mastitis.**—Milk from cases of Mastitis in both cows and buffaloes are examined to elucidate the amount of various bacterial causes that are responsible for this condition. Studies on the Bacteriology of Bovine Mastitis has been approved by the University of Madras and forms a research problem for one of the Assistant Lecturers working in this Department under the guidance of the Lecturer in Bacteriology.

**Sterility.**—In view of the great importance of fertility in the advancement of Animal Husbandry, materials from cases attending the College hospital suspected for Endometritis and Vaginitis are collected and put to bacteriological examination with a view to isolate the typical pathogenic bacteria that may be responsible for that condition in the animal. Besides this, materials from apparently normal genital tracts are also collected and examined to assess the bacterial flora as far as possible.

**Parasitology.**—The systematic survey of helminths in pigs in Madras was concluded and the results of the enquiry are being analysed.

Studies on the behaviour of *Trypanosoma evansi* in vitro as well as in the body of its host after death were continued.

Attempts to transmit *Trypanosoma evansi* to different categories of poultry were made successfully.

**Pathology.—Liver diseases in dogs.**—(a) *Cirrhosis in dogs.*—Study of the histological patterns in spontaneous cases of Hepatic cirrhosis in canines have been studied in a number of cases this year also. These fall broadly into three types :—

(i) *Post-necrotic type.*—This type corresponds to the classical hobnail type. The surface of the liver shows plenty of nodular projections of various sizes and histologically the usual multilobular picture is presented. On the basis of experimental work done elsewhere, it is reasonable to conclude that such a picture can arise from dietary factors or chronic portal intoxication.

(ii) *Diffuse fibrosis with fatty changes (fatty cirrhosis).*—Both from gross and histological grounds, this type is distinct. There are only mere granulations of a coarse type on the surface of the liver and histologically there is plenty of fatty changes in the liver cells in addition to diffuse fibrosis. This type of histological picture is typical of the lesions resulting from lack of lipotropic factors.

(iii) *Acute type.*—A few cases showing severe and massive necrosis of the organ almost similar to that present in acute yellow atrophy had been seen.

**Viral canine hepatitis (Rubarth's disease).**—One case simulating this disease has been diagnosed recently in a young dog with the history of sudden death. Both macroscopically and microscopically it corresponded with the Rubarth's disease. Typical intranuclear inclusion bodies could be detected in sections from liver and kidney.

**Transmission of liver material from infantile cirrhosis cases in children.**—The work undertaken in collaboration with the Pediatrics department of the Madras Medical College last year, has been pursued this year also. Previous work in Infantile cirrhosis by Dr. Achar at the Madras Medical College showed that a varied entity may be the cause of this disease. In pursuance of this theory, transmission experiments of the liver (biopsy) materials from typical cases of this disease were undertaken in puppies. Last year the route of inoculation was intra-peritoneal and intra-hepatic and the results were negative. This year the inoculations were done into the portal vein after laparotomy. In the few cases where this mode of inoculations were undertaken, repeated liver biopsies and final autopsy revealed that no lesions comparable to which had been seen in children were reproduced.

84. **Disease investigation staff.**—The Veterinary Investigation Officer, Ranipet, carried out investigation on the following diseases during the period :—

**Anthrax in cattle and buffaloes.**—The disease was investigated at 53 centres in 17 districts. Of these, 30 were endemic areas where repeated spore vaccinations are in progress and 4 were endemic areas where the disease recurred in spite of vaccinations and 19 were actual scenes of outbreak. The highest mortality has occurred in Easani and 19 were actual scenes of outbreak. The disease was noted as usual village of Tiruchirappalli district with 26 deaths. The disease was noted as usual only in adult cattle and white cattle were affected more than buffaloes. The disease occurred more in areas of wet cultivation as shown by the large number of outbreaks in Athur taluk of Salem district. There was an inter-current infection of Haemorrhagic Septicæmia in 2 centres, Trypes in 1 centre and arsenical poisoning in one.

There were 337 attacks and 297 deaths before vaccination.

**Biological tests.**—The disease was confirmed biologically in 4 centres and microscopically in 20 centres. While all the biological tests were conducted in the laboratory, the microscopical examinations were done by the Principal, Madras Veterinary College, the local staff and this laboratory.

**Vaccination experiments.**—During the period, 1,182 buffaloes, 9,976 cattle, 1,127 sheep and goats and 16 elephants were vaccinated. The major number of vaccinations were carried out with the Indian Veterinary Research Institute, Mukteswar, vaccine and a few with the vaccine produced at the Veterinary Biological and Research Institute, Ranipet. The vaccinations result with both the products were satisfactory as far as the local and general reactions are concerned. After vaccination there were 25 attacks, and 22 deaths among the vaccinated which compared to the pre-vaccination figures is very low.

In most of the centres vaccinations were done by the staff. Biological tests were conducted with 23 materials of which four proved positive and pure cultures were isolated. A further study on the rough variants isolated from the virulent cultures was continued. Nine such variants were isolated and studied. Of these, five killed guineapigs when given  $\frac{1}{4}$  slant of 24 hour Agar culture. Three cultures did not kill guineapigs. When these three guineapigs were challenged after 15 days with the virulent culture, one died and two resisted the challenge. It is, therefore, inferred that all rough variants are not avirulent and all avirulent strains do not possess antigenic value. The study also revealed that 30 per cent carbondi-oxide, tension is found to be optimum to isolate the rough variants from the virulent cultures.

**Brucellosis.**—The disease was investigated in 12 centres in the districts of Madurai, Ramanathapuram, Tirunelveli, Coimbatore East and West. A total of 31 samples of sera were collected and tested of which 5 proved positive. The end-titre varied from 1 : 40 to 1 : 320.

The incidence of abortion, synovitis and sterility continued to range from 10 to 15 per cent, 3 to 12 per cent and 2 to 8 per cent respectively excepting that in some places, there is more of sterility after abortion and in some places synovitis is seen to be a prominent sequence.

**Vaccination experiments, etc.**—During the period, 1,517 animals were vaccinated and all were with the vaccine produced at the Veterinary Biological and Research Institute, Ranipet. Of these 18 were adults, and 1,499 were calves. During the period 113 samples of sera were collected from vaccinated calves and their agglutination titre studied with reference to the age and the period of vaccination. It was noted that a maximum titre of 1 : 1280 was shown during the first month and it gradually faded away. While comparing the results of the Indian Veterinary and Research Institute, Mukteswar, and Veterinary Biological and Research Institute, Ranipet, vaccines, it is seen that the former has given a titre of 1 : 5 on the 446th day while the latter has given the same titre on the 254th day only.

It was noted on revisiting 10 previously vaccinated centres that among the young stock vaccinated, the percentage of abortion was 0.28 while in the controls it was 11.3 and among adults it was 1 : 1 and 8 : 3 respectively. The results are therefore quite good.

Five materials were tested, and all proved negative. Apart from this, 98 samples of sera and one of synovial fluid were tested in this laboratory of which nine samples of sera proved positive.

**Institution of proper preventive measures.**—Advice on this was given everywhere but it could not be strictly enforced for want of special staff.

**John's disease.**—The disease was investigated in the District Livestock Farm, Malabar. Twenty-one animals were tested of which 5 proved suspicious. The animals so tested were 8 white cattle, and 13 buffaloes. The suspicious ones were all buffaloes. They were advised to be segregated.

**Studying the efficacy of Johnin test by simultaneous examination of bowel washings, etc.**—The bowel washings of the five suspicious cases have proved negative.

**Bovine paralysis in South Kanara district.**—Work on this disease was continued this year also, particular attention being paid to be etiology of the disease. Based on the treatment of the disease by the injection of calcium and magnesium, 46 samples of sera were collected from ailing, recovered and incontact animals to find out whether this deficiency is the cause or the pre-disposing cause of the complaint, and sent to the Principal, Madras Veterinary College. The results of examination received indicated that there is magnesium deficiency in some animals. Treatment of ailing cases with magnesium and calcium was also tried on a few cases and the results were inconclusive. Further intensive work is to be carried out this year.

**Obscure diseases and diseases of economic importance—Mortality among animals in District Livestock Farm, Malabar.**—The sudden mortality among the farm stock resulting in 7 attacks and 2 deaths was investigated into. The onset was sudden and the symptoms acute. The disease was eliminated for trypan by the examination of smears and testing of the serum. The disease was eliminated for arsenical poisoning also as the materials sent to the Chemical Examiner did not reveal anything. There was no further incident after this.

**Calf mortality at the District Livestock Farm, Koila, South Kanara district.**—Mortality among the Murrah buffalo calves was investigated into. Even though ascaris infection was one of the causes, the primary factors were unfavourable weather conditions, like heavy rains and cold wind and inadequate accommodation. Instructions were issued to provide better accommodation for the calves and also to change the calving season to suit better times avoiding the rainy season.

**Cattle mortality in Ambasamudram, Tirunelveli district.**—The cattle mortality reported was investigated into. About 15 animals were reported to have suddenly

died in and around the area and the materials were sent to the Chemical Examiner to eliminate arsenical poisoning. The results have not yet been received. Nothing could be detected during the post-mortem examination by the field staff. Examination of blood smears and faeces revealed no significant causes. The report of the Chemical Examiner to Government is awaited, as there has been no further deaths in the locality.

**85. Scheme for the Investigation into the Diseases of sheep and goats.**—The work done by the Assistant Disease Investigation Officer (Sheep and Goats) during the period is furnished below :—

**Anthrax.**—The disease was reported from 22 centres in the districts of Ramanathapuram, Tanjore, South Arcot, Madurai, Coimbatore, Tirunelveli, Tiruchirappalli, Chingleput and Salem. A large number of reports have been received from the district of Ramanathapuram.

The disease has occurred in the various soils such as gravelly clay, sandy and loamy areas. But it has been more marked in what may be called as dry areas. The outbreaks of the disease have occurred from October to January and in March also for the period under report.

The course of the disease among sheep and goats has been hyper acute. The symptoms noticed were sudden death with the escape of sera-sanguinous discharge from the natural orifices. The lesions noticed were non-coagulation of blood and enlargement of spleen. As has been noticed in the previous years the disease had occurred in the majority of the instances among sheep and goats, while the incontact susceptible bovines remained unaffected.

The disease spread from animal carcasses to human beings in one centre, viz., Kolladi. Three deaths had occurred among the persons who had handled and eaten the carcasses.

The disease had been confirmed in 10 outbreaks by microscopical and biological tests.

**Preventive measures.**—(1) *Anti-anthrax serum* was employed in doses of 20.0 c.c. to 25.0 c.c. per animal. Four hundred and ten sheep and goats were protected with the serum in some of the actual outbreaks. No further mortality occurred among the inoculated animals.

(2) *Anthrax spore vaccine*—(a) *Indian Veterinary Research Institute Vaccine.*—Four thousand five hundred and six sheep and goats were inoculated with the Anthrax spore vaccine supplied by the Indian Veterinary Research Institute during the period under report. The vaccinations were done in the face of an outbreak and in advance of the disease in the affected and endemic areas. A small number of vaccinated animals had severe local reaction but got over it. The vaccine was used both as raw and diluted with sterile saline.

(b) *Spore vaccine of the Veterinary Biological and Research Institute, Ranipet.*—The spore vaccine produced at the Veterinary Biological and Research Institute was tried on 1,735 sheep and goats. The vaccine is being prepared with the seed materials obtained from the Indian Veterinary Research Institute. The vaccine of the Veterinary Biological and Research Institute behaved in a similar way as the product of the Indian Veterinary and Research Institute. It was found to be safe, but in a proportion of the vaccinated animals varying degrees of local reaction occurred. The duration of immunity as judged from the recurrence of the disease among the vaccinated stock has to be observed.

**Sheep pox.**—The disease was reported from the districts of Coimbatore, Tirunelveli, Chingleput, Tiruchirappalli, South Arcot, North Arcot and Madurai.

The disease in natural outbreaks has been met with in sheep only. The ailing animals show usually a high temperature and lesions on the skin. The eruptions on the skin occur all over the body. The skin lesions start as erythematous spots and develop into papules which are hard in consistency. They do not form such vesicles as to pit on pressure. When the papules are a few days old and when the skin over them becomes pale and peelable, a little amount of moisture may be observed to ooze out on removal of the scabs. The base of the lesion is also not unbellicated or depressed but is elevated. The lesions are noticed in the internal organs also.

Mortality from the cause varies from 10 to 50 per cent in different outbreaks. On occasions, heavier mortality figures also have been reported. The recovered ones from natural attacks remain unthrifty for a long time unless looked after carefully.

Specimens from several outbreaks have been forwarded to the Indian Veterinary Research Institute and the Veterinary Biological and Research Institute for conducting bio-test.

**Preventive vaccinations.**—The available vaccine at the Veterinary Biological and Research Institute has been tried by Assistant Disease Investigation Officer and the field staff in several places. Ovination with the materials collected from local cases also has been done in the face of outbreaks in some places. In either of the methods, 'takes' have not been observed in all the vaccinated stock. No perceptible reaction occurred in a large number of the vaccinated. In some, slight erythema to severe reaction occurred. In a few cases generalised eruptions occurred after the use of both the products.

Three thousand nine hundred and eighty-nine sheep were vaccinated with the Veterinary Biological and Research Institute product. Three hundred and two cases were ovinated with the materials obtained from local cases for the period under report.

**Immunity test.**—A batch of 4 sheep vaccinated with the Veterinary Biological and Research Institute vaccine in December 1953 were challenged in March, three months after vaccinations with the virulent sheep pox virus obtained from the Veterinary Biological and Research Institute. The vaccinated sheep did not take up the infection while one out of the two control sheep reacted. Some more such tests will have to be done in future.

**Helminthiasis.**—Reports of sheep and goats suffering from diarrhoea and ailing for a number of days were received from Tanjore, South Arcot and the Nilgiris districts. The faecal samples from several animals revealed ova or larvae of Strongyle species. In some places, the lesions observed were suggestive of Amphistomiasis and Fascioliasis.

Advice has been given for treatment of the flocks with suitable anthelmintics such as phenothiazine, copper-sulphate and hexachlorethane.

**Entero-toxaemia.**—The disease was reported from the districts of Coimbatore, South Arcot, Madurai, North Arcot and Chingleput. The outbreaks occurred from October to January.

Materials from the carcasses of these outbreaks proved negative for Anthrax, Pasteurellosis, Listerellosis and plant poisoning.

The symptoms and the course of the disease, the disease confining to sheep generally were suggestive of Entero-toxaemia.

*Cl. welchi* have been detected from some of the specimens sent. The Indian Veterinary Research Institute have stated that *Cl. welchi* type 'A' and 'D' have been isolated. The intestinal contents of some of the carcasses revealed the presence of toxins when the filtrates were inoculated into experimental animals.

**Prevention.**—Three thousand five hundred and seventy-four sheep have been inoculated with the anaculture of *Cl. welchi* type 'B' and 'D'. Most of the vaccinations have been done after the commencement of the outbreak. Preventive vaccinations have to be done in the endemic villages in advance of the outbreak season in future years and the results watched.

**86. Scheme for the investigation into the diseases of poultry.**—During the period under report the following important poultry diseases were investigated and necessary remedial measures in the way of prevention and control adopted, by the Assistant Diseases Investigation Officer (Poultry).

**Ranikhet disease.**—The incidence of this disease was recorded in the following districts affecting all ages and breeds of birds :—

(1) North Arcot, (2) Salem, (3) Coimbatore West, (4) Coimbatore East (Erode); (5) Tiruchirappalli, (6) Malabar, (7) South Kanara and (8) Madras.

Ducks, geese, pigeons and peacocks kept in close quarters were found to be refractory to the disease.

The disease was noticed to prevail all round the year and from the vaccination statements received from the field staff for Ranikhet disease vaccinations done in different districts, the following are the details of reactions observed :—

| Exotic birds.                       |                                   |     |                        |       |                        |      |
|-------------------------------------|-----------------------------------|-----|------------------------|-------|------------------------|------|
| Serial number and name of district. | Total number of birds vaccinated. |     | Drowsiness percentage. |       | Diarrhoea per centage. |      |
|                                     | F                                 | A   | F                      | A     | F                      | A    |
| (1)                                 | (2)                               | (3) | (4)                    | (5)   | (6)                    | (7)  |
| 1 North Arcot .. ..                 | 657                               | 189 | 40.5                   | 39.1  | 9.2                    | 31.6 |
| 2 Salem .. ..                       | 851                               | ..  | 16.4                   | ..    | ..                     | ..   |
| 3 Coimbatore, West ..               | 1,738                             | ..  | 5.0                    | ..    | 2.4                    | ..   |
| 4 Erode .. ..                       | 1,909                             | ..  | 1.4                    | ..    | 0.4                    | ..   |
| 5 Tiruchirappalli ..                | 553                               | ..  | 43.5                   | ..    | 6.0                    | ..   |
| 6 Malabar .. ..                     | 329                               | 242 | ..                     | 75.0  | ..                     | 25.0 |
| 7 South Kanara .. ..                | 108                               | ..  | 54.8                   | ..    | 3.2                    | ..   |
|                                     | 6,145                             | 431 | ..                     | ..    | ..                     | ..   |
| Average percentage ..               | ..                                | ..  | 23.1                   | 57.05 | 3.0                    | 28.3 |

|                       | Paralysis percentage. |     | Egg stoppage percentage. |       | Mortality per centage. |      | Reaction, mild or severe. |
|-----------------------|-----------------------|-----|--------------------------|-------|------------------------|------|---------------------------|
|                       | F                     | A   | F                        | A     | F                      | A    |                           |
|                       | (8)                   | (9) | (10)                     | (11)  | (12)                   | (13) | (14)                      |
| 1 North Arcot .. ..   | 2.4                   | 3.0 | 13.6                     | 18.3  | 2.9                    | 6.3  | M                         |
| 2 Salem .. ..         | ..                    | ..  | 1.2                      | ..    | ..                     | ..   | M                         |
| 3 Coimbatore, West .. | 1.0                   | ..  | 4.6                      | ..    | ..                     | ..   | M                         |
| 4 Erode .. ..         | ..                    | ..  | ..                       | ..    | ..                     | ..   | M                         |
| 5 Tiruchirappalli ..  | 7.0                   | ..  | 7.0                      | ..    | 1.7                    | ..   | M                         |
| 6 Malabar .. ..       | ..                    | ..  | ..                       | 50.0  | 6.0                    | ..   | M                         |
| 7 South Kanara .. ..  | ..                    | ..  | 12.0                     | ..    | 0.5                    | ..   | M                         |
|                       | ..                    | ..  | ..                       | ..    | ..                     | ..   | ..                        |
| Average percentage .. | 1.485                 | 1.5 | 5.48                     | 34.15 | 1.58                   | 3.15 | ..                        |

| Indigenous birds.                   |                                   |     |                        |      |                       |      |
|-------------------------------------|-----------------------------------|-----|------------------------|------|-----------------------|------|
| Serial number and name of district. | Total number of birds vaccinated. |     | Drowsiness percentage. |      | Diarrhoea percentage. |      |
|                                     | F                                 | A   | F                      | A    | F                     | A    |
| (1)                                 | (2)                               | (3) | (4)                    | (5)  | (6)                   | (7)  |
| 1 North Arcot .. ..                 | 487                               | 637 | 40.0                   | 42.8 | 11.0                  | 20.0 |
| 2 Salem .. ..                       | 4,231                             | ..  | 2.2                    | ..   | ..                    | ..   |
| 3 Coimbatore, West ..               | 3,742                             | ..  | 1.5                    | ..   | 0.9                   | ..   |
| 4 Erode .. ..                       | 7,223                             | ..  | 0.3                    | ..   | ..                    | ..   |
| 5 Tiruchirappalli ..                | 595                               | ..  | 4.0                    | ..   | ..                    | ..   |
| 6 Malabar .. ..                     | 167                               | 193 | ..                     | 50.0 | 5.0                   | 20.0 |
| 7 South Kanara .. ..                | 393                               | ..  | 6.0                    | ..   | ..                    | ..   |
|                                     | 16,838                            | 830 | ..                     | ..   | ..                    | ..   |
| Average percentage ..               | ..                                | ..  | 7.71                   | 46.4 | 2.41                  | 20.0 |

*Indigenous birds—cont.*

| Serial number and name of district. | Paralysis percentage. |     | Egg stoppage percentage. |      | Mortality percentage. |      | Reaction, mild or severe. |
|-------------------------------------|-----------------------|-----|--------------------------|------|-----------------------|------|---------------------------|
|                                     | F                     | A   | F                        | A    | F                     | A    |                           |
|                                     | (8)                   | (9) | (10)                     | (11) | (12)                  | (13) |                           |
| 1 North Arcot .. ..                 | ..                    | ..  | 12.3                     | 36.5 | ..                    | 12.0 | M                         |
| 2 Salem .. ..                       | ..                    | ..  | 0.3                      | ..   | ..                    | ..   | M                         |
| 3 Coimbatore, West ..               | 1.0                   | ..  | 1.4                      | ..   | ..                    | ..   | M                         |
| 4 Erode .. ..                       | ..                    | ..  | ..                       | ..   | ..                    | ..   | M                         |
| 5 Tiruchirappalli ..                | ..                    | ..  | ..                       | ..   | ..                    | ..   | M                         |
| 6 Malabar .. ..                     | ..                    | ..  | ..                       | 38.0 | ..                    | ..   | M                         |
| 7 South Kanara .. ..                | ..                    | ..  | 1.0                      | ..   | ..                    | ..   | M                         |
| Average per centage ..              | 0.14                  | ..  | 2.14                     | 37.2 | ..                    | 6    |                           |

The total number of vaccinations conducted by the Assistant Disease Investigation Officer both in the affected and in the free areas and the types of reactions produced in the respective areas are as follows—

| Districts.  | Total<br>number<br>of<br>vaccina-<br>tions. | Type of reactions observed.                        |    |                           |    |                           |    |                       |                           |    |
|-------------|---------------------------------------------|----------------------------------------------------|----|---------------------------|----|---------------------------|----|-----------------------|---------------------------|----|
|             |                                             | Drowsiness.<br>percentage.                         |    | Diarrhoea.<br>percentage. |    | Paralysis.<br>percentage. |    | Duration.             | Mortality.<br>percentage. |    |
|             |                                             | F.                                                 | A. | F.                        | A. | F.                        | A. |                       | F.                        | A. |
| Madras ..   | 344                                         | No percep-<br>table<br>drowsi-<br>ness<br>noticed. |    | ..                        | .. | ..                        | .. | 8 to 10 weeks<br>old. | ..                        | .. |
| Salem .. .. | 28                                          | Do.                                                |    | ..                        | .. | ..                        | .. | 8 weeks old.          | ..                        | .. |

To ascertain if birds vaccinated with the Komorove Strain were immune to Ranikhet disease or otherwise, random selection of the vaccinated birds was made 21 days after vaccination and the serum of such selected birds gave positive inhibition titre to Ranikhet disease.

