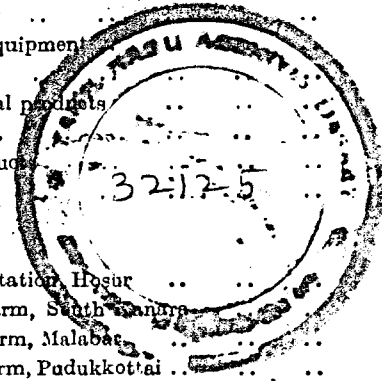


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ADMINISTRATION REPORT OF THE MADRAS ANIMAL HUSBANDRY DEPARTMENT FOR THE YEAR 1955-56.

CHAPTER I—GENERAL.

The Animal Husbandry Department of Madras State as usual had focussed upon the care and development of livestock of the State from all angles (viz.), veterinary education, development of livestock, care of morbid cases, control of epidemic, investigation and research. During the year under report there were activities other than the usual ones worthy of mention under every branch of the department of which the "Timely Relief Measures" rendered by the itinerant staff in the cyclone-affected corner of "Tamil Nad" was of special significance to the department.

The details of progress under various sections of the department are given in the following chapters. The salient features in the various branches of the department during the year are detailed below.

2. *Veterinary education.*—To overcome the paucity of technical personnel in the department and to cope up with the increased demand in respect of staff under Second Five-Year Plan, the student strength of the Madras Veterinary College was increased by raising the admissions to the college from 80 to 100 in the degree course and from 55 to 100 in the Stockmen course. With a view to train Veterinarians for the survey and control of parasitic diseases among livestock in various States of India, a post-graduate diploma course in Veterinary Parasitology was started in the college with the co-operation of Indian Council of Agricultural Research.

The post-graduate research facilities afforded in the college helped five members of the staff to register for the M.Sc. degree and one for the Ph.D. degree of the Madras University.

The standard of education imparted in the college was high as usual which could be seen from the increase in the number of Veterinarians and Stockmen turned out during the year. Seventy-five veterinary graduates and 50 stockmen had passed out during the year as against 68 and 43 respectively in the previous year.

The tempo of extra-curricular activities of the college students was on the increase and they took part in the musical contests organized in various colleges of the city, Inter-collegiate oratorical contests, inter-collegiate tournaments and Inter-University Athletics. The College Association was affiliated to the Madras City College Council and the World University Service. Besides the usual activities under the Social Service League of the college, 78 undergraduates of the college volunteered for veterinary relief work in the cyclone affected districts of the State during the year.

3. *Institute of Veterinary Preventive Medicine, Ranipet.*—The production at this institute had attained self-sufficiency almost during the year in respect of various kinds of products required for field use in the State which could be seen from the fact that only two products (viz.) Johnin and Mallein were purchased from outside for supply to the field staff. The supply of various products to other States was continued as usual and bulk supply of Freeze Dried Rinderpest vaccine to the Andhra State under Pilot Scheme for eradication of Rinderpest under Government of India was undertaken at this institute during the year. The efficiency of speedy production of biologicals at times of emergencies at this institute was well-tested during the year at the time of cyclone in Tamil Nad, when a steady large supply of vaccines (Blackquarter vaccine and Haemorrhagic Septicaemia vaccine) was demanded by the Veterinary relief squads to the tune of about seven lakhs doses within a short period of three to four weeks.

Research work was also growing at the institute and one more Research Officer for the improvement in the technique and methods used in the manufacture of virus vaccines and another Research Assistant for manufacture of combined Haemorrhagic Septicaemia Blackquarter vaccines and improvement of Haemorrhagic Septicaemia vaccines were posted during the year.

4. *Livestock development.*—The working of the farms was satisfactory during the year with increase in the number of bulls issued for breeding purposes and in milk production. One hundred and 53 breeding bulls were issued during the year as against 145 in the previous year. There were 1,300 breeding bulls of both white and black cattle at stud located all over the State under the various schemes of the department during the year as against 1,174 in the previous year. These bulls performed 64,350 services during the year. In addition to the existing four artificial insemination centres, nine key village centres and six key farm centres, three more artificial insemination centres were opened during the year at Erode, Kozhikode and Salem.

In the Sheep Farm at Dunsandle, Ootacamund, 10 Romney Marsh Rams were received from Australia for improving the wool quality of Nilgiris sheep through breeding. In addition to the existing three sheep demonstration and shearing units, one more unit was opened at Kancheepuram during the year.

The working of the poultry farms and poultry demonstration units in veterinary institutions was satisfactory. It is noteworthy that all of the demonstration units except the newly one started at Pudukkottai were in a position during the year to sell birds for rearing and that most of the units did not dispose off birds by culling for table which reflected the good condition of birds maintained during the year. 62.6 per cent of total eggs produced in all the farms and units during the year were utilized for hatching as

against 60 per cent in the previous year. Poultry section was opened in the District Livestock Farm at Orathanad with a unit of White Leghorn birds. A poultry demonstration unit was started at Veterinary Hospital, Pudukkottai, during the year. The Pilot Poultry Scheme for the intensive development of poultry in rural and urban parts sponsored by the Government of India was started during the year in the Poultry Research Station, Teynampet. A Poultry Show at State level was organized for the first time as an annual feature during the year.

There were eight stallions during the year maintained for stud purposes at Livestock Research Station, Hosur, and veterinary institutions. Two stallions were loaned from Livestock Research Station, Hosur, to be maintained for stud purposes by two interested breeders in the State.

To have thorough and uniform schedule to work in the various farms, compilation of a manual for livestock section of the department was started during the year under the charge of a special officer.

5. *Veterinary Health Service and Itinerant Staff.*—The strength of veterinary institutions in the State was further increased by the opening of ten more veterinary dispensaries during the year. Seven institutions in the headquarters of districts were equipped with clinical laboratories for early diagnosis of diseases and control of epidemics in the field. Two hundred and sixty thousand and forty-eight cases were treated and 40,061 castrations were done during the year in all these institutions.

The Itinerant staff of the department treated 126,610 cases and performed 35,665 castrations during the year. Due to the unflinching efforts of the staff, a record number of vaccinations and inoculations (viz.), 1,980,583 were done in the year among various species of domesticated livestock against epidemic and endemic diseases. If the department had not put forth this effort during the year, especially during the post cyclonic season in Tamil Nad, the loss among livestock due to contagious diseases would have gone beyond imagination. The absence of quick mode of transport was keenly felt while attending to outbreak reports and more so after the cyclone. In consonance with the suggestion of Government of India for the proper enactment of Laws and Rules for the organization of field campaigns for eradication of contagious diseases, the examination and consolidation of the existing Animal Diseases Acts in this State into a single act was taken up during the year.

6. *Relief work in cyclone-affected areas.*—During the year the department was faced with an unprecedented emergency to shoulder upon when a cyclone of very high velocity developed in the Bay of Bengal playing its havoc in the south-east corner of Tamil Nad,

in the end of November 1955. About 90,000 heads of livestock were lost on account of breaches in tanks, inundation of the sea into the shoreland, and the adverse effect of cyclonic climate. The affected area (viz.), Tanjore, Ramanathapuram, Madurai and Tiruchirappalli districts being endemic to Haemorrhagic Septicæmia and Blackquarter diseases, there was every danger of these diseases flaring up in the conducive post-cyclonic conditions that prevailed then in those areas.

Relief measures to these parts were rushed through by mobilizing men and material for the care of ailing animals through opening of camp dispensaries, for the protection of cattle in the area against the epidemics (viz.), Haemorrhagic Septicæmia and Blackquarter, and for the removal and proper burial of dead animals over and above the normal staff of the department, in these districts, 2 veterinary officers, 25 Veterinary Assistant Surgeons and 78 under-graduates of Madras Veterinary College were deputed on special duty to these parts with the inoculation outfit and curative medicines to the worth of about Rs. 16,000, the vaccines being supplied from the departmental institute at Ranipet. They were on relief work for about three weeks and covered the entire area by visiting every village. Eighty thousand copies of hand bills specially prepared for educating the ryots on the measures to be adopted to save themselves from further loss of livestock were printed and freely distributed.

Sixty camp dispensaries were opened in the area carrying the relief to the ailing animals at the doors of the ryots. Advance preventive inoculations were carried out quickly by the staff, distributing themselves in different directions of the area by forming squads. The inoculation squads undertook treatment of ailing animals also along with protection. Thus the relief squads covered 1,397 villages. Three hundred and nineteen thousand four hundred and forty-six animals were protected and over 5,000 ailing animals were treated.

The rehabilitation of the cattle lost by the ryots was also paid equal attention simultaneously with the 'on the spot' relief measures. In co-operation with the Agricultural department and Co-operative department, special marketing staff were posted to strengthen the cattle fairs and shandies and to help ryots in their purchase at reasonable prices. Interest free loans were also granted to individual ryots to the maximum of Rs. 1,000 for the purchase of work cattle and milch animals to replace the lost ones.

7. *Investigation and research.*—Investigation into diseases was continued to be carried on during the year and considerable progress was shown under the control and eradication of Brucellosis during the year. Incidence of abortion suspected to be due to trypanosomiasis in one of the farms was worthy of mention among

the findings during the year. The safe method of vaccination against Anthrax and effective vaccination against sheep-pox are to be mentioned among the progress shown during the year under the investigation into diseases of sheep and goats. In poultry section preparation of a combined Fowl-pox and Ranikhet vaccine was carried out and its efficacy was studied in the laboratory. The research work in various departments of the Madras Veterinary College was continued to be carried out during the year. For the first time in India, the Pullet disease or Avian Monocytosis among poultry was recorded in the College during the year.

8. *Propaganda.*—Much head-way had been made in this line during the year which being the final year of first Five-Year Plan formed the foundation for the implementation of the second Five-Year Plan. A good number of maps, graphs, charts, photographs and leaflets were prepared during the year for distribution to district units for the purpose of exhibition. In addition to the organization of exhibitions during the one-day cattle shows and calf rallies, the department participated in 18 leading exhibitions of the State and was awarded a gold medal (certificate) by the committee of All-India Mahamakam Exhibition, Kumbakonam.

During the year, in addition to the 74 cattle shows and 13 calf rallies, Southern Regional All-India Cattle and Poultry Shows and First Madras State Annual Poultry Show were organized in Coimbatore and Madras respectively. One more annual feature (viz.), More Milk Day was added on to the list of departmental annual celebrations like "Gosamvardhana Week" Pongal week. "More Milk Day" was inaugurated during the year on the Tamil New Years Day to be followed as an annual event in the ensuing years.

9. *Statistics.*—Evaluation work on all the farms in the State since the date of their inception was taken up during the year and completed to assess the progress of the farms and the value of animals maintained.

CHAPTER II—ADMINISTRATION.

10. Dr. V. R. Rajagopalan, G.M.V.C., DIP. BACT. (Manchester) continued to be the Director of Animal Husbandry, Madras, during the year under report, with the assistance of three Deputy Directors of Animal Husbandry, for Veterinary, Livestock and Key Villages respectively. The post of Deputy Director for Key Villages was sanctioned in G.O. Ms. No. 2864, Agriculture, dated 8th December 1955 and was filled up only on 26th March 1956.

During the year under report the Director of Animal Husbandry attended the various meetings as detailed below :—

Particulars. (1)	Place of meeting. (2)	Date of meeting. (3)
1 Meeting of Animal Husbandry Wing of I.C.A.R.	Ranchi ..	27th April to 4th May 1955.
2 Special meeting of State Livestock Improvement Board.	Coimbatore.	5th June 1955.
3 Meeting of Diseases and Pests Committee of I.C.A.R.	New Delhi.	10th and 11th November 1955.
4 Meeting of Madras State Livestock Improvement Board.	Orathanad.	16th November 1955.
5 Meeting of Central Rinderpest Control Committee.	Kurnool ..	17th to 19th January 1956.
6 All-India conference of Directors of Animal Husbandry Departments of all States.	New Delhi.	10th February 1956.

In addition to the above, the Director of Animal Husbandry had discussions on second Five-Year Plan of this department with the Union Minister for Agriculture, Government of India at New Delhi on 26th and 27th May 1955. He had also served as an advisory member in the Union Public Service Commission.

The Director of Animal Husbandry was assisted by Deputy Director of Animal Husbandry (Veterinary) in the administration except in matters relating to Livestock Section and by Deputy Director of Animal Husbandry (Livestock) in matters relating to livestock farms and livestock improvement activities of the department inclusive of artificial insemination and All-India Key Village Schemes. But from 26th March 1956 he was assisted by the newly posted Deputy Director of Animal Husbandry (Key Villages) in matters relating to All-India Key Village Scheme of this State.

(a) Dr. I. D. Mantramurthi, G.M.V.C., B.V.Sc., continued to hold the post of Deputy Director of Animal Husbandry (Veterinary) during the year under report.

The offices of District Veterinary Officers and Veterinary Disease Investigation Officers, veterinary institutions, touring billets, slaughter houses, quarantine stations and the work of Extension Officers (Animal Husbandry) in National Extension Service and Community Projects areas were inspected by him during the year. During the course of his tours, in interior parts, the efficiency of preventive measures taken by staff were checked and in the National Extension Service and Community Project areas, various activities and problems on this departmental work were discussed with the respective Block Development Officers and Project Officers. He had also attended a few of the State level meetings on behalf of the Director of Animal Husbandry.

The meeting of the Second Five-Year Plan at the Secretariat was also attended by him along with the Director of Animal Husbandry. He also accompanied the Tennessee Survey Team to

the Madras Veterinary College and Institute of Veterinary Preventive Medicine, Ranipet, the team of Dairy Experts sponsored by the Food and Agricultural Organization and the All-India Committee of Society for the Prevention of Cruelty to Animals in Madras City. He toured the cyclone-affected areas immediately after the cyclone to study personally the conditions in the affected areas and arranged for prompt veterinary aid and prophylactic vaccinations against cattle epidemics. He had also assisted the Director of Animal Husbandry in organizing the All-India Southern Regional Cattle and Poultry shows at Coimbatore on a grand scale.

(b) Dr. D. Pattabiraman, G.M.V.C., A.I.D.I., held the post from 8th June 1955 to 31st March 1956. The Director of Animal Husbandry was in additional charge of this post from 1st April to 7th June 1955. He had during the course of his tours periodically, inspected the work carried out in livestock farms, key villages, artificial insemination centres and had checked the progress of livestock improvement work in the districts. He had also attended the meeting of the Animal Breeding Committee of Indian Council of Agricultural Research at New Delhi in November 1955 and the meeting of the Madras State Livestock Improvement Board at Orathanad in November 1955.

He had also keenly assisted the Director of Animal Husbandry by attending the discussions at the Secretariat on rehabilitation of cattle in the cyclone-affected areas and by drawing out useful suggestions for developing the cattle trade in those areas. He had also assisted in the successful conduct of the first Annual State Poultry Show held in March 1956.

(c) Dr. T. Ananthapadmanabhan, G.M.V.C., was promoted as the Deputy Director of Animal Husbandry (Key Villages) on 26th March 1956 to be in overall charge of the All-India Key Village Scheme in this State.

The staff of this department as a whole, evinced keen interest in their respective spheres of work and turned out their best in an efficient manner in all aspects (viz.), livestock development, disease control, veterinary education and research. The team spirit evinced by the staff and students against all odds during the cyclone relief operations of this department during the year is worthy of mention.

11. *Gazetted staff.*—During the year the following six posts were sanctioned and thus there were 63 posts in the Gazetted ranks of this department at the end of the year :—

(1) Deputy Director of Animal Husbandry (Key Villages) at headquarters.