From the types of reactions set up by the abovesaid two strains of Ranikhet vaccine, the Komorove Strain can be preferred for immunising birds against Ranikhet Disease. The Komorove Strain of vaccine has been introduced only recently and the duration of immunity conferred by this strain of vaccine so far recorded has been for 9½ months. Further immunity tests to study the duration of immunity conferred in such vaccinated birds will be conducted in the coming year.

*Experiments* to study if the developing embryos in eggs obtained immune birds are resistant to Ranikhet disease virus or not were conducted and it was noted that the embryos up to the 15th day of development succumbed to the virus infection and resisted the infection from the 16th day onwards. Experimentally it was studied that the 14th and the 15th day developing embryos succumbed to Ranikhet disease infection while the 16th and 17th day developing embryos remained alive even after 48 to 72 hours of Ranikhet Disease Virus infection.

To ascertain if chicks born to immune birds possess passive immunity or otherwise and similarly with reference to chicks born to non-immune birds experiments were conducted and the results are tabulated below:—

*Day old country chicks born to non-immune birds.*

| Date of infection. | Number of chicks utilised.  | Dose of Ranikhet disease virus given.       | Reactions.  |            |            |            | Remarks.                                                                          |
|--------------------|-----------------------------|---------------------------------------------|-------------|------------|------------|------------|-----------------------------------------------------------------------------------|
|                    |                             |                                             | Drowsiness. | Diarrhoea. | Paralysis. | Mortality. |                                                                                   |
| 5th November 1953. | 10 days old country chicks. | 0.5 c.c. of 1 in 20 dilution. subcutaneous. | ..          | ..         | ..         | ..         | ....                                                                              |
| 6th November 1953. | ..                          | ..                                          | 1           | ..         | ..         | 1          | (one died late in the evening) Post-mortem lesions positive for Ranikhet disease. |
| 7th November 1953. | ..                          | ..                                          | 9           | ..         | ..         | 9          | The post-mortem lesions of all the 9 chicks were positive for Ranikhet disease.   |

*Day old exotic chicks born to Immune birds.*—A batch of 6 exotic chicks born to immune birds were subcutaneously injected with 0.5 c.c. of (1 in 20 dilution) of Ranikhet disease virus on 11th March 1954 keeping two controls.

The controls died on the 4th day, dated 15th March 1954 showing positive lesions of Ranikhet disease while the day old infected chicks were seen quite healthy brisk with satisfactory appetite confirming thus that the chicks born to immune birds do possess anti-bodies against Ranikhet Disease.

To find out the minimum age level at which lasting immunity can be conferred in chicks through the Ranikhet Disease Vaccination by testing them periodically with a challenging dose of Ranikhet Disease Virus experiments have been conducted and the results are tabulated below:—

| Experiments with 9 days old chicks. |                           |                      |                              |                          |            |                                      |                                                                                                                                                                                                                                                                          |                                                                                        |
|-------------------------------------|---------------------------|----------------------|------------------------------|--------------------------|------------|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| Serial Number.                      | Age of chicks vaccinated. | Date of vaccination. | Number of chicks vaccinated. | Number of chicks reacted | Mortality. | Number of chicks retested with date. | Result.                                                                                                                                                                                                                                                                  | Remarks.                                                                               |
| ..                                  | 9 days old.               | 18th March 1954.     | 6                            | 6                        | 3          | 3 on 12th April 1954.                | The vaccinated chicks were drowsy of which 3 reacted severely. They were not inclined to feed or move about.                                                                                                                                                             | The chicks will be periodically tested to know the lasting immunity conferred in them. |
|                                     |                           |                      |                              |                          |            |                                      | One chick died on 21st March 1954,                                                                                                                                                                                                                                       |                                                                                        |
|                                     |                           |                      |                              |                          |            |                                      | another died on 22nd March 1954 and still another died on 29th March 1954. The other chicks are quite healthy and were retested on 12th April 1954 keeping two controls. On retest the 3 chicks stood the test although the controls died positive for Ranikhet disease, |                                                                                        |

| Experiments with 12 days old chicks. |                           |                      |                              |                           |            |                                      | Result.                                                                                                                                                                                                                                                                                                                       | Remarks.                                                                                      |
|--------------------------------------|---------------------------|----------------------|------------------------------|---------------------------|------------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Serial Number.                       | Age of chicks vaccinated. | Date of vaccination. | Number of chicks vaccinated. | Number of chicks reacted. | Mortality. | Number of chicks retested with date. |                                                                                                                                                                                                                                                                                                                               |                                                                                               |
| 2                                    | 12 days old.              | 21st March 1954.     | 6                            | 6                         | 1          | 5 on 12th April 1954.                | The vaccinated chicks manifested slight drowsiness. One of them reacted severely showing disinclination to move about and died on 5th April 1954. The other 5 chicks were retested on 12th April 1954 with Ranikhet disease virus, keeping two controls. The controls died while the vaccinated 5 chicks stood the test.      | The 5 chicks will be periodically tested to ascertain the lasting immunity conferred in them. |
| Experiments with 15 days old chicks. |                           |                      |                              |                           |            |                                      | Result.                                                                                                                                                                                                                                                                                                                       | Remarks.                                                                                      |
| Serial Number.                       | Age of chicks vaccinated. | Date of vaccination. | Number of chicks vaccinated. | Number of chicks reacted. | Mortality. | Number of chicks retested with date. |                                                                                                                                                                                                                                                                                                                               |                                                                                               |
| ..                                   | 15 days old.              | 27th March 1954.     | 6                            | 6                         | Nil.       | 6 on 12th April 1954.                | Slight drowsiness was noticed in the vaccinated chicks. They were otherwise normal. On 12th April 1954 they were retested with a dose of Ranikhet disease virus keeping two suitable controls. The 2 controls died of Ranikhet disease while the vaccinated chicks withstood the test.                                        | The 6 chicks will be periodically tested to know the lasting immunity conferred in them.      |
| Experiments with 18 days old chicks. |                           |                      |                              |                           |            |                                      | Result.                                                                                                                                                                                                                                                                                                                       | Remarks.                                                                                      |
| Serial Number.                       | Age of chicks vaccinated. | Date of vaccination. | Number of chicks vaccinated. | Number of chicks reacted. | Mortality. | Number of chicks retested with date. |                                                                                                                                                                                                                                                                                                                               |                                                                                               |
| ..                                   | 18 days old.              | 30th March 1954.     | 6                            | 6                         | Nil.       | 6 on 12th April 1954.                | A mild form of drowsiness was noticed in all the six vaccinated chicks. They were later retested on 12th April 1954 with a dose of viable Ranikhet disease virus keeping two suitable controls. The two controls died of Ranikhet disease while the vaccinated chicks withstood the challenge and are now seen quite healthy. | The 6 chicks will be periodically tested to know the lasting immunity conferred in them.      |

### The experiment is being continued

**Pigeon pox.**—An outbreak of pigeon pox was recorded in Punjai Puliampatti village of Gobichettipalayam taluk, Coimbatore district. The incidence of pox in pigeons has been very rare. The affected pigeons manifested both the cutaneous and diphtheritic forms of pox and mortality was fairly high in young ones. The source of infection has been through the purchase of fresh pigeons in the local shandy.

The specimens of scab collected from the affected pigeons proved positive for pox when biologically tested on healthy pigeons.

The protective value of the chick embryo pigeon pox vaccine on pigeons has not been so far ascertained. However in the scene of outbreak 100 pigeons manifesting no lesions of fowl pox have been protected against pox with the freeze dried chick embryo pigeon pox vaccine. The statement of reaction received after three weeks was as follows :—

| Number of pigeons protected with the freeze dried chick embryo pigeon pox vaccine in actual out-break. | Percentage of drowsiness. | Percentage of takes manifested. | Percentage that developed pox in a generalised form. | Percentage of mortality. | Remarks. |
|--------------------------------------------------------------------------------------------------------|---------------------------|---------------------------------|------------------------------------------------------|--------------------------|----------|
| 100                                                                                                    | 59.5                      | 87.8                            | 6.1                                                  | Two.                     | ..       |

The above reactions have been observed in pigeons vaccinated in an actual outbreak of pox. It would appear therefore the chick embryo pigeon pox vaccine could be safely used on pigeons in actual outbreaks of pigeon pox in pigeons. However some more trials on pigeons have to be made with the vaccine before it is concluded that the vaccine is quite good for pigeons in actual outbreaks of pox.

**Fowl pox.**—An outbreak of fowl pox was noticed in the Poultry Resaerach Station, Teynampet in January 1954 amongst the unprotected lot of 5 to 6 weeks old chicks. The source of infection was through suffering birds located round about the Poultry Farm. The affected birds manifested a severe type of the cutaneous form of the disease and a mortality of 4 chicks was recorded.

The apparently healthy chicks 35 in number that were not manifesting any pox lesion were immediately isolated and vaccinated against fowl pox with the freeze dried chick embryo fowl pox vaccine.

The reactions observed in such vaccinated chicks were as follows :—

All the vaccinated chicks showed satisfactory 'takes'.

About 50 per cent of the vaccinated chicks showed a generalised form of fowl pox since vaccinations were done in an actual outbreak and a mortality of about 25 per cent was met with. The other 50 per cent of the birds were quite healthy.

Later in February 1954 the incidence of the disease was noticed in the brooder house affecting young chicks of 1 to 2 weeks old manifesting the cutaneous as well as the ocular forms of the disease. The disease was just in the initial stage.

**Control measures.**—(1) Three hundred and twenty-two incontact young chicks of one week and above that had not been manifesting any pox lesions were forthwith removed to fresh grounds and were vaccinated with the Freeze dried chick embryo pigeon pox vaccine to prevent to possible losses that might result if the disease was allowed to run its course and to speed up the production of immunity.

(2) The badly affected ones were destroyed and burnt.

(3) The structures were scraped and sprayed with 5 per cent carbolic acid and the contaminated runs were dressed with ground quick lime.

(4) Advice was given to stop hatching in view of the infection being present and the approaching summer season and to market all the chicks obtained from the incubators.

The disease was brought under control with the above measures.

In the free areas 966 chicks ranging from 2 weeks onwards have been successfully protected against fowl pox with the freeze dried chick embryo fowl pox vaccine during the period.

The vaccinated chicks without any exception manifested 'take's.' About 5 per cent of the chicks vaccinated with fowl pox vaccine showed stray pox lesions on their beaks caused by rubbing the seat of vaccination with their beaks and the lesions so produced had no tendency to spread or infect the unvaccinated lot of chicks and no mortality has been recorded amongst such affected chicks.

The chicks vaccinated with the fowl pox vaccine were seen better immunised against the disease since they resisted subsequent outbreaks of fowl pox. With the timely vaccination with the freeze dried fowl pox vaccine, the incidence of contagious Coryza also has not been recorded.

*Immunity test conducted.*—Two birds immunised against fowl pox with the freeze dried chick embryo fowl pox vaccine on 1st April 1953, were challenged with the fowl pox scab virus on the 10th December 1953 keeping two controls. The vaccinated birds withstood the challenging dose while the controls developed pox in the cutaneous form. The immunity conferred so far has been studied to be for about 3 months. Further tests to ascertain a longer period of immunity conferred in birds vaccinated with the freeze dried chick embryo fowl pox vaccine will be done in the coming year.

*Avian Leucosis complex.*—The incidence of this disease was recorded in the Livestock Research Station, Hosur in chicks of over 10 weeks old, causing mortality in them in November 1953. The manifestation of the disease was the ocular form of Avian Leucosis Complex in which the Iris turned whitish and the pupil become irregular in shape and did not respond to light. Neck muscles also were involved exhibiting torticollis. The blood pictures of the affected chicks showed numerous lymphoid cells suggestive of Avian leucosis Complex. Besides the chicks were very light in weight. The affected chicks were destroyed and disposed of suitably.

In December again the incidence was noticed in the neurotropic form in chicks over 8 weeks old affecting the limbs. Certain chicks showed blood leukemia also. A mortality of 8 chicks as noticed was due to the above causes.

As in the light of the present knowledge no vaccine or any curative agent is available towards the control of Avian leucosis Complex, the only possible method to tackle the problem has been to systematically conduct blood examinations for spotting and culling out for table the affected birds. Thus during the period 176 birds have been examined of which 70 have been culled for table as affected.

The Superintendent of the Farm has been advised to follow very strictly the following suggestions:—

(1) To maintain a continuous practice of culling out birds showing any form of fowl paralysis such as leg or wing lameness, diseased eyes including grey iris of any kind, irregular pupils and bulging of eye balls, tumours of skin, emaciation and dropsical abdomen.

(2) To build up a new strain through genetical approach, viz., to breed through the healthy survivors of the old stock that have been surviving in actual outbreaks of fowl paralysis.

*Coccidiosis.*—The incidence of the disease was noticed in the poultry unit attached to the Veterinary Hospital, Erode, in 2 to 4 weeks old chicks causing mortality in them. The affected chicks looked dull shivering with ruffled feathers, keeping aloof from the rest of the chicks. Post-mortem examination revealed haemorrhagic caeca and the scrapings contained numerous broad ovoid oocysts of coccidia belonging to the species *Eimeria Tenella*.

*Control measures taken.*—Daily cleaning and frequent removal of droppings containing the infectious material was advised in order that the organisms which are being passed in the droppings may be prevented from developing into the stage which is infective. Spraying of poultry houses with cresol solution, application of staked lime to the ground, putting feeding troughs and drinking vessels in boiling water at frequent intervals and burning the dead chicks and the litter contaminated with the droppings were advised to maintain coccidial infection at a minimum so that birds by their continuous ingestion of small numbers of oocysts may get immune to the infection.

*Treatment.*—Both Embasin and Sulphamazethine were tried. Chicks treated in the initial stage of infection with Embasin and Sulphamazethine separately recovered well and in the other delayed cases the treatment was of no avail.

*Prophylactic measures taken against Coccidiosis.*—Since heavy mortality has been noticed in chicks of 2 to 4 weeks old the deep litter system of rearing chicks has been adopted. A litter consisting of dried cut straw or hay of 4" to 6" deep was provided and the litter was not changed every day but was stirred well daily and allowed to be used continuously for a couple of weeks.

The incidence of Coccidiosis was never recorded since the oocysts of coccidia could not thrive in the presence of ammonia contained in the urine mixed with the faecal matters in the litter.

*Contagious Coryza.*—An adjuvant vaccine prepared with the organism corynebacterium in type isolated from the lesions of the affected birds which is expected to give a longer duration of immunity has been tried on a batch of 4 birds on 11th October 1953 with a dose of 1 c.c. injected subcutaneously.

On 24th December 1953 the abovesaid vaccinated birds were challenged with a dose of the virulent culture compared to B.O.T. No. 20 dose 5 c.c. subcutaneously, keeping two controls.

It was observed later that the 2 controls developed foetid nasal discharge in a severe form and died while the vaccinated birds were seen quite healthy and the immunity so far confirmed has been for about 2½ months.

The vaccinated birds will be challenged again after a period of 6 months from the date of vaccination and the results recorded.

*Avian tuberculosis.*—As a routine measure to spot out the incidence of Avian Tuberculosis 16 emaciated old and suspicious birds have been tested with Avian Tuberculin at the Poultry Research Station, Teynampet. The results in all instances were negative.

✓ *Salmonella Pullorum and Gallinerum.*—To spot the carriers of infection 195 adult birds were tested by the rapid whole blood strain antigen method against *Salmonella pullorum* disease. The above birds proved negative for the disease.

Cases of fowl typhoid, *Agyptinella pullorum* and *Trichomoniasis*, were not met with among poultry during the period.

87. *Specimens examined.*—One hundred and twelve specimens of blood smears, faeces, heart blood swabs, internal organs, etc., received from the field staff were examined and reported upon.

Two hundred and two specimens of blood smears, faeces, parasites, etc., were collected and examined in the course of tours during the period.

Sixty-seven specimens of internal organs received from the field staff and suspected for Ranikhet Disease were tested biologically on fowls and all proved negative for the disease.

## XI. NATIONAL EXTENSION SERVICE.

88. The firkas selected for intensive rural reconstruction work have been taken as blocks for development under the National Extension Service programme and accordingly the Rural Welfare Scheme has been absorbed into the Extension programme to secure an unified command and direction of activities. Thus there were 28 blocks with one Animal Husbandry Extension Officer for each block to render all veterinary aid and livestock improvement work in the areas. The work done by the departmental staff in the areas during the period is furnished below:—

The number of bulls stationed in the areas for stud were 172 as against 292 at the end of the year 1952-53 and they have performed 8,309 services as against 15,979 in the previous period. Six thousand one hundred and seventy-two scrub bulls were castrated during the period. Immunizing the cattle against contagious diseases was undertaken intensively and 35,858 inoculations were conducted. Twelve thousand four hundred vaccinations were done against the Ranikhet disease; 20,133

cases were treated for non-contagious disease. Out of 3,829 calves born to the bulls stationed, 1,614 calves were inspected. Cockerels of exotic breeds were continued to be supplied in the areas to grade up the country stock. Poultry production centres at Kinnigoli in South Kanara district, T. Kallupatti in Madurai district, Saliamangalam in Tanjore district and Malli in Ramanathapuram district continued to function. Eggs produced at these centres were sold to the public.

The Veterinary Assistant Surgeons of the three sheep rearing and demonstration units toured the firka development areas in their jurisdiction. They inspected the local flocks and distributed rams and advised the owners with regard to the scientific breeding and management of sheep and goats, improved methods of washing, shearing and grading of wool according to quality and colour. Deworming and deticking demonstrations were conducted.

*Village Livestock Improvement Scheme at Saliamangalam in Tanjore district.*—Three bulls of Umblacherry breed were continued to be stationed and they served 65 cows. Thirty cows were registered. The Madras Livestock Improvement Act continued to be in force till January 1954 and 34 mature cattle were castrated. Thirty-one calves were inspected.

*Malli in Ramanathapuram district.*—The Village Livestock Improvement Scheme at Malli continued to function with two Kangayams and two Murrah buffalo-bulls. Out of four bulls one Kangayam and one Murrah have not commenced serving. The provisions of the Madras Livestock Improvement Act continued to be in force during the period. The bulls stationed in the area performed 100 services during the period. Seventy-eight she-buffaloes and 22 cows were registered. The calves born were inspected.

*Madurai.*—The Firka Development work was merged with the National Extension Service on 2nd October 1953. Six Veterinary First Aid centres have been opened. A "One day Cattle show" was held during the period. A sheep Breeder's Association has been organized in Ammapatti village in Tirumangalam block. Nine of the best local rams have been supplied. A Poultry Association has also been organized in this village and 3 units of 33 birds have been purchased and distributed for grading up poultry. There were 6 Kangayam bulls and 2 Murrah buffalo-bulls. They have performed 245 services. Ninety-seven calves were born. One thousand three hundred and fifty-four sheep were dewormed and 484 sheep were deticked in the area during the period. The staff working under this Scheme have treated 3,836 cases, performed 979 castrations and conducted 1,253 Ranikhet disease vaccinations. Five breeding bulls have been purchased at the end of the period and stationed in selected villages for stud purposes.

*Ramanathapuram.*—A first aid centre at Managasseri continued to function catering veterinary aid to the ryots in the area. There were 7 Kangayam bulls, 2 Scindhi bulls and one Murrah buffalo-bull and they performed 233 services. Out of 34 calves born 32 were inspected. One thousand three hundred and forty-four inoculations were done, 598 cases were treated, 229 castrations were performed, 492 sheep were dewormed, 145 birds were protected against fowl pox and 2,869 birds were protected against Ranikhet disease.

*Tirunelveli.*—There were two Veterinary First Aid centres at Kuruvikulam and Karivalam-Vandanallur. There were 8 Kangayam bulls, one Scindhi and 4 Murrah buffalo-bulls. They performed 288 services and the number of calves born and inspected were 149. Seven hundred and forty-seven cases were treated and 331 castrations were done during the period.

*Salem.*—One Kangayam, one Hallikar and 2 Scindhi bulls were purchased. The one Murrah buffalo-bull purchased was not stationed. These bulls performed 23 services. One thousand five hundred and five cases both contagious and non-contagious were treated and 386 castrations were done. One thousand four hundred and ninety-seven inoculations were done against Black Quarter and Anthrax. One thousand two hundred and forty-seven sheep were protected against sheep pox. 413 birds were protected against Ranikhet disease and fowl pox. Forty lambs were born to the Bellary rams in the area during the period. All the Block Development Committee meetings held were attended.

*Coimbatore.*—There were 34 bulls at stud at the end of the period and they performed 788 services. Two hundred and eleven calves were born. Four thousand eight hundred and forty-two cases were treated, 600 castrations were done and 4,517 inoculations were done.

*Erode.*—The existing centres were redistributed as follows :—

*Kangayam Block.*—Kangayam and Vellakoil firkas of Dharapuram taluk and Palladam firka of Palladam taluk.

*Tiruppur Block.*—Tiruppur firka of Palladam taluk.

There were 44 breeding bulls in these blocks and they performed 5,173 services. Out of 2,751 calves born 1,156 calves were inspected. Five thousand six hundred and twenty-eight inoculations were done; 4,779 cases were treated; 1,136 castrations were performed and 4,554 birds were protected against Ranikhet disease. There are two minor veterinary dispensaries and a Veterinary Hospital in these blocks. Two Key Village centres are also working in one of the blocks.

*Chingleput.*—There was one bull and it has performed 11 services. Out of 16 calves born, 15 were inspected. Two hundred and sixty-seven cases were treated; 286 castrations were conducted and 15,692 inoculations were done. Six meetings were held and a cattle show was conducted.

*North Arcot.*—There were four bulls in the different schemes and they have performed 114 services. Out of 41 calves born 21 were inspected. Two hundred and seventy-four cases were treated; 619 castrations were done and 757 vaccinations were conducted. Twelve poultry units continued to function in the area and 147 eggs were sold for hatching. A 'One Day Cattle Show' was conducted during the period.

*South Arcot.*—Two Kangayam bulls and 3 Mandya rams were stationed in the area. Seven services were performed; 17 calves were born and 10 calves were inspected. Seven hundred and sixty cases were treated, 267 castrations were performed and 391 inoculations were conducted.

*Tanjore.*—There were 12 breeding bulls and they performed 405 services and 105 calves were born. Nine hundred and nineteen cases were treated; 315 castrations were performed and 1,571 inoculations were conducted. Five hundred and fifteen birds were protected against Ranikhet disease.

*Tiruchirappalli.*—There were 15 breeding bulls and they performed 472 services. One hundred and eighty-one calves were born and 65 calves were inspected. Four hundred and eighty-five cases were treated; 576 castrations were done and 2,734 inoculations were conducted. Three meetings were attended. Two 'One Day Cattle Shows' were held in the area during the period.

*South Kanara.*—There were 11 bulls and 3 bucks in the area. Two hundred and eighty-two services were done by the bulls. Out of 102 calves born, 83 calves were inspected. Out of 74 kids born, 63 were inspected. Four hundred and eight inoculations were conducted, 849 cases were treated and 128 castrations were done.

*Malabar.*—Eight Scindhi bulls and one Murrah buffalo-bull were stationed at stud. They have performed 103 services. Out of 69 calves born 42 were inspected. Three hundred and six castrations performed. Two hundred and fifty-nine cases were treated. Thirteen bovines were given anti-rabic treatment. Sixty-eight birds were protected against Ranikhet disease.

## XII. VETERINARY PUBLIC HEALTH.

89. (a) *Milk inspection.*—The milk and milch stock belonging to the 39 co-operative milk supply unions and societies were inspected by the departmental staff. Advice was given to keep the stalls, the animals and the milk utensils, etc., clean.

(b) *Meat inspection.*—Eight municipalities engaged their own veterinary Assistant Surgeons for inspection of meat in their respective municipal slaughter houses.

Thirty-nine municipalities and 38 panchayat boards in the State utilized part-time services of the Veterinary Assistant Surgeons of this department who were stationed in the respective localities concerned for inspection of meat. They examined 14,886 cattle, 236,741 sheep, 166,736 goats and 141 pigs anti-mortem and condemned 868 cattle, 7,579 sheep and 5,330 goats. In the course of meat inspection they confiscated and condemned 12,899 carcasses in part or whole for unsightly conditions rendering the flesh unfit for human consumption.

(c) *Lethal chambers*.—The Departmental staff as usual inspected the lethal chambers maintained by the local bodies for the destruction of dogs and reported on them with suggestions. The destruction of stray dogs is taken up by the local bodies as a measure in controlling the incidence of rabies in the area. All advice and suggestions to further the efficiency of this work in controlling rabies and preventing risk to human life were given.

### XIII. MISCELLANEOUS.

90. (a) *Criminal poisoning*.—The Chemical Examiner to Government examined 79 materials connected with the cattle poisoning. The number of cases of poisoning detected is as shown below :—

| Nature of material examined.         | Number of cases detected. | Kind of poison. |
|--------------------------------------|---------------------------|-----------------|
| Viscera and contents .. .. .         | 14                        | Arsenic.        |
| Excreta with viscera .. .. .         | 3                         | Arsenic.        |
| Miscellaneous articles .. .. .       | 1                         | Oleander.       |
| Miscellaneous articles .. .. .       | 1                         | Arsenic.        |
| Miscellaneous articles alone .. .. . | 2                         | Oleander.       |
| Miscellaneous articles alone .. .. . | 2                         | Arsenic.        |

Malicious arsenic poisoning of cattle for their hides was continued to be detected by the Department in Madurai and other districts and all preventive measures including reports to police were made to put down the practice.

The departmental staff examined and certified 97 cases of malicious injury and issued 52 post-mortem certificates.

91. *The Prevention of Cruelty to Animals Act*.—The total number of convictions under the Act during the period was 6,806 as against 7,442 in the previous half year.

92. *Forest Department Livestock*.—There was no contagious disease among the livestock of the Forest Department during the period under report. Elephants of Coimbatore South Division were protected as usual against Anthrax. Two hundred and forty-two non-contagious cases were treated as against 286 of the previous half year. Nineteen elephants were sold during the period for a total sum of Rs. 43,300 as against Rs. 1,41,651 realized by sale of 38 elephants during the previous half year by the Forest Department.

A statement of livestock maintained by the Forest Department is furnished below :—

| Animals.          | No. remaining on 1st October 1953. | Additions. |         |            |            | Deductions. |       |            |       | No. remaining on 31st March 1954. |
|-------------------|------------------------------------|------------|---------|------------|------------|-------------|-------|------------|-------|-----------------------------------|
|                   |                                    | Captures.  | Births. | Transfers. | Purchases. | Total.      | Sold. | Destroyed. | Lost. | Total.                            |
| Elephants .. .. . | 132                                | 3          | 4       | 13         | ..         | 20          | 19    | ..         | 3     | 27                                |
| Buffaloes .. .. . | 4                                  | ..         | ..      | ..         | ..         | ..          | ..    | ..         | ..    | 4                                 |
| Bullocks .. .. .  | 2                                  | ..         | ..      | ..         | 12         | 2           | 2     | ..         | ..    | 2                                 |

93. *Propaganda*.—The departmental staff carried out the usual propaganda on various departmental activities with the aid of leaflets, pamphlets, posters, magic lantern slides and cine films.

The propaganda unit of this department participated in the several exhibition held in this State during the period under report of which the All-India Khadi Swadeshi and Industrial Exhibition held at Madras was the major one. A big relief map of the Residuary State was prepared in plywood, wherein all the main activities of this department were well represented with appropriate models fixed on the map. A model in each of the salvage of dry cows farm, Kambakkam, Key Village Centre showing rotational grazing and a silage pit were put up.

Posters and charts were sent to the other exhibitions and cattle shows held in the State during the period.

Apart from these an exhibition was conducted at the Madras Veterinary College in connection with Gosamvardhana Day celebration. The following posters, charts, maps and graphs were prepared by the Propaganda Unit during the period :—

- (1) Relief Map of Madras State—in plywood of 12' × 8' size.
- (2) Miniature model of salvage of dry cows farm, Kambakkam.
- (3) Model houses, etc., for farms, key village centres, etc.
- (4) Dissemination of rinderpest in Madras State.
- (5) Activities of Animal Husbandry Department (Residuary State).
- (6) Utilization of carcass (3 copies).
- (7) Lactation curve—Graph.
- (8) Table of duration of pregnancy in a cow.
- (9) Gestation Table.
- (10) Advantage of new shears.
- (11) Classing of wool.
- (12) Graph-Poultry Research Station, Teynampet.
- (13) Details of working of the salvage of dry cows farm.
- (14) Madras State Map showing key villages, artificial insemination centres and key farm centres.
- (15) Artificial insemination—Tamil poster.
- (16) Artificial insemination in the Madras City.
- (17) Key Village Scheme in Community Projects—Coimbatore district.
- (18) District Map of Madurai showing Key Village Scheme and Community Projects.
- (19) Graph on rinderpest inoculations done in the State.

94. *Glanders inspection*.—The Veterinary Assistant Surgeon in charge, Glanders Inspection, Madras City, inspected 399 equines and 6,854 bovines during the period under report and found most of them healthy. He conducted routine inspections of the cattle yards of the State hospitals in the City, jutka stands, milking yards and cattle sheds.

Two hundred horses that were landed at the Madras Harbour were inspected by the District Veterinary Officer, Madras and Glanders Inspector. Eleven horses belonging to the King Institute, Guindy, were malleined during the period under report.

### XIV. POST-WAR DEVELOPMENT SCHEMES.

95. All the schemes under this head continued to function during the period. Sanction was not accorded for the opening of new veterinary institutions, touring billets and appointment of Veterinary and Livestock Inspectors during the period 1st October 1953 to 31st March 1954. A sum of Rs. 5,000 sanctioned by Government towards purchase of Murrah buffalo-bulls at the All-India Cattle Show at Rhotax, Punjab State, could not be utilized for want of good animals.

## XV. ANIMAL HUSBANDRY STATISTICAL WORK.

96. The following important statistical analysis on animal breeding and nutrition were taken up during the period.

- (1) Design of a fresh fish meal experiment by randomisation on the conclusions evolved by the preliminary experiment.
- (2) Graphs and maps with respect to poultry and other particulars.
- (3) Selection of proven sires for use in the breeding programme for 1954-55.
- (4) The probable sire indices were calculated for all the available male stock for future use of stud at the Livestock Research Station, Hosur.
- (5) The breeding programme for the Scindhi, Kangayam and Gir herd was formulated as per the groups with respect to milk yield, order of lactation and age and also as per the availability of proven bulls.
- (6) Study on the progenies of proven sire with respect to milk characters.

## XVI. FINANCE.

97. A statement showing the receipts and charges of the department for the period from 1st October 1953 to 31st March 1954 is appended (Table VIII) :—

*Charges.*

1st October 1953 to 31st March 1954. Rs. 20,02,295 (Provisional).  
1952-53. Rs. 60,62,705.

*Receipts.*

1st October 1953 to 31st March 1954. Rs. 2,74,076 (Provisional).  
1952-53. Rs. 8,82,202.

## XVII. PROGRAMME OF WORK.

98. (1) The programme of work proposed or expected to be undertaken during 1953-54 could not be implemented as they were not sanctioned by Government during the period.

(2) *Programme of work for 1954-55.*—The following items denote the broad outlines of the programme of work proposed or expected to be undertaken during 1954-55.

(a) *Veterinary Aid.*—(i) Scheme for the opening of nine regular institutions and scheme for the opening for ten touring billets (Minor Veterinary Dispensaries).

(ii) Employment of forty Veterinary and Livestock Inspectors.

(iii) Establishment of clinical laboratories at Headquarters Veterinary Institutions and Livestock Farms.

(iv) Supply of refrigerators to Headquarters Veterinary Hospitals in the districts with a view to ensure the potency of biological products and other medicines.

(v) Establishment of a Rinderpest quarantine station in the border areas of the State to prevent the ingress of the disease.

(b) *Education.*—(i) Implementation of the University Commission's recommendations in respect of staff equipment, etc., to the extent possible.

(ii) *Stockmen course.*—Introduction of stockmen course in the Madras Veterinary College, Madras, in the place of Veterinary and Livestock Inspectors course.

(iii) *Flying Centres in mufassal.*—Opening of auxiliary Flying Centres in the Mofussil stations.

(iv) Scheme for the introduction of a post-graduate course in Parasitology in Madras Veterinary College and organisation of Helminthiasis Research in the field.

(c) *Investigation and research.*—(i) Organisation and establishment of a statistical section in the Animal Husbandry Department to deal with problems of animal breeding, nutrition and disease control in the Madras State.

(ii) Scheme for the extensive field trial of Brucella products in one centre.

(iii) Continuance of the technical programme of the Disease Investigation Officer.

(iv) Scheme for the control and eradication of contagious abortion in bovines.

*Livestock Section.*

(a) *Livestock Research Station, Hosur Cattle Farm.*—(i) To concentrate on the Scindhi herd and to transfer the Kangayam animals gradually to new district farms as and when they are opened.

(ii) Growing of fodder crops and grasses.

(iii) Take measures to carry out soil conservation work.

(b) *District Livestock Farm, South Kanara.*—To improve the local breed by grading at the Farm.

(c) *District Livestock Farm, Malabar.*—To continue pedigree breeding of Scindhi and Murrah at the Farm.

(d) *District Livestock Farm, Pudukottai.*—To strengthen the farm by the acquisition of more lands and continue pedigree breeding of Kangayam and Scindhi.

(e) *Sheep Farm, Ootacamund.*—(i) To continue building up the farm and continue research on woolly sheep, fodder and pastures.

(ii) To start a small herd of foreign breed for cross-breeding.

(iii) To locate a sub-centre in the Nilgiris for undertaking sheep and wool improvement on a regional basis.

*General.*—To continue the loan of excess stock of animals to private breeders or private organisations and Co-operative Societies according to scheme, thus reducing the pressure on farms and at the same time create pedigree farms without much cost to Government.

*Key village.*—Opening of additional centres according to the programme of Government of India.

## XVIII. FIVE-YEAR PLAN.

99. The progress made on important schemes included under Five-Year Plan is furnished below :—

*Scheme under State Plan.*

(1) *Taking over Pudukottai Agricultural Farm.*—When the Pudukottai State was merged in this State the Central Agricultural Farm was taken over by this department with a view to develop it into a District Livestock Farm. The farm was taken over in June 1951 with all in land measuring 7 acres, buildings equipment and stock. It was proposed to maintain a small herd of Kangayam and also bulls in the breeds of Scindhi and Murrah to grade up the local cattle.

The farm has now a strength of 148 head of cattle and is functioning with limited facilities. Proposals of alternative sites suggested for the Farm is under correspondence with the Chief Conservator of Forests.

(2) *Establishment of Clinical laboratories.*—With the introduction of the 10 year land transformation scheme and the Five-Year Plans of Livestock Improvement and disease control, more facilities than those now available have to be provided in all districts for greater emphasis on the problems of disease control. Livestock improvement is inevitably linked with disease control. Many diseases capable of causing great economic loss through permanent damage and peculiar to each district or area require study and investigation. The need for prompt diagnosis and confirmation of disease condition cannot be over-emphasised in any scheme of disease

control both for chemotherapy and prophylactic treatment. In the practice of modern medicine the parts of laboratory methods and diagnostic aids to the clinician on the field are well recognised and their importance becomes still more significant to the Veterinary Clinician than to his human counterpart. The present practice of relying on the Madras Veterinary College laboratory in the diagnosis of diseases, in out of the way field stations is often so dilatory that treatment and control measures are delayed and postponed while disease gains in roads in clean areas. The practice also involves significant expenditure on postage, still the materials sent for diagnosis are received in a state unsuitable for examinations. The equipment in the District Headquarters Veterinary Hospital are found inadequate and ineffective for the proposed work. It is therefore proposed to equip all the Headquarters Veterinary Hospitals and Livestock Farms with microscopes and laboratory equipments. These laboratories will aid the Veterinary Hospitals, Veterinary Dispensaries, Minor Veterinary Dispensaries, Touring Billets, etc., in the diagnosis, treatment and control of diseases.

Three such Laboratories have been sanctioned for being opened during 1954-55 and they will be opened in the places as expeditiously as possible.

(3) *Veterinary Facilities.*—(a) *Opening of Touring Billets.*—The scheme is to open a Touring Bilet in each taluk. This scheme together with the scheme for the opening of Veterinary Institutions for each taluk will give 2 Veterinary Assistant Surgeons for each taluk. This is far short of the recommendations of the Royal Commission on Agriculture which estimated the requirements at one Veterinary Assistant Surgeon for every 25,000 heads of cattle. Originally 29 Touring Billets were required for this State, of which 2 were opened in 1951-52. The scheme was not implemented during the years 1952-53 and 1953-54. But Government have now sanctioned the opening of 7 Touring Billets during the year 1954-55; these institutions are expected to commence working by August 1954. Twenty more Touring billets will have to be opened during the remaining period of the plan to attain the target.

(b) *Opening of a Veterinary Dispensary for each taluk.*—The target originally fixed was to open 22 Veterinary Institutions in 5 years for the undivided state. After the partition of the Andhra State, the target for the residuary state was fixed at 10. The number of Veterinary Institutions opened the residuary state so far is 5, two in 1947-48; one in 1948-49 and two in 1949-50. Government have sanctioned the opening of 9 Veterinary Institutions in 1954-55.

(4) *District Livestock Farm, Malabar.*—The farm was opened in 1950 and stocking commenced in February 1951. A small herd of Murrah and Dharwar buffaloes and Scindhi cows and herd of milch goats were progressively introduced. The present stock is 126 head of cattle and 67 goats. The farm is situated in an inaccessible place in the virgin Forests.

(5) *Distribution of male breeding stock.*—The improvement of cattle in the field was encouraged by the grant of a premium for the maintenance of breeding bulls by private purpose. Although the scheme was popular in areas where the public interest, the previous scheme did not make much headway in other areas of the State. In order to remedy the defect and inserting the improvement work a free distribution of bulls was initiated with a grant from the Government of India in 1942. The scheme became very popular and hence it was included in the Post-War Reconstruction Scheme and Government sanctioned the purchase and distribution of bulls and other male stock for a period of five years from 1947-48 to 1951-52 and subsequently this scheme was included in the five-year plan, and a sum of Rs. 1 lakh was provided for the composite state for the purchase of bulls during 1951-52. Government deferred the scheme during 1952-53 and 1953-54 due to financial stringency and ordered the revival of the scheme during 1954-55 at a cost of Rs. 1.02 lakhs. One hundred and twenty-one bulls and 30 rams were purchased and distributed under the scheme during 1954-55.

During the years from 1942-43 to 1951-52, 560 bulls were purchased and distributed and they performed more than 88,000 services and as a result of it, one can see improved crossbred animals in the urban as well as rural areas of the State.

(6) *Artificial Insemination of Cattle.*—The number of bulls maintained and distributed under the various Livestock Improvement Schemes in the State were found inadequate to meet with the demands of cow population and hence the progress of work was very slow. In order to intensify the progress of work and to achieve tangible results with the maximum number of bulls available in certain selected areas, the scheme for Artificial Insemination was started at Madras as early as 1st April 1948 and subsequently, started at Coimbatore on 7th February 1950, at Ootacamund on 5th October 1951 and at Madurai on 1st February 1953. The scheme gained popularity and there is very great demand for opening more centres. The people have really appreciated the process of the scheme but due to financial stringency more number of centres could not be opened. During the period from 1st April 1948 to 31st March 1954, 27,775 cows were impregnated artificially excluding the number done in the Key Village and Key Farm centres.

*District Livestock Farm, South Kanara.*—The farm was opened in February 1950 and maintain Murrah and Dharwar breeds of buffaloes and Scindhi and Gir herd of cattle. A herd of local cows are also maintained for grading. The present stock of the cattle is 286. Poultry is also maintained at the farm.

#### *Additional State Schemes.*

1. *Key village scheme—Key village centres.*—As contemplated in the All-India Key Village Scheme of Cattle Improvement which has been approved in principle by the Planning Commission, the scheme was introduced during the end of 1952 and there are seven Key Village Centres with 28 key villages functioning in this State, for which 50 per cent of the expenditure is met by the Government of India and the remaining 50 per cent by the State Government. Two more centres with 8 key villages are proposed to be opened during 1954-55.

The number of artificial inseminations done and the natural services performed by the bulls in the above areas were 6,093 and 1,410 respectively up to 31st March 1954.

2. *Key Farm Centres in private institutions.*—In addition to the Key Village Scheme, a scheme for using private institutions as supplementary agencies for bull production, as formulated by the Government of India, is also functioning since 1953. There are six key Farm centres in Private Institutions for which 75 per cent of the recurring expenditure is borne by the Government of India and the balance of 25 per cent by the Private Institutions till 30th April 1954 and then by the State Government.

The number of artificial inseminations done and the natural services performed by the bulls in the above area were 3,321 and 1,398 respectively up to 31st March 1954.

3. *Salvage of dry cows in Madras City.*—As scheme for the salvage of dry cows in Madras was sanctioned in 1942, dry cows are maintained at the farm till they calve and then returned to the owner. The animals are sent from Madras by rail calve and then returned to the owner. The animals are sent from Madras by rail calve and then returned to the owner. The animals are sent from Madras by rail calve and then returned to the owner. The cost of transport to Thada Railway Station and thence marched to the Kancha. The cost of transport of animals from Madras to Kancha will be met from the funds collected from the owners and the cost of bringing the animals from Kancha should be borne by the party.

There were 228 cows in the farm in March 1954.

4. *District Poultry Farm, Cannanore.*—This farm is maintaining Rhode Island Reds and White Leghorns.

The strength of the farm is as follows:—

|                  | Breed.  | Cocks. | Hens. | Chicks. | Total. |
|------------------|---------|--------|-------|---------|--------|
| Rhode Island Red | .. .. . | 2      | 22    | 90      | 114    |
| White Leghorn    | .. .. . | 6      | 73    | 382     | 461    |
|                  | Total   | 8      | 95    | 472     | 575    |

*Egg production—*

|                |              |
|----------------|--------------|
| Receipts .. .. | 11,949 eggs. |
| Disposal .. .. | 11,942 ..    |

Balance on 31st March 1954. 7

**STATEMENT I.—Summary statement of development expenditure on the State—Madras.**

Rupees in round lakhs.

| Head of development.                                                                                | Provision in the plan. | 1951-52 actuals. | 1952-53 actuals. | 1953-54 revised. | Expenditure up to and of March 1954. | Budget 1954-55. |
|-----------------------------------------------------------------------------------------------------|------------------------|------------------|------------------|------------------|--------------------------------------|-----------------|
| <b>ANIMAL HUSBANDRY.</b>                                                                            |                        |                  |                  |                  |                                      |                 |
| <i>Administration.</i>                                                                              |                        |                  |                  |                  |                                      |                 |
| 1 Appointment of Deputy Director of Animal Husbandry.                                               | 1-55                   | 0-26             | 0-31             | 0-35             | 0-92                                 |                 |
| 2 Appointment of District Veterinary Officers.                                                      | 2-62                   | 0-58             | 0-63             | 0-50             | 1-71                                 |                 |
| 3 Taking over of Pudukkottai farm.                                                                  | 6-10                   | 0-28             | 0-43             | 0-68             | 1-39                                 |                 |
| <i>Education.</i>                                                                                   |                        |                  |                  |                  |                                      |                 |
| 4 Training scheme ..                                                                                | 0-09                   | 0-08             | 0-01             | ..               | 0-09                                 | ..              |
| <i>Research.</i>                                                                                    |                        |                  |                  |                  |                                      |                 |
| 5 Purchase of laboratory equipment and furniture to Veterinary Biological and Research Institute.   | 0-41                   | 0-17             | 0-12             | 0-01             | 0-30                                 | ..              |
| 6 Research in disease of sheep and goats.                                                           | 0-56                   | 0-06             | 0-06             | 0-11             | 0-23                                 | ..              |
| <i>Veterinary facilities.</i>                                                                       |                        |                  |                  |                  |                                      |                 |
| 7 Opening of a Touring Billet in each taluk.                                                        | 9-77                   | 0-83             | 1-06             | 1-25             | 3-14                                 | ..              |
| 8 Opening of Veterinary Institution for each taluk.                                                 | 1-77                   | 0-17             | 0-17             | 0-24             | 0-58                                 | ..              |
| <i>Livestock improvement.</i>                                                                       |                        |                  |                  |                  |                                      |                 |
| 9 District Livestock Farms, South Kanara and Malabar.                                               | 12-22                  | 1-97             | 1-97             | 1-54             | 5-48                                 | ..              |
| 10 Establishment of Clinical laboratories at Headquarters Veterinary Hospitals and Livestock Farms. | 2-27                   | ..               | ..               | ..               | ..                                   | ..              |
| 11 Increase in the number of sheep and goat demonstration units.                                    | 0-73                   | ..               | 0-19             | 0-18             | 0-37                                 | ..              |
| 12 Distribution of male breeding stock.                                                             | 3-30                   | 0-65             | ..               | ..               | 0-65                                 | ..              |
| 13 Artificial Insemination of cattle.                                                               | 2-87                   | 0-26             | 0-39             | 0-48             | 1-13                                 | ..              |
| 14 Scheme to maintain flock of Mandya rams.                                                         | 0-25                   | 0-06             | 0-02             | 0-03             | 0-11                                 | ..              |
|                                                                                                     | 43-51 or 44-00         | 5-37             | 5-36             | 5-37             | 16-10                                | 7-0             |

7-0 as per Appendix II of the printed budget of the State Government for the year 1954-55.