(2) Additional Lecturer for Physiology at Madras Veterinary College.

(3) Additional Lecturer for Anatomy at Madras Veterinary College.

(4) Special Officer for Milk at Madras,

(5) Research Officer, Virus Vaccines at Institute of Veterinary Preventive Medicines, Ranipet.

(6) Superintendent, Livestock Farm, at headquarters for compilation of Livestock Manual.

The first post carries a scale of Rs. 800—1,000. The rest of the posts are in the scale of Rs. 260—700. The post of Additional Lecturer for Anatomy was not filled up during the year.

12. *Non-Gazetted staff*.—The sanctioned strength of Veterinary Assistant Surgeon, in the department as on 31st March 1956 was 452 as against 374 in the previous year.

The sanctioned strength of other categories of staff are given below :—

Veterinary and Livestock Inspectors	...	...	225
Stockmen	...	...	31
Stockmen Compounders	...	...	106

The sanctioned strength of Ministerial staff during the year was 167.

In the Government Milk Factory, Madras, which was transferred to this department there was a strength of 21 in the Technical, Engineering and Distribution sections.

The distribution of staff in the department has been detailed in Table IX annexed to this report.

13. *Deputation on training*.—Staff of this department were deputed both in and out of India for advanced training and for the various Post-Graduate courses during the year.

(a) *Training in abroad*.—Dr. P. Satyendra Rao, G.M.V.C., B.V.Sc., was deputed to Newzealand for training in Dairy Cattle Improvement.

Dr. M. C. Chellam, G.M.V.C., who was deputed to Sweden for training in Animal Gynaecology and Obstetrics returned during the year on completion of the training.

(b) *In India*.—The details of staff deputed for training and Post-Graduate courses within the country are detailed below :—

Name. (1)	Course. (2)	Place of training. (3)
(i) Dr. S. Vancheswara Iyer, G.M.V.C.	Special course in modern methods of commercial production of Veterinary Biological products.	Indian Veterinary Research Institute, Mukteswar and Izathnagar.
(ii) Dr. B. Narasinga Rai, G.M.V.C. B.V.Sc.	Diploma in Tropical Veterinary Science.	Do.
(iii) Dr. K. Ananthapadmanathan, G.M.V.C.	Post-Graduate course in Veterinary Science.	Do.
(iv) Dr. V. Venkataraman, G.M.V.C.		
(v) Dr. V. Ravivarma, Hegde, G.M.V.C. B.V.Sc.,		
(vi) Dr. G. Balasubramaniam, G.M.V.C. A.V.Sc.	Post Graduate Diploma in Veterinary Parasitology.	Madras Veterinary College.
(vii) Dr. T. Subramaniam, G.M.V.C. B.V.Sc.		

Name. (1)	Course. (2)	Place of training. (3)
(viii) Dr. V. Umamaheswaran, G.M.V.C. B.V.Sc.	Training in X-Rays.	Barnard Institute of Radiology, Madras.
(ix) Dr. C. R. Krishnamurthy, B.V.Sc.		
(x) Dr. M. N. Dandapani, G.M.V.C. B.V.Sc.	Training in the work of Anasthesia.	General Hospital, Madras.
(xi) Dr. R. D. Michael, G.M.V.C. B.V.Sc.	Training in Wool Analysis.	Sheep-Farm, poona.

Dr. A. Ramamoorthy, G.M.V.C., who was deputed to Hissar in the previous year for diploma course in Sheep Husbandry and Wool production returned during this year after successful completion of the training.

CHAPTER III—EDUCATION.

14. The Veterinary and Animal Husbandry education is also under the purview of the Animal Husbandry Department, which maintains a college at Madras for the benefit of this State as well as other States with a view to train out qualified personnel for being absorbed in various sections of the department.

The Madras Veterinary College continued to impart both theoretical and practical knowledge in the following courses during the year :—

- Course leading to degree of Bachelor of Veterinary Science of the Madras University.
- Course for Stockman.
- Course in flaying.
- Post-Graduate Diploma Course in Parasitology.

(i) *B.V.Sc. degree course*.—This course extends over a period of four years and a term for training out students with a general educational qualification of Intermediate to obtain the degree, "Bachelor of Veterinary Science" awarded by the University of Madras. In order to obtain this degree the students of the course have to pass in the following examinations :—

- B.V.Sc. (Preliminary) at the end of the first year.
- B.V.Sc. (Intermediate, Part I) at the end of the second year.
- B.V.Sc. (Intermediate, Part II) at the end of the third year.
- B.V.Sc. (Final) at the end of the course.

(a) *Admissions*.—The admission of students to this course was increased to 100 for the year under review and these 100 seats were distributed as followed :—

- For students coming from foreign countries 6
- For students coming from States other than Madras and Andhra—
 - Coorg 1
 - Travancore and Cochin 2
 - Orissa 2
 - Kashmir 2

for final year. The details of students who appeared and passed during the year are detailed below :—

	Number appeared.		Number passed.	
	Whole.	By parts.	Whole.	By parts.
Annual (April and June 1955)—				
Preliminary	80	2	34	2
Intermediate, Part I	66	25	12	18
Intermediate, Part II	55	12	14	11
Final	67	21	27	19
Supplementary (October and December 1955)—				
Preliminary	3	41	..	31
Intermediate, Part I	6	54	2	40
Intermediate, Part II	4	39	..	33
Final	1	39	..	29

(ii) *Course for Stockmen.*—This course is intended for training out in a short period a cadre of technical personnel with elementary knowledge in Veterinary Science and intensive training in animal husbandry with a view to provide assistance to the Veterinary Assistant Surgeons in their day-to-day field work. Candidates with general qualification of S.S.L.C. or its equivalent are selected and given theoretical and practical training for eight months at the Livestock Research Station, Hosur, and for three months at the Madras Veterinary College.

(a) *Admissions.*—The admissions were increased from 55 to 100 during the year. All the seats were filled by candidates of Madras State and the general principles applicable to B.V.Sc. Degree Course was also applicable to this course also in the mode of selection.

Four hundred and thirty-two applications were received of which 100 were selected as detailed below :—

Scheduled castes and tribes	9
Backward class	63
Others	28
	—
	100
	—

Ninety-nine students were on the rolls at the end of the year.

(b) *Stipends.*—The students of stockman course were eligible for a monthly stipend at Rs. 30 in case of Backward classes and Rs. 35 in the case of Scheduled castes and tribes.

(c) *Examinations.*—The annual examination for this course was held in July during the year and 50 students passed out of 51 appeared for the examination.

(iii) *Course in flaying.*—Under the scheme sanctioned in 1952-53 by Madras Government to start a flaying school in Madras Veterinary College for training professional flayers and Veterinary Assistant Surgeons who are to train, in turn, flayers in the districts, this course was continued for the third year during the year under report. This course is of three months' duration. Licensed butchers and those interested in this branch who will be able to read and write are usually taken up for this course. A total number of 59 candidates consisting of 52 new recruits and 7 butchers were trained during the year in three batches. Besides the training at Madras Veterinary College, the candidates from mufassal were also trained through the opening of auxiliary centres at important towns. Thus during the year four auxiliary centres were opened bringing the total number of centres to six of which the centre at Tiruppattur was closed for want of candidates. The details of students trained at these centres are detailed below :—

	Tiruchi-rappalli.	Coonoor.	Mangalore.	Talakkulam.	Tuticorin.	Total.
	(1)	(2)	(3)	(4)	(5)	(6)
I batch ..	..	..	4	5	5	14
II batch ..	..	..	4	6	5	15
III batch ..	11	27	..	..	5	43
	—	—	—	—	—	—
	11	27	8	11	15	72
	—	—	—	—	—	—

(a) *Stipends.*—The students of flaying course were given a subsidy of Rs. 10 per month in the case of licensed flayers and Rs. 25 per month in the case of new recruits.