**STATEMENT II.—Expenditure on "Additional State Schemes 1953-54."**

| Schemes.                                                             | Total cost. | 1951-52 actuals. | 1952-53 actuals. | 1953-54 revised. | Expenditure up to end of March 1954. | Budget 1954-55. |
|----------------------------------------------------------------------|-------------|------------------|------------------|------------------|--------------------------------------|-----------------|
| <b>ANIMAL HUSBANDRY.</b>                                             |             |                  |                  |                  |                                      |                 |
| 1 Key Village Scheme for Livestock Improvement.                      | 8-82        | 0-29             | 0-44             | 2-01             | 2-74                                 | 1-49            |
| 2 Key Farm Centres in Private Institutions.                          | 2-54        | ..               | 0-68             | 0-62             | 1-30                                 | 1-01            |
| 3 Scheme for the control of Brucellosis.                             | 0-18        | ..               | ..               | ..               | ..                                   | 0-07            |
| 4 Starting of Stockman course.                                       | 0-47        | ..               | ..               | ..               | ..                                   | 0-10            |
| 5 Opening of statistical facilities for Animal Husbandry Department. | 0-24        | ..               | ..               | ..               | ..                                   | 0-10            |
| 6 Salvage of dry cows in Madras City.                                | 1-70        | 0-55             | 0-42             | 0-31             | 1-28                                 | 0-65            |
| 7 District Poultry Farm, Cannanore.                                  | 0-55        | 0-11             | 0-11             | 0-11             | 0-33                                 | 0-09            |
| 8 Poultry Demonstration Units in Veterinary Institutions.            | 0-21        | ..               | ..               | ..               | ..                                   | 0-05            |
| 9 Import of day old chicks from abroad.                              | 0-10        | ..               | ..               | ..               | ..                                   | 0-05            |
| 10 Grading up of village poultry.                                    | 0-06        | ..               | ..               | ..               | ..                                   | ..              |
|                                                                      | 14-87       | 0-95             | 1-65             | 3-05             | 5-65                                 | 3-6             |

TABLE I.—Statistics of mortality from contagious diseases and other causes among livestock in the Madras State during the period 1st October 1953 to 31st March 1954 (as furnished by the Collectors).

| Attacks *<br>Deaths<br>1st April to 30th Sep-<br>tember 1953.<br>1952-53 | Equines.  |        |          |          |                                          |          |               |             |                          |                 | Cattle.        |        |                                          |        |          |                |                 |               |        |               |
|--------------------------------------------------------------------------|-----------|--------|----------|----------|------------------------------------------|----------|---------------|-------------|--------------------------|-----------------|----------------|--------|------------------------------------------|--------|----------|----------------|-----------------|---------------|--------|---------------|
|                                                                          | Horses.   |        |          |          |                                          | Donkeys. |               |             |                          |                 | Buffaloes.     |        |                                          |        |          | Sheep.         |                 |               |        |               |
|                                                                          | Glanders. | Surra. | Dourine. | Anthrax. | Other contagious and parasitic diseases. | Total.   | Other causes. | Rinderpest. | Haemorrhagic septicæmia. | Foot and Mouth. | Black Quarter. | Total. | Other contagious and parasitic diseases. | Surra. | Anthrax. | Black Quarter. | Foot and Mouth. | Other causes. | Total. | Other causes. |
| ..                                                                       | ..        | ..     | ..       | ..       | ..                                       | ..       | ..            | ..          | ..                       | ..              | ..             | ..     | ..                                       | ..     | ..       | ..             | ..              | ..            | ..     | ..            |
| 1st April to 30th Sep-tember 1953.                                       | 1         | 2      | ..       | ..       | ..                                       | 1        | ..            | ..          | 842                      | 7               | 1,119          | 201    | 244                                      | 259    | 244      | 38             | 1,591           | 114           | 2,510  | 148           |
| 1952-53                                                                  | ..        | 6      | ..       | ..       | 2                                        | 8        | 3             | 1,458       | 2,228                    | 73              | 2,112          | 756    | 64                                       | 163    | 6,054    | 6,854          | 9,572           | ..            | ..     | ..            |

| Attacks *<br>Deaths<br>1st April to 30th Sep-<br>tember 1953.<br>1952-53 | Goats.                                   |        |               |          |                |                                          |        |               |         |                                          | Dogs.   |               |         |                                          |        |               |         |                                          |        |               |
|--------------------------------------------------------------------------|------------------------------------------|--------|---------------|----------|----------------|------------------------------------------|--------|---------------|---------|------------------------------------------|---------|---------------|---------|------------------------------------------|--------|---------------|---------|------------------------------------------|--------|---------------|
|                                                                          | Sheep-cont.                              |        |               |          |                | Poultry.                                 |        |               |         |                                          | Camels. |               |         |                                          |        | All animals.  |         |                                          |        |               |
|                                                                          | Other contagious and parasitic diseases. | Total. | Other causes. | Anthrax. | Black Quarter. | Other contagious and parasitic diseases. | Total. | Other causes. | Rabies. | Other contagious and parasitic diseases. | Total.  | Other causes. | Rabies. | Other contagious and parasitic diseases. | Total. | Other causes. | Rabies. | Other contagious and parasitic diseases. | Total. | Other causes. |
| ..                                                                       | ..                                       | ..     | ..            | ..       | ..             | ..                                       | ..     | ..            | ..      | ..                                       | ..      | ..            | ..      | ..                                       | ..     | ..            | ..      | ..                                       | ..     | ..            |
| 1st April to 30th Sep-tember 1953.                                       | 188                                      | 1,083  | 89            | 89       | 89             | 11                                       | 11     | 11            | 11      | 11                                       | 11      | 11            | 11      | 11                                       | 11     | 11            | 11      | 11                                       | 11     | 11            |
| 1952-53                                                                  | 1,043                                    | 3,440  | 3,542         | 426      | 426            | 10                                       | 10     | 10            | 10      | 10                                       | 10      | 10            | 10      | 10                                       | 10     | 10            | 10      | 10                                       | 10     | 10            |

| Attacks *<br>Deaths<br>1st April to 30th Sep-<br>tember 1953.<br>1952-53 | Poultry.                                 |        |               |          |                |                                          |        |               |         |                                          | Camels. |               |         |                                          |        |               |         |                                          |        |               |
|--------------------------------------------------------------------------|------------------------------------------|--------|---------------|----------|----------------|------------------------------------------|--------|---------------|---------|------------------------------------------|---------|---------------|---------|------------------------------------------|--------|---------------|---------|------------------------------------------|--------|---------------|
|                                                                          | Hens.                                    |        |               |          |                | Ducks.                                   |        |               |         |                                          | Goats.  |               |         |                                          |        | Sheep.        |         |                                          |        |               |
|                                                                          | Other contagious and parasitic diseases. | Total. | Other causes. | Anthrax. | Black Quarter. | Other contagious and parasitic diseases. | Total. | Other causes. | Rabies. | Other contagious and parasitic diseases. | Total.  | Other causes. | Rabies. | Other contagious and parasitic diseases. | Total. | Other causes. | Rabies. | Other contagious and parasitic diseases. | Total. | Other causes. |
| ..                                                                       | ..                                       | ..     | ..            | ..       | ..             | ..                                       | ..     | ..            | ..      | ..                                       | ..      | ..            | ..      | ..                                       | ..     | ..            | ..      | ..                                       | ..     | ..            |
| 1st April to 30th Sep-tember 1953.                                       | 188                                      | 1,083  | 89            | 89       | 89             | 11                                       | 11     | 11            | 11      | 11                                       | 11      | 11            | 11      | 11                                       | 11     | 11            | 11      | 11                                       | 11     | 11            |
| 1952-53                                                                  | 1,043                                    | 3,440  | 3,542         | 426      | 426            | 10                                       | 10     | 10            | 10      | 10                                       | 10      | 10            | 10      | 10                                       | 10     | 10            | 10      | 10                                       | 10     | 10            |

NOTE.—Figures furnished in the table relate only to six months of the Residuary State.

\* Separate figures are not available for cattle and buffaloes under attacks. The attacks under Bovines are furnished below :—  
Anthrax .. 246  
Foot and mouth .. 2,539  
Surra .. 293

TABLE II.—Summary of results of preventive inoculations in the Madras State during the period 1st October 1953 to 31st March 1954.

| Serial number and name of the disease against which inoculation was undertaken. | Method of inoculation. | Source of product.                                      | (1) | (2)                                                  | (3)                                                         | Number of out-breaks in which inoculations were undertaken. | Number of villages affected in these out-breaks. | (5) | (6) | (7) | (8) | (9) | Number of animals which died un inoculated in the course of outbreaks. |          |         | Number of animals inoculated. |          |         | Number of animals which died of the disease. |          |         |
|---------------------------------------------------------------------------------|------------------------|---------------------------------------------------------|-----|------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|--------------------------------------------------|-----|-----|-----|-----|-----|------------------------------------------------------------------------|----------|---------|-------------------------------|----------|---------|----------------------------------------------|----------|---------|
|                                                                                 |                        |                                                         |     |                                                      |                                                             |                                                             |                                                  |     |     |     |     |     | Bovines.                                                               | Equines. | Others. | Bovines.                      | Equines. | Others. | Bovines.                                     | Equines. | Others. |
| 1 Rinderpest ..                                                                 | ..                     | Serum simultaneous with goat virus (in outbreak areas). | ..  | Serum simultaneous with goat virus (in clean areas). | Veterinary Biological and Research Institute, Madras State. | ..                                                          | ..                                               | ..  | ..  | ..  | ..  | ..  | ..                                                                     | ..       | ..      | ..                            | ..       | ..      | ..                                           | ..       | ..      |
|                                                                                 |                        | Serum simultaneous with goat virus (in clean areas).    | 2   | 1                                                    | 471                                                         | 1                                                           | ..                                               | ..  | ..  | ..  | ..  | ..  | ..                                                                     | ..       | ..      | ..                            | ..       | ..      | ..                                           | ..       | ..      |
|                                                                                 |                        | Serum alone (in outbreak areas).                        | 2   | 3                                                    | 2,600                                                       | 16                                                          | ..                                               | ..  | ..  | ..  | ..  | ..  | ..                                                                     | ..       | ..      | ..                            | ..       | ..      | ..                                           | ..       | ..      |
|                                                                                 |                        | Freeze dried vaccine (in affected areas).               | ..  | ..                                                   | ..                                                          | ..                                                          | ..                                               | ..  | ..  | ..  | ..  | ..  | ..                                                                     | ..       | ..      | ..                            | ..       | ..      | ..                                           | ..       | ..      |
|                                                                                 |                        | Freeze dried vaccine (in free areas).                   | ..  | ..                                                   | ..                                                          | ..                                                          | ..                                               | ..  | ..  | ..  | ..  | ..  | ..                                                                     | ..       | ..      | ..                            | ..       | ..      | ..                                           | ..       | ..      |
| Total ..                                                                        | ..                     | ..                                                      | 8   | 8                                                    | 4,202                                                       | 17                                                          | ..                                               | ..  | ..  | ..  | ..  | ..  | ..                                                                     | ..       | ..      | ..                            | ..       | ..      | ..                                           | ..       | ..      |
| 2 Hemorrhagic septicaemia.                                                      | ..                     | Vaccine alone method.                                   | 202 | 202                                                  | 117,782                                                     | 970                                                         | ..                                               | ..  | ..  | ..  | ..  | ..  | ..                                                                     | ..       | ..      | ..                            | ..       | ..      | ..                                           | ..       | ..      |
|                                                                                 | ..                     | Vaccine alone method (in clean areas).                  | ..  | ..                                                   | ..                                                          | ..                                                          | ..                                               | ..  | ..  | ..  | ..  | ..  | ..                                                                     | ..       | ..      | ..                            | ..       | ..      | ..                                           | ..       | ..      |
| Total ..                                                                        | ..                     | ..                                                      | 202 | 202                                                  | 117,782                                                     | 970                                                         | ..                                               | ..  | ..  | ..  | ..  | ..  | ..                                                                     | ..       | ..      | ..                            | ..       | ..      | ..                                           | ..       | ..      |

| 3 Black-Quarter      | .. | Vaccine alone method (affected area). | 259   | 260   | 110,087   | 1,085  | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
|----------------------|----|---------------------------------------|-------|-------|-----------|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
|                      | .. | Vaccine alone method (free area).     | ..    | ..    | ..        | ..     | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 4 Anthrax ..         | .. | Serum alone ..                        | 1     | 1     | 354       | 1      | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
|                      | .. | Spore vaccine (affected area).        | 44    | 44    | 35,024    | 158    | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
|                      | .. | Vaccine (clean area).                 | ..    | ..    | ..        | ..     | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 5 Sheep-pox ..       | .. | Affected area ..                      | 56    | 59    | 27,961    | 469    | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
|                      | .. | Clean area ..                         | ..    | ..    | ..        | ..     | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 6 Fowl-pox ..        | .. | Affected area ..                      | 16    | 11    | 1,817     | ..     | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
|                      | .. | Clean area ..                         | ..    | ..    | ..        | ..     | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 7 Ranikhet ..        | .. | Affected area ..                      | 16    | 16    | 4,200     | ..     | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
|                      | .. | Clean area ..                         | ..    | ..    | ..        | ..     | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Total (items 3 to 7) | .. | ..                                    | 392   | 391   | 179,443   | 1,713  | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Grand total          | .. | ..                                    | 602   | 601   | 301,427   | 2,700  | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 1952-53 ..           | .. | ..                                    | 2,455 | 2,506 | 1,783,319 | 10,271 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 1951-52 ..           | .. | ..                                    | 3,148 | 3,178 | 1,193,129 | 20,237 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |

NOTE.—Figures furnished in the table relate only to the Residuary State for six months.

TABLE III.—Statement showing the number of animals treated and castrated at the Veterinary Hospitals and Dispensaries in the State of Madras during the period 1st October 1953 to 31st March 1954.

| Year.                                                 | Number of Veterinary Institutions. |     |        | Number of Veterinary Assistant Surgeons employed. |       |        | Number of in-patients treated. |       |        |         | Number of out-patients treated. |       |        |      | Castrations performed. |        |      |  |
|-------------------------------------------------------|------------------------------------|-----|--------|---------------------------------------------------|-------|--------|--------------------------------|-------|--------|---------|---------------------------------|-------|--------|------|------------------------|--------|------|--|
|                                                       | (1)                                | (2) | (3)    | (4)                                               | (5)   | (6)    | (7)                            | (8)   | (9)    | (10)    | (11)                            | (12)  | (13)   | (14) | (15)                   | (16)   | (17) |  |
| 1953-54—<br>(1st October 1953 to<br>31st March 1954). | 87                                 | 94  | 3,231  | 182                                               | 521   | 3,934  | 79,521                         | 2,345 | 34,817 | 116,683 | 120,617                         | 268   | 15,509 | 105  | 4,601                  | 20,215 |      |  |
| 1953-54—<br>(1st April to 30th<br>September 1953).    | 147                                | 155 | 5,223  | 351                                               | 607   | 6,181  | 113,878                        | 6,606 | 45,558 | 166,042 | 172,223                         | 1,032 | 20,225 | 242  | 7,868                  | 28,335 |      |  |
| 1952-53 .. ..                                         | 147                                | 152 | 12,092 | 553                                               | 1,228 | 13,873 | 237,646                        | 7,843 | 82,565 | 328,054 | 341,907                         | 2,816 | 46,375 | 627  | 13,209                 | 60,211 |      |  |

Note.—Figures furnished in the table relate only to the Residuary State for six months.

NOTE.—Figures furnished in the table relate only to the Residuary State for six months.

TABLE IV.—Statement showing the number of animals treated and castrated by Veterinary Assistant Surgeons on tour during the period 1st October 1953 to 31st March 1954.

| Year.                                                 | Number of villages visited by the Veterinary Assistant Surgeons. |        |        | Castrations performed. |          |         | Treated for contagious diseases. |          |          | Treated for non-contagious diseases. |         |       | Total number of castrations performed and cases treated. |         |         |
|-------------------------------------------------------|------------------------------------------------------------------|--------|--------|------------------------|----------|---------|----------------------------------|----------|----------|--------------------------------------|---------|-------|----------------------------------------------------------|---------|---------|
|                                                       | (1)                                                              | (2)    | (3)    | Bovines.               | Equines. | Others. | Total.                           | Bovines. | Equines. | Others.                              | Total.  |       |                                                          |         |         |
| 1953-54—<br>(1st October 1953 to<br>31st March 1954.) | 86                                                               | 6,739  | 22,914 | 13                     | 2,433    | 25,360  | 2,063                            | 1        | 512      | 2,576                                | 54,336  | 318   | 13,892                                                   | 68,546  | 96,482  |
| 1st April to 30th Sep-<br>tember 1953.                | 182                                                              | 11,627 | 33,430 | 169                    | 4,490    | 38,089  | 9,082                            | 458      | 1,353    | 10,893                               | 100,436 | 967   | 23,771                                                   | 125,174 | 174,156 |
| 1952-53 .. ..                                         | 179                                                              | 22,657 | 49,281 | 19                     | 5,859    | 55,159  | 7,483                            | 17       | 1,966    | 9,466                                | 143,111 | 1,494 | 21,034                                                   | 165,639 | 230,264 |

NOTE.—Figures furnished in the table relate only to the Residuary State for six months.

NOTE.—Figures furnished in the table relate only to the Residuary State for six months.

TABLE V (a).—Statement showing the number of approved bulls at stud in the State of Madras during the period from 1st October 1953 to 31st March 1954.

| Districts.                                 | Present on 1st October 1953. |     |     |         |     |     | Obtained during the period. |       |       |         |      |      | Average price. |      |      | Casualties, transfers removals, etc., during the period. |      |      |
|--------------------------------------------|------------------------------|-----|-----|---------|-----|-----|-----------------------------|-------|-------|---------|------|------|----------------|------|------|----------------------------------------------------------|------|------|
|                                            | Number.                      |     |     | Number. |     |     | Number.                     |       |       | Number. |      |      | Number.        |      |      | Number.                                                  |      |      |
|                                            | G                            | LB  | O   | G       | LB  | O   | G                           | LB    | O     | G       | LB   | O    | G              | LB   | O    | G                                                        | LB   | O    |
| (1)                                        | (2)                          | (3) | (4) | (5)     | (6) | (7) | (8)                         | (9)   | (10)  | (11)    | (12) | (13) | (14)           | (15) | (16) | (17)                                                     | (18) | (19) |
| 1 Madras ..                                | 14                           | ..  | 5   | 1       | ..  | ..  | ..                          | ..    | ..    | ..      | ..   | ..   | ..             | ..   | ..   | ..                                                       | ..   | ..   |
| 2 Chingleput ..                            | 6                            | ..  | 6   | 2       | ..  | 3   | ..                          | ..    | ..    | ..      | ..   | ..   | ..             | ..   | ..   | ..                                                       | ..   | ..   |
| 3 North Arcot ..                           | 10                           | ..  | 7   | 1       | ..  | ..  | ..                          | ..    | ..    | ..      | ..   | ..   | ..             | ..   | ..   | ..                                                       | ..   | ..   |
| 4 South Arcot ..                           | 7                            | 5   | 2   | ..      | ..  | ..  | ..                          | ..    | ..    | ..      | ..   | ..   | ..             | ..   | ..   | ..                                                       | ..   | ..   |
| 5 Tanjore ..                               | 11                           | 10  | 52  | ..      | ..  | 19  | ..                          | ..    | 1,000 | ..      | ..   | ..   | ..             | ..   | ..   | ..                                                       | ..   | ..   |
| 6 Tiruchirappalli ..                       | 26                           | 5   | 29  | ..      | ..  | 5   | ..                          | ..    | 400   | ..      | ..   | ..   | ..             | ..   | ..   | ..                                                       | ..   | ..   |
| 7 Madurai ..                               | 8                            | 7   | 50  | 2       | ..  | 2   | 800                         | ..    | 600   | ..      | ..   | ..   | ..             | ..   | ..   | ..                                                       | ..   | ..   |
| 8 Ramanathapuram ..                        | 15                           | 2   | 2   | ..      | ..  | ..  | ..                          | ..    | ..    | ..      | ..   | ..   | ..             | ..   | ..   | ..                                                       | ..   | ..   |
| 9 Tirunelveli ..                           | 22                           | ..  | 9   | ..      | ..  | ..  | ..                          | ..    | ..    | ..      | ..   | ..   | ..             | ..   | ..   | ..                                                       | ..   | ..   |
| 10 Coimbatore ..                           | 64                           | 182 | 153 | 4       | 2   | 40  | 1,500                       | 1,150 | 1,250 | 6       | 7    | 31   | ..             | ..   | ..   | ..                                                       | ..   | ..   |
| 11 Nilgiris ..                             | 11                           | 1   | 26  | 3       | 9   | 3   | ..                          | ..    | ..    | 3       | 1    | 7    | ..             | ..   | ..   | ..                                                       | ..   | ..   |
| 12 Salem ..                                | ..                           | ..  | ..  | ..      | ..  | ..  | ..                          | ..    | ..    | ..      | ..   | ..   | ..             | ..   | ..   | ..                                                       | ..   | ..   |
| 13 South Kanara ..                         | 38                           | ..  | 16  | 3       | ..  | 6   | ..                          | ..    | ..    | 7       | ..   | ..   | ..             | ..   | ..   | ..                                                       | ..   | ..   |
| 14 Malabar ..                              | 37                           | ..  | 6   | 2       | ..  | 2   | ..                          | ..    | ..    | 7       | ..   | 1    | ..             | ..   | ..   | ..                                                       | ..   | ..   |
| Total 1st October 1953 to 31st March 1954. | 269                          | 212 | 363 | 18      | 11  | 80  | ..                          | ..    | ..    | 33      | 13   | 60   | ..             | ..   | ..   | ..                                                       | ..   | ..   |
| 1952-53 ..                                 | 495                          | 234 | 604 | 94      | 86  | 182 | ..                          | ..    | ..    | 111     | 80   | 222  | ..             | ..   | ..   | ..                                                       | ..   | ..   |
| 1951-52 ..                                 | 329                          | 245 | 704 | 188     | 51  | 128 | ..                          | ..    | ..    | 27      | 59   | 229  | ..             | ..   | ..   | ..                                                       | ..   | ..   |

## ADMINISTRATION REPORT OF THE

## MADRAS ANIMAL HUSBANDRY DEPARTMENT

|                                            | Number of approved bulls at stud.   |      |      |                                                    |          |      | Population of cows over three years according to census. |           |        | Number of bulls.           |                        |                  | Number of cows covered during the period. |                        |                                           |
|--------------------------------------------|-------------------------------------|------|------|----------------------------------------------------|----------|------|----------------------------------------------------------|-----------|--------|----------------------------|------------------------|------------------|-------------------------------------------|------------------------|-------------------------------------------|
|                                            | Balance on hand on 31st March 1954. |      |      | Net cost for issues and maintenance of stud bulls. |          |      | Population of cows over three years according to census. |           |        | Number of bulls.           |                        |                  | Number of cows covered during the period. |                        |                                           |
|                                            | G                                   | LB   | O    | G                                                  | LB       | O    | G                                                        | LB        | O      | Required to be maintained. | Short of requirements. | Number of bulls. | Required to be maintained.                | Short of requirements. | Number of cows covered during the period. |
|                                            | (14)                                | (15) | (16) | (17)                                               | (18)     | (19) | (20)                                                     | (21)      | (22)   | (23)                       | (24)                   | (25)             | (26)                                      | (27)                   | (28)                                      |
| 1 Madras ..                                | 15                                  | ..   | 5    | 20                                                 | 1,803    | 0    | 0                                                        | 6,667     | 66     | 46                         | 402                    | ..               | ..                                        | ..                     | ..                                        |
| 2 Chingleput ..                            | 8                                   | ..   | 9    | 17                                                 | 1,210    | 14   | 0                                                        | 213,279   | 2,133  | 2,116                      | 313                    | ..               | ..                                        | ..                     | ..                                        |
| 3 North Arcot ..                           | 10                                  | ..   | 5    | 15                                                 | 1,350    | 0    | 0                                                        | 311,474   | 3,115  | 3,099                      | 469                    | ..               | ..                                        | ..                     | ..                                        |
| 4 South Arcot ..                           | 7                                   | ..   | 2    | 13                                                 | 1,129    | 7    | 8                                                        | 342,904   | 3,429  | 3,416                      | 373                    | ..               | ..                                        | ..                     | ..                                        |
| 5 Tanjore ..                               | 10                                  | 8    | 60   | 78                                                 | 3,195    | 0    | 0                                                        | 320,000   | 3,200  | 3,122                      | 3,780                  | ..               | ..                                        | ..                     | ..                                        |
| 6 Tiruchirappalli ..                       | 22                                  | 3    | 32   | 57                                                 | 12,041   | 0    | 0                                                        | 385,510   | 3,855  | 3,798                      | 1,401                  | ..               | ..                                        | ..                     | ..                                        |
| 7 Madurai ..                               | 10                                  | 7    | 47   | 64                                                 | 7,917    | 5    | 3                                                        | 273,584   | 2,736  | 2,672                      | 1,771                  | ..               | ..                                        | ..                     | ..                                        |
| 8 Ramanathapuram ..                        | 15                                  | 2    | 2    | 19                                                 | 243      | 5    | 5                                                        | 224,156   | 2,241  | 2,222                      | 301                    | ..               | ..                                        | ..                     | ..                                        |
| 9 Tirunelveli ..                           | 18                                  | ..   | 8    | 26                                                 | 1,732    | 4    | 0                                                        | 148,794   | 1,488  | 1,462                      | 800                    | ..               | ..                                        | ..                     | ..                                        |
| 10 Coimbatore ..                           | 62                                  | 177  | 162  | 401                                                | 22,201   | 11   | 0                                                        | 326,965   | 3,269  | 2,884                      | 11,267                 | ..               | ..                                        | ..                     | ..                                        |
| 11 Nilgiris ..                             | 11                                  | 9    | 22   | 42                                                 | 5,517    | 4    | 6                                                        | 671,792   | 6,718  | 6,680                      | 876                    | ..               | ..                                        | ..                     | ..                                        |
| 12 Salem ..                                | ..                                  | ..   | ..   | ..                                                 | ..       | ..   | ..                                                       | ..        | ..     | ..                         | ..                     | ..               | ..                                        | ..                     | ..                                        |
| 13 South Kanara ..                         | 34                                  | ..   | 22   | 56                                                 | 2,200    | 0    | 0                                                        | 309,832   | 3,098  | 3,043                      | 1,922                  | ..               | ..                                        | ..                     | ..                                        |
| 14 Malabar ..                              | 32                                  | ..   | 7    | 39                                                 | 4,109    | 2    | 7                                                        | 365,222   | 3,652  | 3,612                      | 966                    | ..               | ..                                        | ..                     | ..                                        |
| Total 1st October 1953 to 31st March 1954. | 254                                 | 210  | 383  | 847                                                | 64,740   | 6    | 5                                                        | 3,900,179 | 39,000 | 38,172                     | 24,641                 | ..               | ..                                        | ..                     | ..                                        |
| 1952-53 ..                                 | 478                                 | 240  | 564  | 1,282                                              | 3,12,098 | 0    | 0                                                        | 6,550,682 | 65,507 | 64,225                     | 75,205                 | ..               | ..                                        | ..                     | ..                                        |
| 1951-52 ..                                 | 495                                 | 234  | 604  | 1,333                                              | 373,084  | 0    | 0                                                        | 5,518,751 | 50,599 | 49,631                     | 69,976                 | ..               | ..                                        | ..                     | ..                                        |

NOTE.—The figures represent only for 13 districts as against 25 of the previous years and also for six months in 1953-54.

G=Government. LB=Local bodies. O=Others. T=Total.

TABLE V (b).—Statement showing the number of approved buffalo bulls at stud in the State of Madras during the period from 1st October 1953 to 31st March 1954.

| Districts.                           | Present on 1st October 1953. |     |     |                |     |     | Obtained during the period. |     |       |                |      |      | Casualties, transfers removals, etc., during the period. |    |    |
|--------------------------------------|------------------------------|-----|-----|----------------|-----|-----|-----------------------------|-----|-------|----------------|------|------|----------------------------------------------------------|----|----|
|                                      | Number.                      |     |     | Average price. |     |     | Number.                     |     |       | Average price. |      |      | Number.                                                  |    |    |
|                                      | G                            | LB  | O   | G              | LB  | O   | G                           | LB  | O     | G              | LB   | O    | G                                                        | LB | O  |
| (1)                                  | (2)                          | (3) | (4) | (5)            | (6) | (7) | (8)                         | (9) | (10)  | (11)           | (12) | (13) |                                                          |    |    |
| 1 Madras ..                          | 2                            | ..  | 1   | ..             | ..  | ..  | ..                          | ..  | ..    | ..             | ..   | ..   | ..                                                       | .. | .. |
| 2 Chingleput ..                      | ..                           | ..  | 1   | ..             | ..  | ..  | ..                          | ..  | ..    | ..             | ..   | ..   | ..                                                       | .. | .. |
| 3 North Arcot ..                     | 5                            | ..  | 1   | ..             | ..  | ..  | ..                          | ..  | ..    | ..             | ..   | ..   | ..                                                       | .. | .. |
| 4 South Arcot ..                     | 1                            | ..  | 1   | 1              | ..  | ..  | ..                          | ..  | ..    | ..             | ..   | ..   | 1                                                        | .. | .. |
| 5 Tanjore ..                         | ..                           | ..  | 10  | ..             | ..  | ..  | ..                          | ..  | ..    | ..             | ..   | ..   | ..                                                       | .. | .. |
| 6 Tiruchirappalli ..                 | 6                            | ..  | 13  | 4              | ..  | 3   | ..                          | ..  | 1,200 | ..             | ..   | ..   | 2                                                        | .. | .. |
| 7 Madurai ..                         | 6                            | ..  | 6   | 1              | ..  | 1   | 800                         | ..  | 400   | ..             | ..   | ..   | 1                                                        | .. | .. |
| 8 Ramanathapuram ..                  | 5                            | ..  | ..  | ..             | ..  | ..  | ..                          | ..  | ..    | ..             | ..   | ..   | 1                                                        | .. | .. |
| 9 Tirunelveli ..                     | 8                            | ..  | 5   | ..             | ..  | 3   | ..                          | ..  | ..    | ..             | ..   | ..   | 3                                                        | .. | 1  |
| 10 Coimbatore ..                     | ..                           | ..  | ..  | ..             | ..  | ..  | ..                          | ..  | ..    | ..             | ..   | ..   | ..                                                       | .. | .. |
| 11 Nilgiris ..                       | 5                            | ..  | 13  | ..             | ..  | 2   | 800                         | ..  | 500   | 1              | ..   | ..   | 1                                                        | .. | 4  |
| 12 Salem ..                          | 1                            | ..  | 1   | ..             | ..  | 1   | ..                          | ..  | ..    | 1              | ..   | ..   | 1                                                        | .. | .. |
| 13 South Kanara ..                   | 4                            | ..  | 6   | 1              | ..  | 1   | ..                          | ..  | ..    | 1              | ..   | ..   | 1                                                        | .. | .. |
| 14 Malabar ..                        | 5                            | ..  | 1   | 1              | ..  | ..  | ..                          | ..  | ..    | ..             | ..   | ..   | ..                                                       | .. | .. |
| 1st October 1953 to 31st March 1954. | 48                           | ..  | 59  | 8              | ..  | 12  | ..                          | ..  | ..    | 11             | ..   | ..   | ..                                                       | .. | 5  |
| 1952-53 ..                           | 139                          | ..  | 215 | 35             | 1   | 67  | ..                          | ..  | ..    | 33             | ..   | ..   | ..                                                       | .. | 87 |
| 1951-52 ..                           | 86                           | 1   | 226 | 65             | ..  | 45  | ..                          | ..  | ..    | 12             | 1    | ..   | ..                                                       | .. | 57 |

## Number of approved bulls at stud.

Balance on hand on 31st March 1954.

|                                      | G.   | LB.  | O.   | Total. |
|--------------------------------------|------|------|------|--------|
|                                      | (14) | (15) | (16) | (17)   |
| 1 Madras ..                          | 2    | ..   | 1    | 3      |
| 2 Chingleput ..                      | ..   | ..   | 1    | 1      |
| 3 North Arcot ..                     | 5    | ..   | 1    | 6      |
| 4 South Arcot ..                     | 1    | ..   | 1    | 2      |
| 5 Tanjore ..                         | ..   | ..   | 13   | 13     |
| 6 Tiruchirappalli ..                 | 8    | ..   | 14   | 22     |
| 7 Madurai ..                         | 6    | ..   | 7    | 13     |
| 8 Ramanathapuram ..                  | 4    | ..   | ..   | 4      |
| 9 Tirunelveli ..                     | 5    | ..   | 7    | 12     |
| 10 Coimbatore ..                     | 4    | ..   | 11   | 15     |
| 11 Nilgiris ..                       | ..   | ..   | 2    | 2      |
| 12 Salem ..                          | 4    | ..   | 7    | 11     |
| 13 South Kanara ..                   | ..   | ..   | ..   | ..     |
| 14 Malabar ..                        | 6    | ..   | 1    | 7      |
| 1st October 1953 to 31st March 1954. | 45   | ..   | 66   | 111    |
| 1952-53 ..                           | 141  | 1    | 195  | 337    |
| 1951-52 ..                           | 139  | ..   | 215  | 354    |

NOTE.—The figures represent only for 13 districts as against 25 of the previous years and also only for six months in 1953-54.  
G = Government. LB = Local bodies. O = Others.

|                                      | Number of bulls.           |                        | Population of cows over three years according to census. |                        | Net cost for issues and maintenance of stud bulls. |                        | Population of cows over three years according to census. |                        | Number of bulls.           |                        | Number of cows covered during the period. |                        |
|--------------------------------------|----------------------------|------------------------|----------------------------------------------------------|------------------------|----------------------------------------------------|------------------------|----------------------------------------------------------|------------------------|----------------------------|------------------------|-------------------------------------------|------------------------|
|                                      | Required to be maintained. | Short of requirements. | Required to be maintained.                               | Short of requirements. | Required to be maintained.                         | Short of requirements. | Required to be maintained.                               | Short of requirements. | Required to be maintained. | Short of requirements. | Required to be maintained.                | Short of requirements. |
|                                      | (20)                       | (21)                   | (22)                                                     | (23)                   | (24)                                               | (25)                   | (26)                                                     | (27)                   | (28)                       | (29)                   | (30)                                      | (31)                   |
| 1 Madras ..                          | 75                         | 72                     | 7,506                                                    | 200                    | 0                                                  | 0                      | 7,506                                                    | 200                    | 0                          | 0                      | 86                                        | 31                     |
| 2 Chingleput ..                      | 975                        | 975                    | 97,525                                                   | 211                    | 0                                                  | 0                      | 97,525                                                   | 211                    | 0                          | 0                      | 179                                       | 103                    |
| 3 North Arcot ..                     | 798                        | 793                    | 79,778                                                   | 1,349                  | 11                                                 | 8                      | 79,778                                                   | 1,349                  | 11                         | 8                      | 635                                       | 485                    |
| 4 South Arcot ..                     | 649                        | 647                    | 64,984                                                   | ..                     | ..                                                 | ..                     | 64,984                                                   | ..                     | ..                         | ..                     | 186                                       | 298                    |
| 5 Tanjore ..                         | 1,280                      | 1,267                  | 128,000                                                  | 220                    | 0                                                  | 0                      | 128,000                                                  | 220                    | 0                          | 0                      | 57                                        | 462                    |
| 6 Tiruchirappalli ..                 | 1,850                      | 1,838                  | 185,025                                                  | 9,480                  | 0                                                  | 0                      | 185,025                                                  | 9,480                  | 0                          | 0                      | 268                                       | 3,487                  |
| 7 Madurai ..                         | 850                        | 837                    | 84,893                                                   | 880                    | 0                                                  | 0                      | 84,893                                                   | 880                    | 0                          | 0                      | ..                                        | ..                     |
| 8 Ramanathapuram ..                  | 764                        | 760                    | 76,419                                                   | ..                     | ..                                                 | ..                     | 76,419                                                   | ..                     | ..                         | ..                     | ..                                        | ..                     |
| 9 Tirunelveli ..                     | 903                        | 890                    | 90,318                                                   | 850                    | 8                                                  | 0                      | 90,318                                                   | 850                    | 8                          | 0                      | ..                                        | ..                     |
| 10 Coimbatore ..                     | 384                        | 380                    | 38,414                                                   | 220                    | 0                                                  | 0                      | 38,414                                                   | 220                    | 0                          | 0                      | ..                                        | ..                     |
| 11 Nilgiris ..                       | 1,163                      | 1,161                  | 116,267                                                  | ..                     | ..                                                 | ..                     | 116,267                                                  | ..                     | ..                         | ..                     | ..                                        | ..                     |
| 12 Salem ..                          | 693                        | 682                    | 69,396                                                   | 440                    | 0                                                  | 0                      | 69,396                                                   | 440                    | 0                          | 0                      | ..                                        | ..                     |
| 13 South Kanara ..                   | 649                        | 646                    | 64,952                                                   | 704                    | 13                                                 | 0                      | 64,952                                                   | 704                    | 13                         | 0                      | ..                                        | ..                     |
| 14 Malabar ..                        | ..                         | ..                     | ..                                                       | ..                     | ..                                                 | ..                     | ..                                                       | ..                     | ..                         | ..                     | ..                                        | ..                     |
| 1st October 1953 to 31st March 1954. | 11,033                     | 10,938                 | 1,103,497                                                | 14,556                 | 0                                                  | 8                      | 1,103,497                                                | 14,556                 | 0                          | 8                      | 3,487                                     | 24,537                 |
| 1952-53 ..                           | 36,186                     | 35,849                 | 3,618,638                                                | ..                     | ..                                                 | ..                     | 3,618,638                                                | ..                     | ..                         | ..                     | 24,537                                    | 21,158                 |
| 1951-52 ..                           | 29,499                     | 29,373                 | 2,835,722                                                | ..                     | ..                                                 | ..                     | 2,835,722                                                | ..                     | ..                         | ..                     | 21,158                                    | ..                     |

[illegible]

| (1)                                                      | G. LB. O. |     |     | G. LB. O. |     |     | G. LB. O. |     |      | G. LB. O. |      |      | G. LB. O. |      |        | G. LB. O. |        |  | Horses, Donkeys, Horses, Donkeys. |
|----------------------------------------------------------|-----------|-----|-----|-----------|-----|-----|-----------|-----|------|-----------|------|------|-----------|------|--------|-----------|--------|--|-----------------------------------|
|                                                          | (2)       | (3) | (4) | (5)       | (6) | (7) | (8)       | (9) | (10) | (11)      | (12) | (13) | (14)      | (15) | (16)   | (17)      |        |  |                                   |
| Coimbatore West ..                                       | 2         | ..  | ..  | ..        | ..  | ..  | 1         | ..  | ..   | 1         | ..   | ..   | 21        | ..   | ..     | ..        | ..     |  |                                   |
| Coimbatore East ..                                       | 3         | ..  | ..  | ..        | ..  | ..  | 1         | ..  | ..   | 2         | ..   | ..   | 45        | ..   | ..     | ..        | ..     |  |                                   |
| Hosur Cattle Farm ..                                     | 1         | ..  | ..  | 1         | ..  | ..  | ..        | ..  | ..   | 2         | ..   | ..   | 15        | ..   | ..     | ..        | ..     |  |                                   |
| Total ..                                                 | 6         | ..  | ..  | 1         | ..  | ..  | 2*        | ..  | ..   | 5         | ..   | ..   | 71        | ..   | 14,766 | 71,595    | 71,595 |  |                                   |
| 1953-54 (1st April<br>1953 to 30th Septem-<br>ber 1953). | 7         | ..  | ..  | ..        | ..  | ..  | 1         | ..  | ..   | 6         | ..   | ..   | 68        | ..   | 14,766 | 71,595    | 71,595 |  |                                   |
| 1952-53 ..                                               | 5         | ..  | ..  | 3         | ..  | ..  | 1         | ..  | ..   | 7         | ..   | ..   | 114       | ..   | 14,766 | 71,595    | 71,595 |  |                                   |

G = Government.      LB = Local Bodies.      O = Others.

\* Auctioned due to old age. Two colts and one filly were born to the stallion at Veterinary Hospital, Tiruppur during the period.

Year—  
1st October  
1953 to 31st  
March 1954

|                                         |        |                                                           |               |           |
|-----------------------------------------|--------|-----------------------------------------------------------|---------------|-----------|
| 1 Total number of shows and fairs .. .. | 109    | 19 Average price .. ..                                    | ..            | ..        |
| Total number of stock present—          |        | 20 Ponies .. ..                                           | ..            | ..        |
| 2 Bulls .. ..                           | 6,466  | 21 Average price .. ..                                    | ..            | ..        |
| 3 Bullocks .. ..                        | 88,214 | 22 Other animals .. ..                                    | ..            | ..        |
| 4 Cows .. ..                            | 22,556 | 23 Average price .. ..                                    | ..            | ..        |
| 5 Young stock .. ..                     | 22,544 |                                                           |               |           |
| 6 Buffaloes .. ..                       | 4,579  | Prize money awarded—                                      |               | RS. A. P. |
| 7 Camels .. ..                          | ..     | 24 Amount realised in fees.                               | 1,925         | 7 6       |
| 8 Ponies .. ..                          | 63     | 25 Total number of animals that competed for prizes .. .. | 10,508        |           |
| 9 Other animals .. ..                   | 3,580  |                                                           |               |           |
| Total number of animals sold—           |        |                                                           |               | RS. A. P. |
| 10 Bulls .. ..                          | 2,401  | 26 From Provincial funds                                  | 10,833        | 6 0       |
| 11 Average price .. ..                  | ..     | 27 From Local funds .. ..                                 | 2,180         | 8 0       |
| 12 Bullocks .. ..                       | 14,821 | 28 Other sources .. ..                                    | 10,166        | 6 3       |
| 13 Average price .. ..                  | ..     | 29 Total .. ..                                            | 23,180        | 4 3       |
| 14 Cows .. ..                           | 688    | 30 Amount actually awarded .. ..                          | 12,374        | 7 3       |
| 15 Average price .. ..                  | ..     | 31 Number of medals, prizes, etc., awarded.               | Prizes 909.   |           |
| 16 Buffaloes .. ..                      | 18,503 |                                                           | Cash Rs. 650. |           |
| 17 Average price .. ..                  | 30     |                                                           |               |           |
| 18 Young stock .. ..                    |        |                                                           |               |           |

| Number of recognised slaughter-houses for |   | Number of animals slaughtered. |
|-------------------------------------------|---|--------------------------------|
| 1                                         | 2 | 3                              |

State of Madras during the year

| Year.       | Number of recognised slaughter-houses for |                  |                  |                  |                  |                  |                  |                  | Number of unrec-<br>ognised slaughter-<br>houses. | Number of animals slaughtered. |                      |         |               |                |
|-------------|-------------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|---------------------------------------------------|--------------------------------|----------------------|---------|---------------|----------------|
|             | Cattle and Buffaloes.                     |                  | Sheep and goats. |                  | Pigs.            |                  | Others.          |                  |                                                   | Cows.                          | Bulls and Buffaloes. | Calves. | He-Buffaloes. | She-Buffaloes. |
|             | Govern-<br>ment.                          | Local<br>bodies. | Govern-<br>ment. | Local<br>bodies. | Govern-<br>ment. | Local<br>bodies. | Govern-<br>ment. | Local<br>bodies. |                                                   |                                |                      |         |               |                |
|             |                                           |                  |                  |                  |                  |                  |                  |                  |                                                   |                                |                      |         |               |                |
| (1)         | (2)                                       | (3)              | (4)              | (5)              | (6)              | (7)              | (8)              | (9)              | (10)                                              | (11)                           | (12)                 | (13)    | (14)          | (15)           |
| 1953-54     | ..                                        | 27               | 3                | 64               | 22               | 1                | ..               | ..               | ..                                                | 10,108                         | 15,014               | ..      | 399           | 2,000          |
| 2nd half .. | ..                                        | 27               | 3                | 64               | 22               | 1                | ..               | ..               | ..                                                | 10,108                         | 15,014               | ..      | 399           | 2,000          |

Number of animals slaughtered

—cont.