(iv) *Post-graduate Diploma Course in Veterinary Parasitology.*—The Post-Graduate Diploma Course of six months' duration, in Veterinary Parasitology was started with a view to train Veterinarians for the survey and control of parasitic diseases in domestic animals of the various States in India. It is conducted for the benefit of Veterinarians of recognized institutions deputed by various State and Central Governments. On actual working, the duration of the course of six months was found not sufficient and hence the course was extended to nine months. The course commenced on 16th August 1955.

The following six States forwarded the application of their candidates of which the application from Travancore-Cochin and Punjab States had to be rejected :—

West Bengal, Rajasthan, Travancore-Cochin, Punjab, Bihar, Hyderabad. The Government of Madras deputed two candidates for this course. The course for this batch will conclude on 18th May 1956.

15. *Post-Graduate Research.*—Advanced research studies were undertaken by both the staff and graduates of the college.

(i) *Staff.*—One of the Assistant Lecturers was awarded the M.Sc. Degree during the year by the Madras University. One of the Assistant Lecturers who was awarded Research Fellowship in

Animal Bacteriology by Government of India in the previous year continued his research at Indian Veterinary Research Institute, Izatnagar. Two of the Assistant Lecturers continued their research work in Animal Husbandry in America, while one had gone to America for post-graduate course in Bacteriology during the year. Among the staff 1 for Ph.D. Degree and 5 for M.Sc. Degree have registered their names. One of the Assistant Lecturers had submitted his thesis for the M.Sc. Degree during the year.

16. *Extra curricular activities—(a) Athletics and games.*—During the year these activities were under the charge of a Sports Secretary appointed from among the gazetted staff of the college, assisted by a qualified Physical Director. The College provided facilities to students to play the following games:—

Football	Badminton	Hockey	Volley Ball.
Cricket	Basket Ball	Tennis	Boxing.

During the year, the college took part in the Inter-Collegiated knockout-tournaments in football, hockey and boxing. Two students of this college were selected to represent the Madras University in football and athletics in the Inter-University tournaments.

The annual sports of this college was held as usual in February 1956 under the presidentship of Sri K. Kamaraj, the Chief Minister of Madras.

(b) *Association.*—The Madras Veterinary College Medical Association continued to function during the year providing a platform for the students and staff to read out papers of professional interest and to meet the experts in Animal Husbandry and Veterinary Sciences, and other distinguished visitors to the college. An annual number of this association was also published during the year with the articles of professional interest contributed by the staff and students of the college. This association participated through its members in the following extra-curricular activities:—

- (i) Quiz programme of the All-India Radio, Madras.
- (ii) Music competitions held by the Madras Medical College, Government College of Indian Medicine and Law College, Madras.
- (iii) Inter-collegiate oratorical contests conducted by the Madras University.

A noteworthy feature during the year was, that for the first time in the annals of the association, a batch of 80 students of this association volunteered to render Veterinary relief in the cyclone-affected districts of Tamil Nad. They were divided into four batches under the charge of the staff of the college and were on mass vaccination campaign against epidemics in the districts of Ramanathapuram, Tanjore, Tiruchirappalli and Madurai for a fortnight.

This association was affiliated to the Madras City College Council and the World University Service. Under the auspices of World University Service, the staff and students of the college had the benefit of "X-Ray" examination. The association contributed Rs. 270 to the Prime Minister's Relief Fund.

During the year, the association celebrated the following functions:—

(i) 'Independence Day' when Sri T. Chengalvaroyan, Ex-Mayor of Madras, addressed.

(ii) 'F.A.O. Day' when Dr. V. R. Rajagopalan, G.M.V.C., D.P. BACT. (Manchester), addressed.

(iii) 'Human Rights Day' under the presidentship of Dr. K. P. Chandraseharan Nair, G.M.V.C., B.V.SC.

(iv) 'Republic Day' when N. Gopal Menon, Speaker, Madras Legislative Assembly, addressed.

(c) *Social Service League.*—The Madras Veterinary College Students' Social League which was affiliated to the Madras Students' Social League continued its activities during the year also. Milk powder was distributed to the poor boys in the vicinity of the college. The students contributed voluntary labour for the construction of an open air theatre in the college premises under the Youth Welfare Programme of Government of India. This theatre was completed during the year with the contribution of Rs. 7,000 from Government of India and Rs. 3,000 from Government of Madras and was declared open by Sri K. Kamaraj, Chief Minister of Madras State.

17. *College Bus.*—The students of the college were provided with a bus for their curricular and extra-curricular activities both in and out of Madras City. A new bus has also been sanctioned during the year to replace the old one.

18. *Library.*—A library with collections of technical and general books was maintained which was strengthened by the purchase of 167 books more, during the year. The library has 3,756 books and 1,470 bound volumes of various periodicals, 3,740 books were in circulation during the year among staff and students. For the benefit of the students, the working hours of library was extended up to 8 p.m. in the final term of the year.

19. *Hostels.*—Two hostels were continued to be run during the year, one at Madras and the other at Hosur Cattle Farm.

The hostel at Madras was overcrowded as usual with 222 students inclusive of students of foreign nationality. With a view to relieve the overcrowding, the land adjacent to the existing hostel was acquired during the year for the construction of additional blocks. Proposals for the construction of additional buildings at a cost of about 10 lakhs in the Second Five-Year Plan were sent during the year for consideration.

The hostel provided facilities for both the indoor and outdoor games. A radio and a telephone were also provided in the hostel. The inmates of the hostel celebrated the Vanamahotsava, Independence Day, Republic Day and Hostel Day celebrations.

In the hostel at Hosur, 95 students of the Stockmen course were accommodated during the year besides the students of the Madras Veterinary College during their farm training in the months of April, May and June.

The discipline and health of students in both the hostels were good.

20. *Hospital*.—A well-equipped hospital is attached to the college consisting of three wards with both out-patient and in-patient facilities for cattle, horses and small animals respectively. A pharmacy, a radiology department, a shoeing forge and a clinical laboratory have also been attached to hospital section with a view to impart practical and clinical knowledge to the students.

The work turned out during the year is detailed below:—

(i) *Cases treated.*

	1953-54.	1954-55.	1955-56.
In-patients—			
Bovines	200	179	292
Equines	63	38	42
Canines and others	441	457	482
Out-patients—			
Bovines	4,745	4,977	5,417
Equines	197	231	180
Canines and others	7,277	7,901	9,007
Total ..	12,923	13,783	15,420
Daily average attendance ..	126.5	127.33	134.5

(ii) *Operations.*

	1953-54.		1954-55.		1955-56.	
	Major.	Minor.	Major.	Minor.	Major.	Minor.
Bovines	287	86	278	58	274	142
Equines	13	6	4	10	1	1
Canines and others	20	278	25	261	18	237
Total ..	320	370	307	329	293	380

(iii) *Castrations.*

	1953-54.	1954-55.	1955-56.
Bovines	9	29	29
Equines	1	4	12
Canines and others	23	13	30
Total ..	33	46	71

The details of medical and surgical cases treated during the year are detailed below:—

	Bovines.	Equines.	Canines and others.	Total.
<i>Medical cases.</i>				
Contagious diseases	39	1	1,689	1,729
Protozoan diseases	28	..	124	152
Diseases of respiratory system	123	5	89	217
Do. digestive system	2,091	29	3,214	5,334
Do. circulatory system	28	..	42	70
Do. urinary system	15	..	41	56
Do. nervous system	70	..	284	354
Do. generative system	270	..	90	360
Do. locomotor system	2	..	168	170
Do. skin (parasitic)	18	5	170	193
Do. skin (non-parasitic)	44	..	709	753
General diseases	274	41	392	707
Diseases of unknown origin	166	..	190	356
Anti-rabic treatment	45	1	270	316
Rabies	18	..	136	154
Total ..	3,231	82	7,608	10,921

	Bovines.	Equines.	Canines and others.	Total.
<i>Surgical cases.</i>				
Abscess, wounds, etc.	534	61	586	1,181
Tumours, cyst, etc.	93	..	113	206
Hernia, prolapse, etc.	91	1	29	121
Diseases of bones	129	9	159	297
Do. horns	98	..	..	98
Do. articulations	64	11	16	91
Do. muscles, tendons, etc.	35	9	6	50
Do. vessels and nerves	..	..	3	3
Do. glands	311	..	71	382
Do. foot	82	12	153	247
Do. eye, ear, nose, throat	120	1	228	349
Do. urinary and generative systems	283	20	102	405
Docking	..	..	..	53
Castrations	29	..	..	29
Test for pregnancy	589	..	..	589
Received for destruction	1	6	114	121
Carcasses received for post-mortem	19	10	250	279
Total ..	2,478	140	1,883	4,501

(a) (i) *Small Animal Clinic*.—During the year 9,489 cases were treated against 8,358 in the previous year.