Slaughter fee per head.

| Sheep.      | Goats.   | Pigs.    | Other animals. | Cattle. | Buffaloes. | and<br>Sheep<br>Goats. | Pigs. | Others. | Total animals<br>slaughtered. |    |    |
|-------------|----------|----------|----------------|---------|------------|------------------------|-------|---------|-------------------------------|----|----|
| (16)        | (17)     | (18)     | (19)           | (20)    | (21)       | (22)                   | (23)  | (24)    | (25)                          |    |    |
| ES.         | A.       | P.       | ES.            | A.      | P.         | ES.                    | A.    | P.      | ES.                           | A. | P. |
| 0           | 4        | 0        | 0              | 4       | 0          | 0                      | 6     | 0       | 0                             | 2  | 0  |
| to          | to       | to       | to             | to      | to         | to                     | to    | to      | to                            | to | to |
| 20          | 0        | 0        | 10             | 0       | 0          | 1                      | 2     | 0       | 5                             | 0  | 0  |
| 3,50,349    | 1,06,569 | 402      | ..             | 20      | 0          | 0                      | 10    | 0       | 0                             | 6  | 0  |
| 2nd half .. | 3,50,349 | 1,06,569 | 402            | ..      | 20         | 0                      | 0     | 10      | 0                             | 6  | 0  |
| ..          | ..       | ..       | ..             | ..      | ..         | ..                     | ..    | ..      | 5,75,521                      | .. | .. |

| RS. | A. P. | RS. | A. P. |
|-----|-------|-----|-------|
| 1   | 1     | 1   | 1     |
| 2   | 2     | 2   | 2     |
| 3   | 3     | 3   | 3     |
| 4   | 4     | 4   | 4     |
| 5   | 5     | 5   | 5     |
| 6   | 6     | 6   | 6     |
| 7   | 7     | 7   | 7     |
| 8   | 8     | 8   | 8     |
| 9   | 9     | 9   | 9     |
| 10  | 10    | 10  | 10    |
| 11  | 11    | 11  | 11    |
| 12  | 12    | 12  | 12    |
| 13  | 13    | 13  | 13    |
| 14  | 14    | 14  | 14    |
| 15  | 15    | 15  | 15    |
| 16  | 16    | 16  | 16    |
| 17  | 17    | 17  | 17    |
| 18  | 18    | 18  | 18    |
| 19  | 19    | 19  | 19    |
| 20  | 20    | 20  | 20    |
| 21  | 21    | 21  | 21    |
| 22  | 22    | 22  | 22    |
| 23  | 23    | 23  | 23    |
| 24  | 24    | 24  | 24    |
| 25  | 25    | 25  | 25    |
| 26  | 26    | 26  | 26    |
| 27  | 27    | 27  | 27    |
| 28  | 28    | 28  | 28    |
| 29  | 29    | 29  | 29    |
| 30  | 30    | 30  | 30    |
| 31  | 31    | 31  | 31    |
| 32  | 32    | 32  | 32    |
| 33  | 33    | 33  | 33    |
| 34  | 34    | 34  | 34    |
| 35  | 35    | 35  | 35    |
| 36  | 36    | 36  | 36    |
| 37  | 37    | 37  | 37    |
| 38  | 38    | 38  | 38    |
| 39  | 39    | 39  | 39    |
| 40  | 40    | 40  | 40    |
| 41  | 41    | 41  | 41    |
| 42  | 42    | 42  | 42    |
| 43  | 43    | 43  | 43    |
| 44  | 44    | 44  | 44    |
| 45  | 45    | 45  | 45    |
| 46  | 46    | 46  | 46    |
| 47  | 47    | 47  | 47    |
| 48  | 48    | 48  | 48    |
| 49  | 49    | 49  | 49    |
| 50  | 50    | 50  | 50    |
| 51  | 51    | 51  | 51    |
| 52  | 52    | 52  | 52    |
| 53  | 53    | 53  | 53    |
| 54  | 54    | 54  | 54    |
| 55  | 55    | 55  | 55    |
| 56  | 56    | 56  | 56    |
| 57  | 57    | 57  | 57    |
| 58  | 58    | 58  | 58    |
| 59  | 59    | 59  | 59    |
| 60  | 60    | 60  | 60    |
| 61  | 61    | 61  | 61    |
| 62  | 62    | 62  | 62    |
| 63  | 63    | 63  | 63    |
| 64  | 64    | 64  | 64    |
| 65  | 65    | 65  | 65    |
| 66  | 66    | 66  | 66    |
| 67  | 67    | 67  | 67    |
| 68  | 68    | 68  | 68    |
| 69  | 69    | 69  | 69    |
| 70  | 70    | 70  | 70    |
| 71  | 71    | 71  | 71    |
| 72  | 72    | 72  | 72    |
| 73  | 73    | 73  | 73    |
| 74  | 74    | 74  | 74    |
| 75  | 75    | 75  | 75    |
| 76  | 76    | 76  | 76    |
| 77  | 77    | 77  | 77    |
| 78  | 78    | 78  | 78    |
| 79  | 79    | 79  | 79    |
| 80  | 80    | 80  | 80    |
| 81  | 81    | 81  | 81    |
| 82  | 82    | 82  | 82    |
| 83  | 83    | 83  | 83    |
| 84  | 84    | 84  | 84    |
| 85  | 85    | 85  | 85    |
| 86  | 86    | 86  | 86    |
| 87  | 87    | 87  | 87    |
| 88  | 88    | 88  | 88    |
| 89  | 89    | 89  | 89    |
| 90  | 90    | 90  | 90    |
| 91  | 91    | 91  | 91    |
| 92  | 92    | 92  | 92    |
| 93  | 93    | 93  | 93    |
| 94  | 94    | 94  | 94    |
| 95  | 95    | 95  | 95    |
| 96  | 96    | 96  | 96    |
| 97  | 97    | 97  | 97    |
| 98  | 98    | 98  | 98    |
| 99  | 99    | 99  | 99    |
| 100 | 100   | 100 | 100   |

| Receipts.                                        |         |          |               |
|--------------------------------------------------|---------|----------|---------------|
| XXX. Veterinary—                                 | .. .. . | 15,601   | 8 9           |
| (a) Veterinary College fees                      | .. .. . | 2,65,810 | 15 8          |
| (b) Other receipts                               | .. .. . | 1,527    | 11 6          |
| (c) Collection of payments for services rendered | .. .. . | 8,864    | 3 0           |
| (d) Deduct refunds                               | .. .. . |          |               |
|                                                  |         |          | 2,74,076 0 11 |

RS. A. P.

RS. A. P.

## Charges.

41. Veterinary—*a*. Superintendence—

## A. Direction—

|                                |             |
|--------------------------------|-------------|
| 1 Pay of Officers .. .. .      | 11,241 14 0 |
| 2 Pay of establishment .. .. . | 14,794 12 0 |
| 3 Allowances .. .. .           | 12,872 10 9 |
| 4 Office contingencies .. .. . | 2,706 10 0  |
| 5 Other charges .. .. .        | 17,258 7 2  |

58,874 5 11

## B. District Officers—

|                                |            |
|--------------------------------|------------|
| 1 Pay of officers .. .. .      | 16,628 6 0 |
| 2 Pay of establishment .. .. . | 14,935 7 0 |
| 3 Allowances .. .. .           | 23,750 4 9 |
| 4 Office contingencies .. .. . | 9,603 12 9 |
| 5 Other charges .. .. .        | ..         |

64,917 14 6

41. *g*. Development Scheme—I Scheme included in the Five-year Plan—G. Post-war Reconstruction—

## A. Direction—

|                                 |           |
|---------------------------------|-----------|
| 1 Pay of officers .. .. .       | 8,200 0 0 |
| 2 Pay of establishments .. .. . | 860 0 0   |
| 3 Allowances .. .. .            | 5,064 6 7 |
| 4 Office contingencies .. .. .  | 154 12 0  |

14,279 2 7

## B. District Officers—

|                                |            |
|--------------------------------|------------|
| 1 Pay of officers .. .. .      | 5,533 5 0  |
| 2 Pay of establishment .. .. . | 4,374 3 0  |
| 3 Allowance .. .. .            | 7,324 9 0  |
| 4 Office contingencies .. .. . | 5,566 12 2 |

22,798 13 2

41. Veterinary—*b*. Subordinate Establishment—

|                                              |             |
|----------------------------------------------|-------------|
| 1 Pay of establishment .. .. .               | 95,563 9 0  |
| 2 Allowances .. .. .                         | 57,197 12 0 |
| 3 Office contingencies .. .. .               | 7,105 5 6   |
| 4 Purchase of sera including freight .. .. . | 1,789 0 0   |

1,61,655 10 6

41. *g*. Development Scheme—I. Scheme included in the Five-year Plan—

## C. Subordinate establishment—

|                                 |            |
|---------------------------------|------------|
| 1 Pay of establishments .. .. . | 19,457 2 0 |
| 2 Allowances .. .. .            | 16,620 2 3 |
| 3 Other charges .. .. .         | 1,058 3 11 |

37,135 8 2

41. Veterinary—*c*. Hospitals and dispensaries—

|                                                                       |             |
|-----------------------------------------------------------------------|-------------|
| 1 Pay of establishments .. .. .                                       | 77,480 1 0  |
| 2 Allowances .. .. .                                                  | 29,545 14 9 |
| 3 Office contingencies .. .. .                                        | 58,740 5 11 |
| 4 Other charges .. .. .                                               | 76,581 13 3 |
| 5 Grant to the Madras Corporation for Veterinary Dispensaries .. .. . | 2,400 0 0   |

2,44,748 2 11

41. *g*. Development Schemes—I. Schemes included in the Five-year Plan—

## D. Hospitals and dispensaries—

|                                 |            |
|---------------------------------|------------|
| 1 Pay of establishments .. .. . | 4,414 13 0 |
| 2 Allowances .. .. .            | 2,327 11 0 |
| 3 Other charges .. .. .         | 2,881 12 9 |

9,624 4 9

41. Veterinary—*d*. Education and Research—

## A. Veterinary College—

|                                    |              |
|------------------------------------|--------------|
| 1 Pay of Officers .. .. .          | 24,978 10 0  |
| 2 Pay of establishments .. .. .    | 30,637 1 0   |
| 3 Allowances and honoraria .. .. . | 21,189 4 6   |
| 4 Office contingencies .. .. .     | 18,366 14 11 |
| 5 Other charges .. .. .            | 62,721 9 6   |

1,57,893 7 11

RS. A. P.

RS. A. P.

## Charges—cont.

41. Veterinary—*d*. Education and Research—cont.

## B. Veterinary Investigation—

|                                |            |
|--------------------------------|------------|
| 1 Pay of staff .. .. .         | 3,241 11 0 |
| 2 Allowances .. .. .           | 2,590 2 0  |
| 3 Office contingencies .. .. . | 1,621 10 9 |
| 4 Mobile laboratory .. .. .    | 1,114 5 6  |

8,567 13 3

## C. Enquiry into the Helminthiasis of Cattle—

|                                                                                  |            |
|----------------------------------------------------------------------------------|------------|
| 1 Pay of officers .. .. .                                                        | 2,100 0 0  |
| 2 Pay of establishments .. .. .                                                  | 970 0 0    |
| 3 Allowances .. .. .                                                             | 1,432 12 0 |
| 4 Office contingencies .. .. .                                                   | 401 8 0    |
| 5 Contribution to Indian Council of Agricultural Research Provident Fund .. .. . | ..         |

4,904 4 0

41. *g*. Development Scheme—I. Scheme included in the Five-year Plan—

## Investigation into the diseases of poultry—

|                                |           |
|--------------------------------|-----------|
| 1 Pay of officers .. .. .      | 1,629 5 0 |
| 2 Pay of establishment .. .. . | 583 1 0   |
| 3 Allowances .. .. .           | 1,598 0 0 |
| 4 Other charges .. .. .        | 376 8 9   |

4,186 14 9

## E. Post-war Reconstruction—

## I. Investigation into the disease of sheep and goats—

|                                |           |
|--------------------------------|-----------|
| 1 Pay of officers .. .. .      | 2,037 5 0 |
| 2 Pay of establishment .. .. . | 359 3 0   |
| 3 Allowances .. .. .           | 1,520 1 0 |
| 4 Other charges .. .. .        | 860 9 10  |

4,777 2 10

## II. Other Schemes—

|                                                                                                         |    |
|---------------------------------------------------------------------------------------------------------|----|
| (i) Technical training in the United Kingdom and the United States of America .. .. .                   | .. |
| Other charges .. .. .                                                                                   | .. |
| (ii) Allowances to candidates for technical training in the United States of America .. .. .            | .. |
| (iii) Educational and training of demobilized personnel—Maintenance allowance and cost of books .. .. . | .. |

41. Veterinary—*g*. Development Scheme—II. Other Development Schemes—

## (ii) Veterinary College—

|                                 |           |
|---------------------------------|-----------|
| 1 Pay of officers .. .. .       | 4,212 0 0 |
| 2 Pay of establishments .. .. . | 275 13 0  |
| 3 Allowances .. .. .            | 1,865 5 0 |
| 4 Office contingencies .. .. .  | 370 0 0   |

6,722 2

## A. Veterinary Biological and Research Institute, Ranipet—

|                                 |             |
|---------------------------------|-------------|
| 1 Pay of officers .. .. .       | 2,975 0 0   |
| 2 Pay of establishments .. .. . | 15,073 11 0 |
| 3 Allowances .. .. .            | 6,493 12 0  |
| 4 Office contingencies .. .. .  | 22,023 5 4  |
| 5 Other charges .. .. .         | 96,573 0 0  |

1,43,138 12 4

## B. Manufacture of Ranikhet disease vaccine—

|                                 |            |
|---------------------------------|------------|
| 1 Pay of officers .. .. .       | 328 7 0    |
| 2 Pay of establishments .. .. . | 1,534 12 0 |
| 3 Allowances .. .. .            | 1,364 0 0  |
| 4 Other charges .. .. .         | 1,848 5 6  |

5,075 8 6

RS. A. P.

RS. A. A.

## Charges—cont.

## 41. Veterinary—g. Development Scheme—I. Scheme included in the Five-year Plan—G. Breeding operations—(1) Research Station—

|                              |       |   |   |
|------------------------------|-------|---|---|
| Pay of establishment .. .. . | 2,276 | 0 | 0 |
| Allowances .. .. .           | 2,984 | 5 | 0 |
| Other charges .. .. .        | 870   | 7 | 9 |

5,130 12 9

## 41. Veterinary—f. Breeding operations—

## A. Research Station—

|                                 |          |    |    |
|---------------------------------|----------|----|----|
| 1 Pay of officers .. .. .       | 1,300    | 0  | 0  |
| 2 Pay of establishments .. .. . | 9,736    | 3  | 0  |
| 3 Allowances .. .. .            | 4,592    | 10 | 0  |
| 4 Other charges .. .. .         | 2,24,427 | 1  | 11 |

2,40,055 14 11

## B. Livestock Improvement Scheme—

## I. Scheme for the formation of a Breeders' Association for Ongole—

|                                       |    |    |    |
|---------------------------------------|----|----|----|
| 1 Pay of establishments .. .. .       | .. | .. | .. |
| 2 Allowances .. .. .                  | .. | .. | .. |
| 3 Other charges—Contingencies .. .. . | .. | .. | .. |

## II. Other Schemes—

## (i) Ordinary areas—

|                                                                                 |       |    |    |
|---------------------------------------------------------------------------------|-------|----|----|
| 1 Cattle Improvement Scheme to assist Sugalis—Dearness allowance to menials. .. | ..    | .. | .. |
| 2 Sheep Breeding Scheme—                                                        | ..    | .. | .. |
| Sheep Breeding Scheme .. .. .                                                   | 1,453 | 14 | 0  |
| Dearness allowance to staff .. .. .                                             | 265   | 13 | 0  |
| Dearness allowance to menials .. .. .                                           | 850   | 3  | 0  |

2,569 14 0

## 3 Other charges—

|                                             |        |    |   |
|---------------------------------------------|--------|----|---|
| Maintenance of cattle .. .. .               | 30,069 | 10 | 7 |
| Premia for maintenance of breeding bulls .. | 39,070 | 11 | 0 |
| Dearness allowance to menials .. .. .       | 4,059  | 1  | 0 |
| Madras allowance to menials .. .. .         | 60     | 0  | 0 |

## Grant of subsidy to owners of Ongole heifer calves ..

|                                                                          |    |    |    |
|--------------------------------------------------------------------------|----|----|----|
| Scheme for the improvement of woolly breed of sheep in districts .. .. . | .. | .. | .. |
|--------------------------------------------------------------------------|----|----|----|

|                                                                            |     |   |   |
|----------------------------------------------------------------------------|-----|---|---|
| Scheme for the improvement of milch goats in South Kanara district .. .. . | 612 | 0 | 0 |
|----------------------------------------------------------------------------|-----|---|---|

|                                           |        |   |   |
|-------------------------------------------|--------|---|---|
| Subsidy to Pattagar, Palayakottai .. .. . | 10,000 | 0 | 0 |
|-------------------------------------------|--------|---|---|

|                                                                  |        |   |   |
|------------------------------------------------------------------|--------|---|---|
| 4 Scheme for the improvement of Kangayam breed of cattle .. .. . | 67,470 | 5 | 0 |
|------------------------------------------------------------------|--------|---|---|

|                                                                   |       |   |   |
|-------------------------------------------------------------------|-------|---|---|
| 5 Scheme for improvement of mutton or hairy type of sheep .. .. . | 1,004 | 8 | 0 |
|-------------------------------------------------------------------|-------|---|---|

|                                                 |     |   |   |
|-------------------------------------------------|-----|---|---|
| 6 Scheme for cattle breeding at Angunagaram. .. | 328 | 0 | 0 |
|-------------------------------------------------|-----|---|---|

1,52,674 3 7

## 7 Scheme for the improvement of woolly sheep in the Nilgiris—

|                                       |        |    |   |
|---------------------------------------|--------|----|---|
| Pay of establishment .. .. .          | 1,796  | 15 | 0 |
| Allowances .. .. .                    | 1,025  | 12 | 0 |
| Dearness allowance to menials .. .. . | 1,519  | 6  | 0 |
| Other charges .. .. .                 | 10,509 | 11 | 9 |

14,851 12 9

## (ii) Scheduled areas—

## Scheme for the Amelioration of conditions to Hill Tribes in Agency areas .. .. .

..

## C. Pony Breeding Improvement Scheme—

|                              |       |   |   |
|------------------------------|-------|---|---|
| 1 Dearness allowance .. .. . | 269   | 7 | 0 |
| 2 Miscellaneous .. .. .      | 1,860 | 0 | 1 |

2,129 7 1

RS. A. P.

RS. A. P.

## Charges—cont.

## 41. Veterinary—f. Breeding operations—cont.

## D. Poultry Development Scheme—

|                                         |       |    |   |
|-----------------------------------------|-------|----|---|
| 1 Pay of officers .. .. .               | 2,100 | 0  | 0 |
| 2 Pay of establishments .. .. .         | 2,559 | 12 | 0 |
| 3 Allowances .. .. .                    | 2,664 | 9  | 0 |
| 4 Dearness allowance to menials .. .. . | 797   | 8  | 0 |
| 5 Madras allowance to menials .. .. .   | 26    | 0  | 0 |
| 6 Other charges .. .. .                 | 9,025 | 11 | 0 |

19,302 15 1

## E. Other charges—

|                                                                        |        |    |   |
|------------------------------------------------------------------------|--------|----|---|
| Grants of Agricultural Association Exhibition Committees, etc. .. .. . | 10,480 | 14 | 8 |
| Contributions .. .. .                                                  | 10,640 | 0  | 0 |
| American-Arcot Mission for Poultry Development. ..                     | 7,803  | 2  | 6 |

28,924 1 2

## F. Scheme for salvage of dry cows—

|                                |        |    |   |
|--------------------------------|--------|----|---|
| 1 Pay of establishment .. .. . | 2,560  | 1  | 0 |
| 2 Allowances .. .. .           | 2,007  | 7  | 0 |
| 3 Other charges .. .. .        | 18,820 | 13 | 0 |

23,388 5 0

## 41. Veterinary—g. Development Scheme—II. Other Development Schemes—B. Scheme for the Improvement of sheep and goats—

|                               |       |    |   |
|-------------------------------|-------|----|---|
| Pay of establishments .. .. . | 1,009 | 1  | 0 |
| Allowances .. .. .            | 2,069 | 12 | 0 |
| Other charges .. .. .         | 1,140 | 13 | 3 |

4,219 10 3

## (iii) Cattle breeding farms—

|                               |          |    |   |
|-------------------------------|----------|----|---|
| Pay of officers .. .. .       | 4,259    | 12 | 0 |
| Pay of establishments .. .. . | 9,552    | 4  | 0 |
| Allowances .. .. .            | 6,595    | 1  | 0 |
| Other charges .. .. .         | 1,53,689 | 2  | 6 |

1,74,096 3 6

## H. Scheme for artificial insemination of cattle—

|                               |       |   |   |
|-------------------------------|-------|---|---|
| Pay of officers .. .. .       | 3,144 | 0 | 0 |
| Pay of establishments .. .. . | 6,724 | 2 | 0 |
| Allowances .. .. .            | 5,590 | 7 | 0 |
| Other charges .. .. .         | 7,755 | 4 | 0 |

23,213 13 0

## Key Village Scheme—

|                               |        |    |   |
|-------------------------------|--------|----|---|
| Pay of officers .. .. .       | 2,379  | 14 | 0 |
| Pay of establishments .. .. . | 12,591 | 6  | 0 |
| Allowances .. .. .            | 8,070  | 7  | 9 |
| Other charges .. .. .         | 54,553 | 2  | 1 |

77,594 13 10

## H. Key farm centres in private institutions ..

26,231 8 1

26,231 8 1

## Deduct charges recoverable from other Government departments, etc. .. .. .

— 15,465 8 9

— 15,465 8 9

## 41. g. Work included in the Five-year Plan—

## Cattle-breeding farms .. .. .

..

## 41. h. Charges in England—

## High Commission for India .. .. .

..

## A. Leave salary and deputation pay .. .. .

..

Grand total .. 20,02,294 15 3

TABLE IX.—*Strength of staff and distribution as on 31st March 1945,*

|    | Gazetted.                                                                                                                                            | Number. |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| 1  | Head of Department .. .. .                                                                                                                           | 1       |
| 2  | Deputy Director of Animal Husbandry (Veterinary), Madras .. .. .                                                                                     | 1       |
| 3  | Deputy Director of Animal Husbandry (Livestock), Madras .. .. .                                                                                      | 1       |
| 4  | Superintendent, Veterinary Biological and Research Institute, Ranipet .. .. .                                                                        | 1       |
| 5  | Principal, Madras Veterinary College .. .. .                                                                                                         | 1       |
| 6  | Lecturers in Madras Veterinary College (excluding the post of the Lecturer in Bacteriology held by the Principal, Madras Veterinary College) .. .. . | 13      |
| 7  | Lecturer in Chemistry, Madras Veterinary College .. .. .                                                                                             | 1       |
| 8  | Lecturer in Biology, Madras Veterinary College .. .. .                                                                                               | 1       |
| 9  | Lecturer in Veterinary Science, Agricultural College, Coimbatore .. .. .                                                                             | 1       |
| 10 | District Veterinary Officers .. .. .                                                                                                                 | 14      |
| 11 | Superintendent, Livestock Research Station, Hosur Cattle Farm .. .. .                                                                                | 1       |
| 12 | Superintendent of Livestock Farms other than Hosur .. .. .                                                                                           | 3       |
| 13 | Research Officer, Madras Helminthiasis Scheme, Madras Veterinary College .. .. .                                                                     | 1       |
| 14 | Poultry Development Officer, Madras .. .. .                                                                                                          | 1       |
| 15 | Veterinary Investigation Officer, Ranipet .. .. .                                                                                                    | 1       |
| 16 | Special Officer for Freeze Dried Vaccine .. .. .                                                                                                     | 1       |
| 17 | Assistant Disease Investigation Officer (Poultry), Ranipet .. .. .                                                                                   | 1       |
| 18 | Superintendent, Kangayam Cattle Improvement Scheme, Palayakottai .. .. .                                                                             | 1       |
| 19 | Assistant Disease Investigation Officer (Sheep and Goats), Ranipet .. .. .                                                                           | 1       |
| 20 | Special Officer for Artificial Insemination, Madras .. .. .                                                                                          | 1       |
| 21 | Sheep and Goat Development Officer, Hosur Cattle Farm .. .. .                                                                                        | 1       |
| 22 | Research Officer, Veterinary Biological and Research Institute, Ranipet .. .. .                                                                      | 1       |
| 23 | Inspector of Key Villages .. .. .                                                                                                                    | 1       |
| 24 | Inspector of Livestock, Kozhikode .. .. .                                                                                                            | 1       |
| 25 | Personal Assistant to the Director of Animal Husbandry, Madras .. .. .                                                                               | 1       |
|    | Total .. .. .                                                                                                                                        | 52      |

| Non-gazetted. |                                                                              |    |    |    |     |
|---------------|------------------------------------------------------------------------------|----|----|----|-----|
| 1             | Veterinary Assistant Surgeons in charge of Veterinary Institutions           |    |    |    | 91  |
| 2             | Touring Billets and Minor Veterinary Dispensaries                            | .. | .. | .. | 85  |
| 3             | Employed in the Madras Veterinary College                                    | .. | .. | .. | 23  |
| 4             | Employed in the Veterinary Biological and Research Institute, Ranipet        | .. | .. | .. | 13  |
| 5             | Employed in the Livestock Section                                            | .. | .. | .. | 22  |
| 6             | Employed in the Forest Department                                            | .. | .. | .. | 2   |
| 7             | Employed in the Agricultural College                                         | .. | .. | .. | 2   |
| 8             | Employed in the Special posts under the District Veterinary Officer, Madras. | .. | .. | .. | 3   |
| 9             | Employed in King Institute, Guindy                                           | .. | .. | .. | 2   |
| 10            | Employed in the Indian Council of Agricultural Research Scheme               | .. | .. | .. | 11  |
| 11            | Employed in the Community Project works                                      | .. | .. | .. | 8   |
| 12            | Employed in the Office of the Director of Animal Husbandry for statistics    | .. | .. | .. | 1   |
| 13            | Employed under foreign service liens                                         | .. | .. | .. | 1   |
| 14            | Leave reserves                                                               | .. | .. | .. | 25  |
| Total ..      |                                                                              |    |    |    | 289 |

TABLE X.—*Examination results of the Madras Veterinary College, 1953–54 (1st October 1953 to 31st March 1954).*

[illegible]

TABLE XI (a).—Statement showing the location and other particulars of livestock farms in the State of Madras during the period 1st October 1953 to 31st March 1954.

## Cattle and buffaloes.

| ADMINISTRATION REPORT OF THE                     |                   |                    |                                                                                |                                                                      |                                   |                                    |                                           |                                 |                               |                                                 |                                                      |                                      |                                      |  |
|--------------------------------------------------|-------------------|--------------------|--------------------------------------------------------------------------------|----------------------------------------------------------------------|-----------------------------------|------------------------------------|-------------------------------------------|---------------------------------|-------------------------------|-------------------------------------------------|------------------------------------------------------|--------------------------------------|--------------------------------------|--|
| Name and address of the farm.                    | Area of the farm. |                    | Purpose of the farm and herd (breeding experiments, etc.).                     | Strength of the herd in each breed.                                  |                                   |                                    | Number of sires issued during the period. |                                 |                               | Lactation average.                              |                                                      |                                      |                                      |  |
|                                                  | Total.            | Under cultivation. |                                                                                | Bulls.                                                               | Cows.                             | Youn stock.                        | Period under report.                      | Last period.                    | Last year.                    | Milk yield of the herd per lactation completed. | Days in milk.                                        | Days dry.                            |                                      |  |
| (1)                                              | (2)               | (3)                | (4)                                                                            | (5)                                                                  | (6)                               | (7)                                | (8)                                       | (9)                             | (10)                          | (11)                                            | (12)                                                 | (13)                                 | (14)                                 |  |
|                                                  | ACS.              | ACS.               |                                                                                |                                                                      |                                   |                                    |                                           |                                 |                               |                                                 | LB.                                                  |                                      |                                      |  |
| 1 Livestock Research Station, Hosur Cattle Farm. | 1,659-91          | 1,195-99           | To produce pedigree bulls for supply to districts and research.                | Kangayam<br>Scindhi<br>Crossbred<br>Gir<br>Halikar<br>Murrah buffalo | 106<br>170<br>19<br>38<br>11<br>3 | 273<br>294<br>37<br>59<br>..<br>.. | 98<br>112<br>11<br>34<br>..<br>..         | 12<br>14<br>..<br>..<br>4<br>.. | 3<br>14<br>..<br>1<br>1<br>.. | 7<br>50<br>..<br>5<br>3<br>..                   | 1,391-8<br>2,488-4<br>3,507-9<br>2,826-2<br>..<br>.. | 230<br>286<br>293<br>249<br>..<br>.. | 172<br>296<br>218<br>161<br>..<br>.. |  |
| 2 District Live stock Farm, Malabar.             | 381-28            | 152-17             | To improve livestock of the district.                                          | Murrah buffalo<br>Dharwar<br>Scindhi                                 | 13<br>1<br>5                      | 40<br>7<br>7                       | 17<br>3<br>5                              | 6<br>..<br>2                    | ..<br>..<br>1                 | ..<br>..<br>1                                   | 3,320-87<br>1,522-8<br>3,705-2                       | 327-7<br>288-0<br>321-2              | 91-2<br>88<br>91-3                   |  |
| 3 District Live stock Farm, South Kanara.        | 760-0             | 650-0              | Do.                                                                            | Murrah buffalo<br>Dharwar<br>Scindhi<br>Gir<br>Local cows            | 9<br>2<br>22<br>7<br>4            | 82<br>7<br>31<br>10<br>35          | 21<br>2<br>14<br>4<br>17                  | 1<br>..<br>..<br>..<br>..       | ..<br>..<br>1<br>..<br>..     | 1<br>..<br>1<br>..<br>..                        | 3,607-0<br>2,718<br>3,920<br>3,382<br>569            | 273<br>311<br>297<br>202<br>264      | 92<br>* 115<br>37<br>..<br>61        |  |
| 4 District Live stock Farm, Pudukkottai.         | 9-76              | 6-28               | To improve the live stock of the district and to run a small scale dairy farm. | Scindhi<br>Kangayam<br>Crossbred<br>Sahiwal<br>Murrah buffalo        | 7<br>19<br>1<br>..<br>3           | 27<br>34<br>10<br>2<br>..          | 11<br>17<br>4<br>1<br>..                  | ..<br>1<br>..<br>..<br>..       | ..<br>..<br>..<br>..<br>..    | ..<br>..<br>..<br>..<br>..                      | 4,879<br>2,227-9<br>2,375<br>4,512-5<br>..           | 440<br>318<br>288<br>375<br>..       | 157<br>141<br>180<br>351<br>..       |  |
| * No calving during the period.                  |                   |                    |                                                                                |                                                                      |                                   |                                    |                                           |                                 |                               |                                                 |                                                      |                                      |                                      |  |

\* No calving during the period.

TABLE XI (b).—Statement showing the location and other particulars of livestock farms in the State of Madras during the period from 1st October 1953 to 31st March 1954.

## Sheep.

| Name and address of the farm.                    | Area of the farm. |                    | Purpose of the farm.                                                                                                                       | Breed. | Strength of the flock in each breed. |       |        | Number of rams issued during the period. |              |            | Average wool yield for the period. |       |        |  |
|--------------------------------------------------|-------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------|-------|--------|------------------------------------------|--------------|------------|------------------------------------|-------|--------|--|
|                                                  | Total.            | Under cultivation. |                                                                                                                                            |        | Rams.                                | Ewes. | Lambs. | Period under report.                     | Last period. | Last year. | Rams.                              | Ewes. | Lambs. |  |
|                                                  |                   |                    |                                                                                                                                            |        |                                      |       |        |                                          |              |            |                                    |       |        |  |
| (1)                                              | (2)               | (3)                | (4)                                                                                                                                        | (5)    | (6)                                  | (7)   | (8)    | (9)                                      | (10)         | (11)       | (12)                               | (13)  | (14)   |  |
|                                                  | ACS.              | ACS.               |                                                                                                                                            |        |                                      |       |        |                                          |              | LB.        |                                    |       |        |  |
| 1 Livestock Research Station, Hosur Cattle Farm. | 1,659-91          | 1,195-99           | To evolve white woolly sheep better in quality and quantity of fleece yield as well as in the carcass weight than the local Bellary sheep. |        | 3                                    | 10    | 8      | 2                                        | ..           | 5          | 2-15                               | 0-14  | 1-1    |  |
|                                                  |                   |                    |                                                                                                                                            |        | ..                                   | ..    | 23     | 8                                        | ..           | 6          | 2-4                                | 1-1   | 1-3    |  |
|                                                  |                   |                    |                                                                                                                                            |        | Bellary                              | 26    | 21     | ..                                       | ..           | ..         | 2-6                                | 1-0   | 1-7    |  |
|                                                  |                   |                    |                                                                                                                                            |        | Nilgiris                             | ..    | ..     | ..                                       | ..           | ..         | 0-13                               | ..    | ..     |  |
|                                                  |                   |                    |                                                                                                                                            |        | Nilgiris Bellary.                    | 1     | ..     | ..                                       | ..           | ..         | ..                                 | 0-14  | ..     |  |
|                                                  |                   |                    |                                                                                                                                            |        | Mandya                               | 87    | 29     | ..                                       | ..           | ..         | ..                                 | ..    | ..     |  |
| 2 Sheep Farm, Dundasand, Ootacamund.             | 600               | 10-00              | To improve the Nilgiri sheep.                                                                                                              | ..     | 53                                   | 217   | 124    | 3                                        | 1            | 1          | 1-75                               | 1-10  | ..     |  |

\* Remarks.—Not shorn.

TABLE XI (c).—Statement showing the location and other particulars of livestock farms in the State of Madras during the period from 1st October 1953 to 31st March 1954.

Goats.

| Name and address of farm. | Area of farm. |                    | Purpose of the farm. | Breeds. | Strength of the herd in each breed. |       |       | Number of bucks issued during. |              |            | Average lactation yield for the herd. |       |               |           |  |
|---------------------------|---------------|--------------------|----------------------|---------|-------------------------------------|-------|-------|--------------------------------|--------------|------------|---------------------------------------|-------|---------------|-----------|--|
|                           | Total.        | Under cultivation. |                      |         | Bucks.                              | Does. | Kids. | Period report.                 | Last period. | Last year. | Records averaged.                     | Milk. | Days in milk. | Days dry. |  |
| (1)                       | (2)           | (3)                | (4)                  | (5)     | (6)                                 | (7)   | (8)   | (9)                            | (10)         | (11)       | (12)                                  | (13)  | (14)          | (15)      |  |
|                           | ACS.          |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |
|                           |               |                    |                      |         |                                     |       |       |                                |              |            |                                       |       |               |           |  |

TABLE XI (d).—Statement showing the location and other particulars of livestock farms in the State of Madras during the period from 1st October 1953 to 31st March 1954.

Poultry.

| Name and address of the farm.                    | Area of the farm. |                    | Purpose of the farm and flock.                                                                                   | Breed.                                                      | Number of birds in each breed.     |                                        |                                          | Number of cockerels issued for breeding during the period. |                                        |                                        | Number of hatchling eggs sold during the period. |              |            | Average egg yield per hen per year.                 |
|--------------------------------------------------|-------------------|--------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|------------------------------------|----------------------------------------|------------------------------------------|------------------------------------------------------------|----------------------------------------|----------------------------------------|--------------------------------------------------|--------------|------------|-----------------------------------------------------|
|                                                  | Total.            | Under cultivation. |                                                                                                                  |                                                             | Cocks.                             | Hens.                                  | Chicks.                                  | Period report.                                             | Last period.                           | Last year.                             | Period under report.                             | Last period. | Last year. |                                                     |
| (1)                                              | (2)               | (3)                | (4)                                                                                                              | (5)                                                         | (6)                                | (7)                                    | (8)                                      | (9)                                                        | (10)                                   | (11)                                   | (12)                                             | (13)         | (14)       | (15)                                                |
|                                                  | ACS.              | ACS.               |                                                                                                                  |                                                             |                                    |                                        |                                          |                                                            |                                        |                                        |                                                  |              |            |                                                     |
| 1 Livestock Research Station, Hosur Cattle Farm. | 1,659.91          | 1,195.99           | Supply of hatchling eggs and breeding stock of exotic varieties to the public, poultry demonstration units, etc. | W.L.H. ..<br>R.I.R. ..<br>B.M. ..<br>Australops ..          | 13 ..<br>12 ..<br>5 ..<br>..       | 38 ..<br>51 ..<br>13 ..<br>..          | 409 ..<br>521 ..<br>115 ..<br>1          | 13 ..<br>12 ..<br>5 ..<br>..                               | 5 ..<br>13 ..<br>2 ..<br>..            | 7 ..<br>11 ..<br>4 ..<br>..            | 3,604 ..                                         | 1,312 ..     | 2,540 ..   | 71.2 ..<br>89.6 ..<br>63.0 ..<br>..                 |
| 2 District Livestock Farm, South Kanara.         | 780.00            | 650.00             | Supply of eggs, birds, etc.                                                                                      | R.I.R. ..<br>W.L.H. ..<br>R.I.R., Desi cross.               | 11 ..<br>5 ..<br>..                | 42 ..<br>20 ..<br>9                    | 104 ..<br>50 ..<br>..                    | 72 ..<br>23 ..<br>..                                       | 52 ..<br>14 ..<br>..                   | 39 ..<br>15 ..<br>..                   | 1,023 ..                                         | 367 ..       | 1,741 ..   | 68.5 ..<br>55.8 ..<br>52.7 ..<br>41.4 ..            |
| 3 District Poultry Farm, Cannanore.              | 28.33             | 1/2                | Do.                                                                                                              | R.I.R. ..<br>W.L.H. ..                                      | 2 ..<br>6                          | 22 ..<br>73                            | 90 ..<br>382                             | 15 ..<br>64                                                | 12 ..<br>48                            | .. ..<br>65                            | 3,999 ..                                         | 2,735 ..     | 2,224 ..   | 75.0 ..<br>90.0 ..                                  |
| 4 Poultry Research Station, Madras.              | 9.98              | 100 cents.         | Research work on poultry and supply of birds and eggs.                                                           | W.L.H. ..<br>R.I.R. ..<br>B.M. ..<br>L.S. ..<br>Indigenous. | 7 ..<br>10 ..<br>4 ..<br>3 ..<br>4 | 33 ..<br>41 ..<br>19 ..<br>13 ..<br>17 | 69 ..<br>324 ..<br>59 ..<br>26 ..<br>125 | 47 ..<br>87 ..<br>51 ..<br>10 ..<br>7                      | 76 ..<br>55 ..<br>44 ..<br>24 ..<br>.. | .. ..<br>.. ..<br>.. ..<br>.. ..<br>.. | 1,033 ..                                         | 743 ..       | 5,197 ..   | 27.5 ..<br>25.7 ..<br>34.3 ..<br>19.3 ..<br>37.7 .. |

| Serial number and name of unit. | Breed of poultry. | Balance of eggs on 1st October 1953. | Number of eggs.        |            |                    |                 |                   | Broken and fed to chicks. | Transferred. | Balance of eggs on 31st March 1954. |
|---------------------------------|-------------------|--------------------------------------|------------------------|------------|--------------------|-----------------|-------------------|---------------------------|--------------|-------------------------------------|
|                                 |                   |                                      | Received from outside. | Collected. | Sold for hatching. | Sold for table. | Set for hatching. |                           |              |                                     |
| (1)                             | (2)               | (3)                                  | (4)                    | (5)        | (6)                | (7)             | (8)               | (9)                       | (10)         | (11)                                |
| 1 Kancheepuram                  | R.I.R.            | 7                                    | ..                     | 98         | 39                 | ..              | 45                | 7                         | ..           | 14                                  |
| 2 Kaliampoondi                  | W.L.H.            | 28                                   | ..                     | 124        | 114                | ..              | 9                 | 28                        | ..           | 1                                   |
| 3 Kallakurichi                  | B.M.              | ..                                   | ..                     | 1,026      | 829                | 34              | 80                | 22                        | ..           | 61                                  |
| 4 Ranipet                       | W.L.H.            | 5                                    | ..                     | ..         | ..                 | ..              | ..                | 5                         | ..           | ..                                  |
| 5 Tanjore                       | B.M.              | 125                                  | ..                     | 1,700      | 1,172              | 139             | 207               | 300                       | ..           | 7                                   |
| 6 Nagappattinam                 | R.I.R.            | 4                                    | ..                     | 17         | ..                 | 11              | ..                | 10                        | ..           | ..                                  |
|                                 | Country           | ..                                   | ..                     | 1          | ..                 | ..              | ..                | 1                         | ..           | ..                                  |
| 7 Tiruchirappalli               | Closed.           | ..                                   | ..                     | ..         | ..                 | ..              | ..                | ..                        | ..           | ..                                  |
| 8 Tallakulam                    | W.L.H.            | 3                                    | ..                     | 1,315      | 934                | ..              | 64                | 102                       | ..           | 38                                  |
| 9 Periakulam                    | B.M.              | 14                                   | ..                     | 313        | 307                | ..              | 18                | 2                         | ..           | ..                                  |
| 10 Kodaikanal                   | R.I.R.            | 3                                    | ..                     | 447        | 332                | 68              | 14                | 8                         | ..           | 28                                  |
| 11 Devakottai                   | R.I.R.            | ..                                   | ..                     | 180        | 96                 | 77              | ..                | ..                        | ..           | 7                                   |
|                                 | Desi              | ..                                   | ..                     | ..         | ..                 | ..              | ..                | ..                        | ..           | ..                                  |
| 12 Tirunelveli                  | R.I.R.            | 5                                    | ..                     | 751        | 634                | ..              | 91                | 24                        | ..           | 7                                   |
|                                 | Country           | ..                                   | ..                     | 79         | ..                 | 35              | ..                | 44                        | ..           | ..                                  |
| 13 Salem                        | W.L.H.            | ..                                   | ..                     | 76         | 48                 | 14              | 12                | ..                        | ..           | 2                                   |
|                                 | Desi              | 1                                    | ..                     | 27         | ..                 | 23              | 5                 | ..                        | ..           | ..                                  |
| 14 Pollachi                     | R.I.R.            | 24                                   | ..                     | 918        | 562                | 46              | 275               | 33                        | ..           | 26                                  |
|                                 | Country           | 11                                   | ..                     | 26         | ..                 | 35              | ..                | 2                         | ..           | ..                                  |
| 15 Coonoor                      | B.M.              | 9                                    | ..                     | 975        | 790                | 9               | 118               | ..                        | ..           | 67                                  |
|                                 | Country           | 2                                    | ..                     | 180        | ..                 | 182             | ..                | ..                        | ..           | ..                                  |
| 16 Ootacamund                   | W.L.H.            | 33                                   | ..                     | 929        | 850                | ..              | 71                | 33                        | ..           | 8                                   |
|                                 | Country           | 8                                    | ..                     | 100        | ..                 | 56              | ..                | 50                        | ..           | 2                                   |
| 17 Dharapuram                   | W.L.H.            | 39                                   | ..                     | 1,446      | 517                | 491             | 438               | 27                        | ..           | 12                                  |

|              |        |     |    |        |        |       |       |       |    |     |
|--------------|--------|-----|----|--------|--------|-------|-------|-------|----|-----|
| 18 Kozhikode | R.I.R. | 28  | .. | 1,032  | 908    | 50    | 55    | 37    | .. | 10  |
| 19 Mangalore | R.I.R. | 20  | .. | 999    | 862    | 106   | 20    | 16    | .. | 15  |
| 20 Cuddalore | W.L.H. | 32  | .. | 198    | 144    | 16    | 58    | 4     | .. | 8   |
| 21 Erode     | W.L.H. | 14  | .. | 1,937  | 668    | 349   | 547   | 205   | .. | 182 |
| 22 Tiruppur  | R.I.R. | 11  | .. | 1,002  | 427    | 412   | 81    | 49    | .. | 44  |
|              | Total  | 426 | .. | 15,716 | 10,233 | 2,153 | 2,208 | 1,009 | .. | 539 |

R.I.R.—Rhode Island Red.