(ii) *Rabies*.—Of the 136 dogs admitted for observation for Rabies, 71 proved positive. Necessary prophylactic measures were taken and thus 270 dogs were protected against rabies free of cost during the year as against 255 in the previous year.

(iii) *Ranikhet diseases*.—Two hundred and forty-three birds were protected against this disease as a prophylactic measure.

(b) *Cattle ward*.—Five thousand seven hundred and the cases were treated during the year as against 5,156 in the previous year.

(i) *Foot-and-mouth disease*.—This disease broke out in the city and three of the bulls belonging to the college were affected and treated successfully. To avoid further spread, the 'service

of bulls' was temporarily suspended for about two months and the entry of affected animals into the premises of the college was averted by an examination of all animals at the entrance.

(ii) *Blackquarter*.—Of four cases suspected for this disease 1 was confirmed positive microscopically.

(iii) *Rabies*.—Thirteen cases were admitted with symptoms of rabies of which 10 were confirmed. Forty-five animals were given prophylactic treatment.

(iv) *Mastitis*.—Three hundred and eleven cases were brought for various conditions associated with mammary glands like injuries to the teat, occlusion, stricture, etc. In most of the cases of stricture and occlusion, treatment was successful with daily infusion of antibiotics with the use of Columbus plug after the removal of stricture surgically. Terramycin was tried in 14 cases of Mastitis and though the milk was sterile after 2 or 3 infusions, the clinical improvement of milk and the udder was not satisfactory as in Penicillin Therapy.

(v) *Sterility*.—Till the opening of a sterility section under the Regional Sterility Officer on 5th November 1955, 270 cases of sterility were attended to in the cattleward. During the period under report 774 cases consisting of 610 gynaecological and 164 obstetrical cases were dealt with as classified under:—

Particulars.	Number of cases treated.	Percentage.
Gynaecological cases—		
1 Vaginitis	40	6.50
2 Cervicitis	6	0.98
3 Endometritis, first degree	2	0.33
4 Do. second degree	48	7.87
5 Pyometra	11	1.80
6 Salpingitis	..	..
7 Bursitis	..	..
8 Hypoplastic genitalia	53	8.69
9 Fibrous ovaries	27	4.43
10 Cystic ovary	18	2.96
11 Persistent Corpus Luteum	42	6.88
12 Anoestrus	23	3.68
13 Suboestrus	23	3.68
14 Late ovulation	1	0.16
15 Abortion	5	0.80
16 Positive cases of pregnancy	97	15.90
Obstetrical cases—		
1 Dystokia	30	—
2 Prolapse vagina	27	—
3 Prolapse uterus	8	—
4 Retained Placenta	99	—
5 Check up for heat	214	35.34
Total ..	774	

There were 50 cases of dystokia during the year (inclusive of the cases dealt with, prior to the opening of the sterility section) most of which were found to be due to mal-presentation and two were due to torsion of uterus. Caesarian section was made on two cases. One hundred and sixty-two cases of retained placenta were attended and 589 cases were tested for pregnancy.

(vi) *Protozoan diseases*.—Twenty-eight cases met with during the year were treated on usual lines.

(vii) *Theileriosis*.—Twenty-three cases met with were treated successfully with 1 per cent Acriflavine intravenously and alum and boric acid by mouth.

(viii) *Piroplæmosis*.—One case due to *B. bigominum* was met with and treated with Babesin.

(ix) *Trypanosomiasis*.—Three cases of surra due to *T. evanai* were met with of which two were treated with Antimonii Tartaratum and the third one was discontinued before confirmation.

(x) *Anaplasmosis*.—One case was met with in a calf.

(xi) *Nasal granuloma*.—Fifteen cases were treated with Bayer's Antimosan.

(xii) *Coccidiosis*.—Fifty-one cases were treated successfully with sulphamezathine.

(xiii) *Skin diseases*.—Thirty-five specimens of skin scrapings were subject to microscopical examination.

(c) *Horse ward*.—Two hundred and twenty-two cases were treated as against 260 in the previous year. The fall of about 40 cases is due to depletion in equine population. A case of Osteoporosis was successfully treated with sodium fluoride. Twelve stallions were castrated.

(d) *Pharmacy*.—A total number of 322,000 prescriptions were dispensed in the pharmacy with a daily average of 87.98 as against 29,580 in the previous year. Of this total number, 169 were from private cases, 1,225 from horse ward, 12,351 from cattle ward and 18,455 from Dogward.

(e) *Radiology department*.—An up-to-date shock proof X-ray plant with screening facilities was purchased during the year to replace the old one. Ultra Violet Ray apparatus and Infra Red Lamp were also purchased. Eighty cases had radiographic examination of which two were from cattle ward and 78 from dogward. Thirty-six cases were charged for the examination and 44 were diagnostic and demonstration purposes.

(f) *Shoeing forge*.—Five hundred and sixty-seven horses were shod in the year as against 521 in the last year. The forge serves as a demonstration centre for training students in the art of shoeing on scientific lines.

(g) *Fees*.—The owners of animals whose income is over Rs. 200 per month are charged for certain operations and general treatment. The details of amount realized thus are shown below:—

Year.	Number of cases treated.	Amount realized.
		RS. A. P.
1953-54	12,025	15,617 4 3
1954-55	13,783	15,839 2 3
1955-56	15,422	16,188 12 3

21. *Laboratories.*—(a) Examination of specimens from the Hospital and from field staff in and outside the States were undertaken in the laboratories of departments of Bacteriology, Pathology and Parasitology and the Clinical Laboratory. Thus, during the year 12,656 specimens of various kinds from various places were examined as against 11,774 in the previous year as detailed below :—

	Number received.
(i) Specimens received from—	
1 From the staff of the department in the field	3,398
2 From the wards and laboratories of the Madras Veterinary College	7,395
3 Livestock Research Station and other Farms of the department	478
4 Veterinary Investigation Officers, Ranipet	60
5 Corporation of Madras	322
6 Agricultural Department	6
7 Forest Department	59
8 Co-operative Department	12
9 Private bodies and other States including Andhra	1,216
Total	12,656

(ii) Details of examination of specimen—

Description.	Number of positive.
1 Actinomycotic lesions	1
2 Adenocarcinoma	3
3 Alveolar carcinoma	1
4 Adenoma	1
5 Aspergillus sp.	2
6 Anæmic changes	6
7 Avian leucosis complex	67
8 Anthrax	24
9 Auto-vaccina (for)	24
10 Babesia bigemina	29
11 Babesia canis	11
12 Borellia gallinarum	1
13 Blackquarter	30
14 Bovine lymphangitis	78
15 Broncho-pneumonia	19
16 Brucella (agglutination tests)	5
17 Chronic pericarditis	2
18 Chronic venous congestion liver	5
19 Cirrhosis—liver	1
20 Cnemidocoptes mutans	2
21 Cnemidocoptes sp.	8
22 Collapse of the lung	4
23 Cysts and growths	5
24 Demodex	129
25 Duct carcinoma	1
26 Ectoparasites	14
27 Emphysema—lung	1
28 Fatty changes—liver	7
29 Fibroma	8
30 Fibro-lipio-adenomatousum	1
31 Fibro-sarcoma	3
32 Hamorrhagic Septicæmia	27
33 Helminthic lesions	13
34 Helminths	54
35 Hepatozoon canis	16
36 Histocytic sarcoma in fowls	1
37 Hyaline changes—spleen	2
38 Hydro sephrosis	1
39 Inflammatory tissues	16
40 Koch's blue bodies	1