W.L.H.—White Leghorn.

B.M.—Black Minorca.

Statement showing the receipts and disposal of birds in poultry demonstration units for the period from 1st October 1953 to 31st March 1954.

| Name of Veterinary Institutions. | Breed.             | Stock on 1st October 1953. | Received by hatch. | Received from outside. | Sold for breeding. | Sold for table. | Transfers. | Deaths and destructions. | Stock on 31st March 1954. | Receipts. | Expenditure.       |
|----------------------------------|--------------------|----------------------------|--------------------|------------------------|--------------------|-----------------|------------|--------------------------|---------------------------|-----------|--------------------|
| (1)                              | (2)                | (3)                        | (4)                | (5)                    | (6)                | (7)             | (8)        | (9)                      | (10)                      | (11)      | (12)               |
| 1 Kancheepuram                   | R.I.R. Desi        | 19                         | 14                 | ..                     | ..                 | 2               | 2          | 6                        | 23                        | 21        | RS. A. P. 127 12 6 |
| 2 Kaliyampundi                   | W.L.H. R.I.R. Desi | 9                          | ..                 | ..                     | ..                 | 3               | ..         | 1                        | 4                         | 10        | 0                  |
| 3 Ranipet                        | W.L.H. B.M. Desi   | 2                          | ..                 | ..                     | ..                 | ..              | ..         | ..                       | 7                         | 6         | 9                  |
| 4 Tanjore                        | W.L.H. B.M. Desi   | 50                         | 54                 | 12                     | 37                 | ..              | 15         | 16                       | 48                        | 181       | 1 6                |
| 5 Nagappattinam                  | R.I.R. Desi        | 34                         | 6                  | ..                     | 35                 | ..              | ..         | 5                        | 6                         | 70        | 14 3               |
| 6 Cuddalore                      | W.L.H. B.M.        | 31                         | 14                 | ..                     | ..                 | ..              | ..         | 23                       | 22                        | 40        | 11 9               |
| 7 Kallakurichi                   | B.M.               | 18                         | 42                 | ..                     | 2                  | 1               | ..         | 29                       | 28                        | 244       | 14 0               |
| 8 Tallakulam                     | W.L.H. B.M.        | 74                         | 31                 | ..                     | 4                  | 29              | ..         | 11                       | 61                        | 312       | 10 0               |
| 9 Periakulam                     | B.M. R.I.R.        | 27                         | 11                 | ..                     | ..                 | 1               | ..         | 1                        | 36                        | 87        | 12 0               |
| 10 Kodaikanal                    | R.I.R. R.I.R.      | 19                         | ..                 | ..                     | 2                  | 2               | ..         | 5                        | 10                        | 109       | 8 0                |
| 11 Devakottai                    | R.I.R. R.I.R.      | 12                         | ..                 | 1                      | ..                 | ..              | ..         | 1                        | 12                        | ..        | ..                 |
| 12 Tirunelveli                   | R.I.R. Desi        | 12                         | 53                 | ..                     | 11                 | ..              | ..         | 7                        | 47                        | 178       | 14 0               |
| 13 Salem                         | W.L.H. Desi        | 5                          | 5                  | ..                     | 3                  | ..              | ..         | ..                       | 2                         | ..        | ..                 |
| 14 Coonoor                       | B.M. Desi          | 108                        | 65                 | 11                     | 74                 | 7               | ..         | 1                        | 6                         | 35        | 6 0                |
| 15 Ootacamund                    | W.L.H. Desi        | 4                          | ..                 | 5                      | ..                 | ..              | 19         | 3                        | 88                        | 371       | 12 0               |
| 16 Pollachi                      | R.I.R. W.L.H. Desi | 73                         | 104                | 7                      | 90                 | ..              | ..         | 3                        | 6                         | 221       | 6 0                |
|                                  |                    | 7                          | 23                 | ..                     | ..                 | 16              | 7          | 12                       | 71                        | 354       | 13 0               |
|                                  |                    | 4                          | ..                 | ..                     | ..                 | 1               | ..         | 6                        | 3                         | ..        | ..                 |
|                                  |                    |                            |                    |                        |                    |                 |            | ..                       |                           | 4,094     | 9 3                |
|                                  |                    |                            |                    |                        |                    |                 |            | 208                      | 916                       | 5,397     | 11 6               |

R.I.R.—Rhode Island Red.

W.L.H.—White Leghorn.

B.M.—Black Minorca.

N.R.—Non-recurring.

MADRAS,  
7th August 1954.

V. R. RAJAGOPALAN,  
Director of Animal Husbandry.

## ADMINISTRATION REPORT OF THE

|                    |             |     |       |    |     |    |     |     |     |       |      |             |
|--------------------|-------------|-----|-------|----|-----|----|-----|-----|-----|-------|------|-------------|
| 17 Erode           | W.L.H.      | 134 | 270   | .. | 208 | 15 | 14  | 13  | 154 | 1,313 | 12 0 | 2,079 15 11 |
| 18 Tiruppur        | R.I.R.      | 93  | 38    | .. | 44  | .. | 9   | 7   | 76  | ..    | ..   | ..          |
| 19 Dharpuram       | W.L.H.      | 87  | 276   | .. | 229 | .. | 24  | 23  | 87  | 225   | 10 0 | 222 8 1     |
| 20 Mangalore       | R.I.R. Desi | 43  | 11    | .. | 4   | .. | ..  | 2   | 49  | ..    | N.R. | 190 1 0     |
| 21 Kozhikode       | R.I.R.      | ..  | 16    | 29 | 2   | .. | 3   | 12  | 28  | 252   | 8 0  | 170 9 9     |
| 22 Tiruchirappalli | ..          | ..  | ..    | .. | ..  | .. | ..  | ..  | ..  | ..    | ..   | ..          |
| Total              | ..          | 948 | 1,062 | 83 | 771 | 86 | 112 | 208 | 916 | 4,094 | 9 3  | 5,397 11 6  |



AGRICULTURE DEPARTMENT

**G.O. No. 3542, 10th December 1954**

Administration Report—1953-54—Animal Husbandry department—Recorded with remarks.

READ—the following paper :—

From the Director of Animal Husbandry, dated 7th August 1954,  
Roc. No. 103-IV/54.

\* Order—No. 3542, Agriculture, dated 10th December 1954.

The report on the working of the Animal Husbandry department for 1953-54 submitted by the Director of Animal Husbandry with his letter cited is recorded with the following remarks.

2. *Administration.*—(a) The most important event during the year was the Andhra separation from 1st October 1953. In accordance with the general instructions issued by Government, the report submitted by the Director of Animal Husbandry is in two parts and relates to the Composite State up to 30th September 1954 and to the Madras State from 1st October 1953 to 31st March 1954, respectively. As a result of the separation, there was not only a distribution of staff and institutions but also some of the breeding tracts like the Ongole tract for cattle and Bellary for sheep got separated from Madras. The general set up of the organization however remained more or less the same with reduced strength of staff and the department was maintained as a separate entity without being clubbed with any other department. The strength of the gazetted posts in the Madras Animal Husbandry department on 31st March 1954 was 51 as against 70 at the commencement of year and the strength of Veterinary Assistant Surgeons was 289 as against 490 at the commencement of the year. The only important gazetted post created during the year was that of the Special Officer for Freeze Dried Vaccine at the Institute for Veterinary Preventive Medicine at Ranipet which continues to remain in this State.

(b) During the course of the year under review, the Government found that the working of the department and especially the livestock farms required to be investigated by a Special Officer and suitable measures formulated for improving them. In G.O. No. 3388, Development, dated 21st July 1953, they accordingly appointed Sri W. R. S. Sathianathan, I.C.S., Member, Board of Revenue, to go into the question and submit a report. His report was received by Government in February 1954 and is being examined.

(c) During the year, the Government sanctioned the deputation of an officer of the department for undergoing training in livestock improvement at the Massey Agricultural College in New Zealand for a period of about one year under the Colombo Plan.

3. *Veterinary education.*—(a) The number of admissions to the B.V.Sc. Course was restricted to 80. There was however a slight fall in the total number of applications for admission compared with the previous year. The reasons for the fall are not apparent. The Post-Graduate Refresher Course was continued but on the recommendation of the Director of Animal Husbandry, the Veterinary and Livestock Inspectors' Course was discontinued during the year.

(b) One member of the staff of the college was awarded the Ph.D. Degree by the University of Madras.

(c) The temporary lecture hall in the college was converted into a small animal clinic which is popular.

(d) The manufacture of Ranikhet vaccine was continued in the college laboratory till 1st October 1953. After that date, the manufacture was transferred to the Institute of Veterinary Preventive Medicine, Ranipet. The quantity of Ranikhet vaccine manufactured during the year under review exceeded that produced during the previous year.

(e) The college continued to provide laboratory facilities for examination of clinical specimens sent by institutions in the mufassal. During the year under review, 13,155 specimens were received at the laboratory for examination, as against 13,411 during the previous year. Steps should be taken to utilize the facilities provided by the college laboratory to greater advantage.

(f) The Board of Honorary Visitors for the Madras Veterinary College was reconstituted in February 1954. The term of the reconstituted members will be for one year from 15th February 1954.

4. *Institute of Veterinary Preventive Medicine.*—(a) The production of Anti-Rinderpest sera, Rinderpest Bull virus and Rinderpest Goat virus was less than that of the previous year.

(b) The Institute continued to engage itself in the production of sera and vaccines with the methods already in vogue and has taken up during the year the production of freeze dried vaccines introduced by Dr. G. G. Alton, the Food and Agriculture Organization Expert. 821,050 doses of freeze dried Rinderpest serum were produced during the year. Under the Andhra State Act, 1953, this Institution has to serve the Andhra State also.

5. *Livestock farms.*—(a) The mortality of cattle in these farms continued to be rather high. The percentage during the year was 3 per cent in the Livestock Research Station, Hosur, against 2.6 per cent during the previous year, 16.8 per cent in the District Livestock Farm, South Kanara, as against 8.6 per cent during the previous year, 14.3 per cent in the District Livestock Farm, Malabar, as against 3.9 per cent during the previous year and 2.7 per cent in the District Livestock Farm, Pudukkottai, as against 2.3 per cent during the previous year. The mortality was very high in the District Livestock Farm, South Kanara. The reason is said to be the unfavourable seasonal conditions. As this could not be the sole reason of the occurrence, the other causes should be properly investigated.

(b) There was a fall in the average yield of milk of Sindhis in the Livestock Research Station, Hosur, of the Girs in the District Livestock Farm at Koila and of all the breeds in the District Livestock Farm at Thiruvazhamkannu. The poor yield of different breeds has repeatedly been pointed out by Government in the monthly reviews. It is essential that steps should be taken to arrest deterioration in yield effectively. It was also observed that no rational system of maintaining milk averages was maintained at the farms and no normal average was worked out for the peak and other periods for each breed. The Director of Animal Husbandry should see that milk recording is systematized and higher yields are achieved by proper management and nutrition of animals. It was also observed that there was no systematic culling of animals in these farms. The Hosur farm for example was overpopulated and animals of breedable

age which could have been issued for stud purposes were kept in larger numbers. The Director of Animal Husbandry is requested to obtain the orders of Government from time to time when the strength is more than required.

(c) As pointed out in the previous year's review, the Director of Animal Husbandry should take suitable measures to make the livestock farms self-sufficient in their fodder requirements. For example, there is scope for increasing the area under cultivation in the District Livestock Farm in Malabar so as to make it self-sufficient in its fodder requirements. It will be useful if complete statistics of the quantity of fodder produced in each livestock farm and the quantity and value of fodder purchased during each year, with report on the self-sufficiency of the farm in respect of fodder requirements are included in the annual report.

(d) Compared with the expenditure incurred on the maintenance of cattle in the different farms, the receipts were far low. The Director of Animal Husbandry should see that the receipts are improved and expenditure reduced by careful economics and avoidance of wastage and leakages.

6. *Breeding schemes and Key Village Plan.*—(a) The Key Village Scheme was expanded during the year. In addition to the five Key Village Centres which were functioning at the commencement of the year, two Key Village Centres were opened during the year under review. Thus at the end of the year, there were seven Key Village Centres with 28 key villages attached to them. The number of artificial inseminations and natural service carried out in all the centres except in Valparai increased during the year. The Valparai centre had to be closed at the end of the year as it was not working properly. In addition, the Artificial Insemination Centres at Madras, Coimbatore, Madurai and Ootacamund and the six Key Farm Centres in private institutions continued to function. The number of artificial inseminations carried out in all these centres was on the increase, the total number being 24,294 as against 8,912 during the previous year. It is gratifying to note that artificial insemination of cattle and the Key Village Scheme is steadily gaining popularity and that the department has done excellent work in this direction.

(b) The Kangayam Cattle Improvement Scheme which is being worked at Palayakottai for the last twelve years aims at improving the milch yield of Kangayam cattle without lowering its draught qualities. It is observed that the average yield per cow treated under this scheme has fallen from 5.7 lbs. per day during the previous year to 5.0 lbs. per day during the year under review. The reason for this fall requires to be investigated and the position should be reviewed whether there are defects in the scheme which would be remedied.

(c) The Salvage Farm for Dry Cows at Kambakkam continued to be popular during the year. The number of cows newly admitted during the year was 274 as against 287 during the previous year and 254 cows were returned to the owners either before or after calving, as against 303 during the previous year.

(d) There were six cattle breeding societies in this State and except one all were functioning satisfactorily. There is need for more such societies for livestock development in rural areas. It would be well if the Co-operative department takes more interest in this line of work. The Director of Animal Husbandry should communicate to the Registrar of Co-operative Societies wherever there is possibility of development of such societies which would supplement the work of the Animal Husbandry department.

(e) The Malestock distribution scheme was revived during the year. The total number of approved bulls in the State during the year were 958 as against 999 during the previous year. The number of services rendered by them during the year was 61,723 as against 61,546 during the previous year.

7. *Sheep and goats.*—(a) The Sheep Farm, Ootacamund, which is developing very well and has immense possibilities had a strength of 394 sheep and goats at the end of the year as against 339 at the commencement of the year. The mortality among the flock in the Livestock Research Station, Hosur, was high.

The percentage of mortality of the Tellicherry goats maintained in the District Livestock Farm in Malabar, was also high. The Director of Animal Husbandry should see that the mortality rates are reduced. The scheme for the improvement of milch goats in South Kanara district was also in progress. The possibility of developing the mutton variety of sheep and goats in favourable areas should be explored.

(b) Sheep shearing and demonstration units continued to function at Coimbatore, Cuddalore and Madurai.

8. *Poultry*.—(a) Exotic breeds of poultry were reared in the Poultry Research Station, Madras, in the Poultry Farm at Cannanore, in the units attached to the Livestock Farms at Hosur and at Koila and in some Veterinary institutions for breeding and demonstration purposes. It is disappointing to note that there was high mortality of birds in the Hosur Cattle Farm which is attributed to the spread of Avian Leucosis. Compared with their total strength, the mortality of birds in the Poultry Research Station, Madras, and the District Livestock Farm in South Kanara was also very high. It should have been possible for the management of these farms, with adequate and timely care, to have arrested such a high rate of mortality. The egg yields of the birds kept at various stations should also be improved. The highest average yield of birds in the Poultry Farm at Madras was poor and was only 38.2 per hen per half-year. The Director of Animal Husbandry is requested to draw up a breeding and distribution programme for each station instead of allowing work to be done in a haphazard way. The Poultry Farm at Madras and the Poultry section at Hosur should carry on research and be of guidance to other poultry farms elsewhere.

(b) The amount of receipts derived during the year in the Poultry Farm at Madras was too low, compared with the expenditure and they were only about half of the revenue derived during the last year. The reason for this fall in receipts should be investigated.

(c) Twenty-two poultry units were maintained in the different Veterinary institutions in the State. In these units, as many as 1,326 birds were sold for breeding during the year as against 913 during the previous year.

9. *Cattle shows and propaganda*.—Forty-eight cattle shows, 8 cattle and calf-rallies and 2 cattle exhibitions were held during this year. The department participated in five exhibitions conducted by other agencies. The Animal Husbandry staff should carry on extension schemes in the villages and for the benefit of milk producers in Madras City by holding meetings, distribution of leaflets and film shows wherever possible.

10. *Livestock Improvement Board*.—The State Livestock Improvement Board did not meet during the year under review as it was being reconstituted. It has since met in Hosur in June 1954.

11. *Veterinary hospitals and dispensaries*.—(a) The Veterinary hospital attached to the Madras Veterinary College continued to do good work. There were 87 Veterinary institutions in this State. The Corporation of Madras continued to maintain 3 Veterinary dispensaries in the City. The Director of Animal Husbandry has observed that most of the Government institutions are in unsuitable buildings, most of them rented or donated. As the Government's policy at present is not to take up building programmes, this has to be put up with. The Director of Animal Husbandry may put up for consideration of Government proposals for improvement or extension in absolutely essential cases (e.g., Veterinary Hospital, Saidapet) to cope with the work.

(b) Two new touring billets were opened during the year. The number of touring billets at the end of the year was 20 in addition to 65 minor Veterinary dispensaries. The number of cases attended to and the number of operations performed by the Veterinary staff is satisfactory.

12. *Disease Investigation and Research*.—The Director of Animal Husbandry has observed that delays in prompt reporting of outbreaks is still responsible to

a great extent for undue loss in stock and delay in timely preventive measures. The Board of Revenue is requested to issue instructions to the village revenue staff to report promptly outbreaks of disease and not to treat this work as routine so that the Veterinary staff could deal with this urgently. For example, although Rinderpest has effectively been controlled in this State, Blackquarter which could be checked still levies a heavy toll. Apart from the specific Veterinary Research Schemes conducted under the auspices of the Indian Council of Agricultural Research or independently by the Government, there should be co-ordination between investigation and research by team work between the respective sections in Veterinary College, the Disease Investigation Officers, the District staff and Institute of Veterinary Preventive Medicine. Similarly in respect of basic or applied research done by the different sections of the Veterinary College, the Director of Animal Husbandry is requested to draw up an annual programme and submit to Government for approval. The fulfilment of the programme should be reported in the annual administration reports. For example, work on the control and cure of Avian Leucosis could be included in the programme and the Nutrition section could take up the investigation of the nutritive value of the different varieties of grasses and the prescription of an adaptable schedule of ration for cattle for different periods and under different conditions. Good use should be made of the Animal Husbandry Statistician now employed in the department. It is gratifying to note that there have been mutual consultations between the Madras Medical College and the Madras Veterinary College in respect of certain transmitted viruses.

13. *National Extension Scheme and Community Project*.—The Animal Husbandry Extension Officers in the selected blocks carried out substantial work both in the field of breeding and veterinary activities and in the prevention of diseases. The Government would like to emphasize another aspect which is likely to be overlooked, viz., the development of dairying in the rural development units both for the health of the population and for subsidiary occupation for the people engaged. Similarly, poultry farming for which there is vast scope should be specially developed.

14. *Five-Year Plan*.—The following are the important schemes included in the plan:—

“Opening of more Veterinary dispensaries and touring billets, establishment of clinical laboratories at headquarters of Veterinary hospitals, improvement of the Institute of Veterinary Preventive Medicine, distribution of male stock, extension of the Key Village Scheme and Artificial Insemination Centres, opening of poultry demonstration units, etc. The progress of the schemes was satisfactory.”

15. *Preparation of the report*.—The report gives a vast amount of details but has not been provided with a table of contents to facilitate easy reference. Much has now been added. Each section gives bare details but is not supplemented by general remarks drawing attention to improvements effected, results achieved or defects noticed.

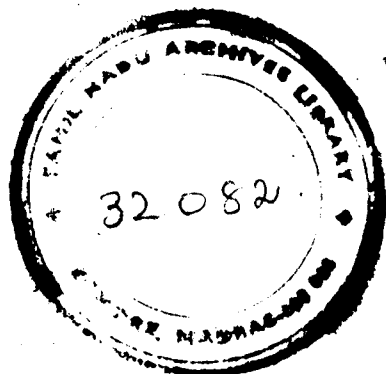
16. *General*.—The record of work during the year under review was on the whole satisfactory. There is much scope for reducing the mortality of cattle and poultry in Livestock and Poultry Farms and increasing the milk and egg yields by greater care and better management. The Director of Animal Husbandry should take note of the recommendations of Sri W. R. S. Sathianathan in his report on the working of the farms and give effect to such of them as do not involve change of policy or require the orders of Government. The Government should consider that what little research work that is carried on by the different sections of the Veterinary College should be systematized so that it may not be aimless and haphazard. A research programme should be drawn up for each section and the Institute of Veterinary Preventive Medicine within the capacity of the existing strength of staff and the progress of work should be watched. Greater attention should also be paid to extension work for the benefit of small

cattle-owners. Sheep breeding should be encouraged in favourable tracts so that agriculture may be mixed and well balanced instead of being purely concerned with grain farming. Guidance should be given to those concerned in the matter of animal nutrition by prescribing animal feeding schedules with reference to local conditions. Greater importance should be attached to increasing milk production round about urban areas particularly by introducing cross-bred animals and heavy yielders and encouraging the growing of suitable grasses. The Director of Animal Husbandry is requested to see that the department carries out satisfactorily the important role that it is called upon to play at the present juncture.

(By order of the Governor)

RUNACHALAM;  
Secretary to Government.

- To the Director of Animal Husbandry, Madras.
- „ Secretary, Ministry of Food and Agriculture, Government of India, New Delhi.
  - „ Secretary, Development Department, Government of Andhra, Karnool.
  - „ Secretary, Indian Council of Agricultural Research, New Delhi.
  - „ Director of Agriculture, Madras.
  - „ Commissioner of Food Production, Madras.
  - „ Director of Community Projects.
  - „ Director of Rural Welfare, Madras.
  - „ Registrar of Co-operative Societies, Madras.
  - „ Board of Revenue.
  - „ Director of Information and Publicity.
  - „ Controller of Stationery and Printing, Madras.
  - „ Public (Rural Development Projects) Department.
  - „ Public (Information and Publicity) Department.
  - „ Industries, Labour and Co-operation Department.



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