Description.	Number of total. positive.
41 John's diseases	56
42 Leucozytozen sp.	2
43 Melanoma	5
44 Microfilaria	30
45 Nasal polyp	1
46 Notoedres sp.	8
47 Odontogenia mixed tumour	1
48 Oedema of the lung	7
49 Oocysts of coccidia (Eimeria)	138
50 Oocysts of Isospora	15
51 Ova of Amphistomes	256
52 Ova of Ancylostomes sp.	1,088
53 Ova of Ascaris	273
54 Ova of Capillaria sp.	20
55 Ova of Cotugnia sp.	11
56 Ova of D. Caninum	15
57 Ova of Feacills sp.	15
58 Ova of Heterakis gal inae	1
59 Ova of Monozia sp.	8
60 Ova of S. Nasalis	110
61 Ova of S. Spindalis	3
62 Ova of Spirocerea lupi	132
63 Ova of Spirurids (fowl)	2
64 Ova of Strongyle sp.	833
65 Ova of Strongyloides sp.	180
66 Ova of Trema sp.	11
67 Ova of Toxocara	30
68 Ova of Trematodes	74
69 Ova of Trichuris sp.	51
70 Papiloma	10
71 Pneumonia	1
72 Rabies	81
73 Reiney's corpuscles	4
74 Rickettsia bovis	1
75 Barcoptes	53
76 Snails	5
77 Schistosoma nesalia	9
78 Squamous cell carcinoma	28
79 Speroidal called carcinoma	1
80 Theileria mutans	77
81 Theileria sp. sheep	1
82 Trichophyton sp.	42
83 Tuberculosis	5
84 Trypanosoma evansi bovines	32
85 Trypanosoma evansi equines	3
86 Trypanosoma evansi canines	1
87 Trypanosoma theileria	1
88 Veneral sarcoma	4
89 Milk	178
90 Miscellaneous	90
	4,637
Negatives	6,499
Materials of insignificant nature	1,410
Materials unfit for examination	58
Pending examination and communication of results.	52
Total	4,637 8,019
Grand total	12,656

(b) *Bacteriology Laboratory*.—(i) One thousand nine hundred and seventy-six specimens were received for diagnostic examination as against 1,714 in the previous year. The kinds of specimens are detailed below :—

(i) Microscopical examination—

(a) Smears consisting of blood pus and tissues. 740

(b) Bowel washings and rectal pinch smears. 139

879

(ii) Cultural examination—

(a) Blood swab 182

(b) Ear swab 55

(c) Pus swab 89

(d) Tissue swab 65

(e) Uterine and vaginal swabs 20

(f) Ascitic fluid 3

(g) Pleuric fluid 1

(h) Pericardial fluid 1

(i) Orchitic fluid 1

(j) Blood 8

(k) Milk 177

(l) Nasal discharge 5

(m) Saliva 2

(n) Urine 3

(o) Tissues 233

(p) Stomach and Intestinal contents 49

894

(iii) Biological Test—

(a) Blood swabs, tissue swabs and tissue fluid. 25

(b) Tissues 128

(c) Goat hair, bone sinews, etc., for issue of Anthrax-free certificates. 4

(d) Milk 1

159

(iv) Serological Tests—

Sera, synovial fluid and amniotic fluid .. 44

Total .. 1,976

(ii) The results of examination of the materials received are given below :—

Disease suspected.	Positive.	Negative.	Total.
(1)	(2)	(3)	(4)
1 Anthrax	24	124	148
2 Actinomycosis	..	2	2
3 Bovine lymphangitis	78	14	92
4 Blackquarter	30	95	125
5 Brucellosis	5	52	57
6 Hæmorrhagic septicæmia	37	115	152
7 Johne's disease	44	96	140
8 Tuberculosis	3	26	29
9 Milk	..	..	178

Disease suspected.	Positive.	Negative.	Total.
(1)	(2)	(3)	(4)
10 Auto-vaccines	..	..	24
11 Fowl Salmonellosis	..	11	11
12 Botulism	..	1	1
13 Fusiformisneccophorus	..	1	1
14 Materials not coming under the above diseases	..	..	987
15 Materials under examination	..	..	29
		Total ..	1,976

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

Diseases.	Positive.	Negative.	Total.
(1)	(2)	(3)	(4)
1 Anthrax	2	71	73
2 Blackquarter	8	51	59
3 Hæmorrhagic septicæmia	1	25	26
4 Tuberculosis	..	3	3
5 Safety test for auto-vaccines	..	..	27
6 Fusiformisneccophorus	..	2	2
7 Botulism	..	1	1
8 Experimental	..	..	8
		Total ..	199

(iv) *Auto-vaccine*.—During the year auto-vaccines were prepared for 27 cases from bacteria isolated from chronic cases which did not respond to treatment. They are detailed below :—

Species of animal.	Mastitis.	Ootorrhœa.	Total.
(1)	(2)	(3)	(4)
1 Bovines	3	..	3
2 Canines	..	24	24
	Total ..	24	27

(v) *Anthrax*.—One hundred and forty-eight materials were received for examination of which 24 were found to be positive.

Four samples of bone-sinus, the consignment of which was intended for export to foreign countries, were examined and on obtaining negative results, Anthrax-free certificates were issued.

(vi) *Brucellosis*.—Fifty-seven materials consisting of sera, synovial fluid and amniotic fluid were received and put to serological tests. Of these, only 5 were found positive for Brucellosis.

(vii) *Hæmorrhagic septicæmia*.—Of the 152 materials, consisting of blood smears, cadema fluid smears and heart blood swabs, examined microscopically, culturally and biologically, 37 were found positive.

(viii) *Johne's disease*.—One hundred and forty materials consisting of bowel washings, rectal pinch smears were examined from clinical and suspected cases of Johne's disease. In 44

instances, microscopical examination revealed acid fast bacteria morphologically indistinguishable from *Micobacterium para-tuberculosis*.

(ix) *Mastitis*.—One hundred and seventy-eight milk samples from clinically suspected cases of Mastitis were examined both microscopically and culturally. The causal organisms detected are as detailed below :—

Staphylococci	27
Streptococci	23
Diphtheroids	3
<i>Pseudomonas seruginosa</i>	9
<i>Coli asrogenes</i>	31
Diplococci	9
Mixed infection	6
No growth obtained on incubation	50
Contaminants	13
Broken	1
Pending examination	6
Total	178

(x) *Tuberculosis*.—Of the 29 materials examined, 3 were found to be positive for Tuberculosis.

(c) *Pathology Laboratory*.—(i) During the year 435 autopsies were performed for diagnostic purposes as against 321 in the previous year, details of which are given below :—

Dogs	83
Cattle	40
Horses	20
Giraffes	1
Cats	8
Deer	1
Goat	1
Poultry	281
Total	435

The interesting conditions met with during the year are—

- (1) Hepatocellular carcinoma in a hen.
- (2) Histocytic sarcoma of ovary with metastasis in lung in a fowl.
- (3) Subacute nephritis in a dog.
- (4) Tuberculosis in a dog involving pleura, kidney and diaphragm.
- (5) Tuberculosis in a dog with lesions in lung, kidney and mesenteric lymph gland.
- (6) Congenital stricture of *Oocaphagus* in an alsation pup.
- (7) Displacement and prolapses of the intervertebral disc in a Dachshund dog.

(8) Cirrhosis of liver in three dogs.

(9) Lymphosarcoma of mesenteric lymph node with metastasis in liver in a dog.

(10) Pericarditis in a dog.

(11) Pyæmia due to traumatic splenitis in a cow.

(12) Traumatic pericarditis in a cow.

(13) Generalised hydatidosis in a cow involving liver, spleen, kidney, lung, serous surface of uterine horn and pectoral muscle.

(14) Rupture of trachea in a horse.

(ii) *Avian Leucosis Complex*.—This disease was detected in 33 cases from materials received for histopathological examination and in five autopsies conducted here.

(iii) *John's disease*.—This disease was detected in five cases.

(iv) *Tuberculosis*.—This was noticed in two cases (fowls) received from the field staff and in the autopsies conducted in two dogs.

(v) *Ranikhet disease* was detected in four fowls on autopsy.

(vi) *Cirrhosis* of liver was noticed in three dogs.

(vii) *Pneumonia* was detected in seven cases.

(viii) *Coccidiosis* was detected in 21 chicks.

(ix) *Pullet Disease or Avian monocytosis* was noticed in ten pullets belonging to the college poultry unit. This is the first recorded case of the disease in India.

(d) *Parasitology Laboratory*.—As many as 4,183 clinical materials consisted of blood smears, faecal samples, skin scrapings, nasal washings, urine, ecto and endo parasites, etc., were received for examination during the year under report, against 4,261 of the previous year.

(i) *Schistosoma spindalis*.—Infection with this blood fluke in three bovines in the districts of Ramanathapuram, Madurai and Chingleput was noticed.

(ii) *Capillaria in fowls*.—Infection by this helminth was detected in 20 fowls, the majority of which was from the birds of the college poultry unit. The death of a few birds in the college poultry unit with the characteristic symptoms indicated the pathogenic nature of these nematodes and a good number of worms identified as *Capillaria annulata* were recorded at autopsies.

(iii) *Microfilaria*.—Skin nodule smears from eleven elephants of the Forest Department revealed infection with these larval forms.

Microfilaria were observed in the smears made from skin nodules of two cases of bovines.

(iv) *Parafilaria*.—The *microfilaria* suspected to be that of *Parafilaria bovicola* is under detailed study as there has been no description about this *microfilaria* in literature so far.

(v) *Theileria sp.*—Auricular smears from a *Bikaner* ram of Hosur Cattle Farm revealed this infection.

Brain smears from a bullock suffering from fits and opacity of cornea revealed *Theileria* sp. and Koch's Blue bodies, while the auricular smears from the same animals did not reveal the protozoon infection. This is an interesting record of cerebral affection with *Theileria*.

(vi) *Leucocytozoon* sp.—Smears from two fowls received from Andhra State (Badrachalam) revealed the protozoon affection.

(vii) *Rickettsia bovis*.—Bodies resembling *R. bovis* were seen in the peripheral smears of a heifer-calf received from Ramana-nathapuram district.

(viii) *Rainey's coruscules*.—These were seen in 4 cases one in the auricular smears, two in heart blood smears while the other one was in spleen smears.

(ix) *Aspergillus* sp.—This fungus was found to cause skin affection in two bulls of Malabar district.

The skin scrapings from a fowl suffering from scaly leg revealed infection with *Aspergillus* sp. besides *cnemidacoptes mutans*.

(e) *Physiology Laboratory*.—The total number of clinical materials received for Biochemical examination during the year under report was 958 as against 920 of the previous year. They are as shown below:—

Nature of specimens. (1)	Canines. (2)	Bovines. (3)	Equines. (4)	Others. (5)	Total (6)
1 Urine	359	72	7	4	442
2 Blood for total cell count	147	5	..	1	153
3 „ „ Haemo-globin estimation	73	3	..	1	77
4 Blood smears for differential count.	191	54	4	3	252
5 Serum for calcium estimation	..	7	..	..	7
6 „ „ phosphorus estimation	..	5	..	..	5
7 „ „ magnesium	..	6	..	..	6
8 Ascitic fluid for examination	2	1	..	..	3
9 Fluid from scrotum for examination.	1	..	..	..	1
10 Vomit for analysis	2	..	..	..	2
11 Bile for examination	..	..	..	1	1
12 Blood for glucose estimation	1	..	..	..	1
13 Blood for urea	6	..	..	..	6
14 Milk for the presence of acetone	..	2	..	..	2
Total					958

(f) *Nutrition Laboratory*.—Nutrient composition of the Ragi Bhusa available in large quantity at the Hosur Cattle Farm was assessed and reported to the Superintendent of the farm. It is a poor protein food but a rich carbohydrate food balanced in calcium and phosphorus ratio. As it contains insoluble ash of 5 per cent, it can be used as a roughage feed.

The Director of Agriculture, Madras, sent a sample of velvet beans and wanted to know its feeding value. This is a well known forage plant having its origin in India. All its parts are highly palatable to cattle and are rich in protein. Its feed value is widely known having literature of its own.

The Commissioner of Police was advised that the sample of Horiyal hay sent by him was found on test superior in quality and suitability, to the spear grass hay, for feeding Police horses.

The de-oiled groundnut cake made by the Madras Oil and Fisheries, Limited, was analysed with a view to find its suitability as cattle feed and it was found to be inferior in nutritive value to ordinary groundnut oil cake from which it was prepared. Though it contained higher protein its total digestive nutrient was less than that of ordinary cake.

To impart practical knowledge to the students in the growing of fodders and to serve as demonstration centres to the public of the Madras City, a small area to the extent of 6,466 square feet within the premises of college compound was made use of for growing various kinds of fodder crops. During the year, the following grasses and legumes were grown from which 11,318 lb. of green fodder was harvested and fed to the animals maintained in the College:—

Guinea grass, Napier grass, Buffalo grass, Rhodes grass, Kolukkattai grass, Lucerne, Berseam, Sesbania, Sweet potato vines and Ceylon spinach.

Trial silo pits were also formed and 859 lb. of fodder was converted into silage during the year.

(g) *Animal Husbandry Section*.—Breeding bulls and a poultry unit were maintained under this section.

There were 16 bulls at stud of which 6 were transferred to artificial insemination centres in muffsal and one was culled out and sold. These bulls intended for natural services have performed 202 natural services and the rest of the bulls were used for artificial insemination at the centre in the college. Three thousand four hundred and forty-seven inseminations were done from the collection semen made from these bulls.

A poultry unit of Rhode Island Red birds was also maintained for experimental and teaching purposes. At the beginning of the year there were 12 hens and 2 cocks. During the year 119 hens and 55 cocks were added and 66 hens and 44 cocks were sold leaving a balance of 65 hens and 13 cocks.

Five thousand four hundred and seven eggs were collected during the year of which 1,441 were set for hatching and 2,362 sold to public for hatching. There were some outstanding performances as noted below:—

(i) Some hens laid 206 to 299 eggs during the year.

(ii) Eggs weighing 2 to 2½ oz. were received during the year.

(iii) Two hens commenced laying at the age of 5 months 20 days as against 6 to 6½ months being the normal maturity age of Rhode Island Red breed.

During the year, 787 chicks were hatched out and added to the stock of 122 chicks present at the beginning of the year. Two hundred and fifty-three chicks were sold to the public, 185 transferred and 127 died leaving a balance of 344 chicks at the end of the year.

22. *General.*—(a) The members of the staff contributed the following papers of professional interest during the year:—

Anatomy.—(1) The external characters of a foetal Indian Elephant.

(2) The Anatomy of a foetal Indian Elephant, Part I—The bones and joints of the forelimbs.

(3) The Anatomy of a foetal Indian Elephant, Part II—The muscles, blood vessels and nerves of the forelimb.

(4) The Anatomy of a foetal Indian Elephant, Part III—The bones and joints of the hind limb.

(5) A note on "A rare case of early conception in a heifer-calf".

(6) A note on "A case of abnormal Thyroid in a buffalo-calf".

Pathology.—(1) Bovine lymphangitis in Madras State, Parts I and II.

(2) Pullet Disease in experimental flock at the Madras Veterinary College.

(3) Amyloidosis in horses used for anti-toxin production.

(4) Article on Tuberculosis.

Bacteriology.—(1) Migration of ovum in the Indian buffalo.

(2) Some observations on ovarian activity—Cornual pregnancy and sex ratio in the Indian buffalo.

Parasitology.—A note on the occurrence of *Oesophagostomum sciostomum* in Indian monkeys.

Animal nutrition.—(1) Feeding of cattle.

(2) Cysteine in Health and Disease.

(3) Impure salt and eczema in cattle.

(4) Efficiency of farm animals as converters of plant feeds into "Protective feeds".

(5) Feeding mesh for starting chicks.

(6) Protein needs of dairy cattle.

(7) Biochemical changes in ensilage.

(8) Nutritive value of green manure crop—*Glyricidia maculata*.

(9) Nutritive value of green manure phaseoles *Aconatofolius* or *phillipesera*.

(10) Nutritive value of green manure crop—*Crotalaria juncea* or *Sunn hemp*.

(11) Carbondioxide evolution in ensilage.

(12) Garden forage crops.

(13) Lucerne—Its cultivation and feeding value of live stock.

(14) Feed your cows well and drink more milk.

Medicine.—(1) Diseases of poultry.

(2) Diseases transmitted through milk.

(3) Rabies in cattle.

(b) The staff of the college attended meetings and conferences during the year as detailed below:—

Name of meeting or conference.	Place.	Member of staff attended.
Animal Nutrition Committee meeting.	New Delhi ..	Professor of Animal Nutrition.
Disease Investigation Officers and Veterinary Research Workers' Conference.	Izatnagar ..	Principal-cum-Professor of Hygiene.
Sterility Officers' Conference	New Delhi ..	Regional Sterility Officer.

The professors in Hygiene, Surgery, Pathology, Medicine and Anatomy and Lecturer in Animal Husbandry underwent the Refresher course in Veterinary Education conducted by F.A.O. Expert at Bombay Veterinary College from 15th to 24th September 1955.

(c) The college had the distinction of receiving the following visitors during the year:—

(1) Dr. N. D. Peacock.

(2) Dr. L. J. Long.

(3) Dr. F. W. Parker.

(4) Dr. R. G. Buchaman.

(5) Dr. A. H. Moseman.

(6) Dr. E. E. Leasine.

Members of Tennessee State University Survey Team under Indo-American Technical Co-operation.

(7) Professor John Yudkin of London University.

(8) Professor Alexander Robertson, President, Veterinary Faculty, Edinburgh University.

(9) Sri D. A. Khurrody, Milk Commissioner, Bombay.

23. *Board of Honorary Visitors.*—With a view to give opportunities to non-official members to be in touch with hospital attached to the college, a board of honorary visitors was reconstituted during the year with seven members for which Srimathi Fathima Akhter was the President. The Board met four times during the year and gave valuable suggestions for improvement after their visit to the hospital.

24. *Animal Husbandry in Agricultural College, Coimbatore.*—To impart training in Animal Husbandry subject which is included in the Agricultural Degree Course, one lecturer in Animal Husbandry and two Veterinary Assistant Surgeons are working in the Agricultural College, Coimbatore, a Veterinary hospital is also attached to this college where 5,179 cases were treated and 734 castrations were done during the year under report. There are two Scindhi bulls one Kangayam bull and one Gir bull maintained in this hospital for breeding purposes.

CHAPTER IV—INSTITUTE OF PREVENTIVE MEDICINE, RANIPET.

25. The institute was under the charge of a Superintendent assisted by one Research Officer, one Special Officer for freeze dried vaccines and 13 Veterinary Assistant Surgeons. The institute was further strengthened with one more post of Research Officer (Virus Vaccines) under the scheme of Indian Council of Agricultural Research for the improvement in the technique and methods used in the manufacture of virus vaccines, which was sanctioned during the year and filled on 27th February 1956 and one more post of Research Assistant for the scheme on manufacture of combined vaccine for Haemorrhagic Septicæmia and Blackquarter and improvement of Haemorrhagic Septicæmia vaccine sponsored by Indian Council of Agricultural Research.

26. *Accommodation and equipment.*—(i) With a view to cope up with increased activities at the institute, proposals for further constructions and equipments were sanctioned as detailed below and execution of the same will be taken up in the ensuing year:—

(a) Provision of an air-conditioner for the freeze drying room.

(b) Construction of an incubator room for increased vaccine production.

(c) Construction of an animal house for breeding and rearing small experimental animals.

(d) Construction of a dozen isolation sheds for housing animals under different experiments.

(e) Renewal of the thatched roof of one of the cattle sheds.

(f) Improvement to "Q" type quarters.

(g) The purchase of a large size steam sterilizer and boiler for generating steam for the increased production of vaccine at the institute.

During the year under review, provision for electrical amenities to the various sections and to the Research Officers' room and repairs to the quarters of Veterinary Disease Investigation Officer (Sheep and Goat) were completed.

(ii) *Water-supply.*—As the water-supply to the institute hitherto was effected through Messrs. Parry & Co., at the rate of Re. 0-11-0 per thousand gallons, a borewell was sunk at the institute to which a submersible pump was installed during the year, but the yield of water from the well was only 8,000 gallons a day and hence the water-supply from Parry & Co. was continued during the year as usual.

(iii) A community radio set continued to function during the year for the benefits of staff and labourers.

27. *Livestock and fodder.*—The animals required during the year for the production of sera and vaccines and biological tests were obtained as detailed below:—

Species of animals.	Number of animals required		Source.
	During the year.	In previous year.	
(i) He-buffaloes	12	68	Purchased on contract basis.
(ii) Buffalo calves	391	567	
(iii) Bull and heifer calves	138	123	
(iv) Goats	1,143	1,486	
(v) Sheep	181	254	
(vi) Guinea pigs }	..	..	Bred at the Institute.
(vii) mice }	..	..	
(viii) Albino-white rats	142	..	Indian Dairy Research Institute, Bangalore.
(ix) Poultry	..	..	A small poultry unit is maintained at the Institute for a regular supply of eggs and chicks for manufacture of poultry vaccine and tests.

After the preparation of biological products, 253 buffalo calves, 127 bull and heifer calves, 59 sheep and 125 goats were sold to the contractors and in the process of manufacture of biological products, 126 buffalo calves, 24 bull and heifer calves, 1,053 goats and 79 sheep died during the year.

Skins and bones from 1,034 carcasses of goats used for manufacture of Freeze Dried Rinderpest vaccine were sold to the contractor.

The fodder and feed for cattle were purchased on contract basis. The grains (ragi) required for poultry was received from Livestock Research Station, Hosur, and the raw feed like onion, greens, etc., required for small animals and poultry were purchased locally.

28. *Cultivation of fodder crops, fruit trees, etc.*—Cholam crops raised in about 2 acres of land yielded 336 lb. of cholam grains and 5,715 lb. of cholam straw. Glyricidia 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. Some fruits harvested from the small orchard and garden maintained at this Institute were sold to the staff of the Institute.

29. *Production of biological products.*—All the vaccines and sera required for the protection of various species of livestock in this State was manufactured at the institute during the year except for a few products, viz., Johnin and Mallein, which were obtained from Indian Veterinary Research Institute, Mukteswar.

Freeze Dried Rinderpest vaccine was supplied in large quantities to Andhra State and in addition, to other States also, viz., Kutch, Junagadh, Sourashtra and Bhavnagar; and Raikhet

vaccine was supplied to Andhra, Coorg, Travancore, Cochin and Hyderabad. The following vaccines were manufactured in the freeze dried form during the year :—

Rinderpest Coat Tissue vaccine, Ranikhet Disease vaccine, Pigeon-pox vaccine, Sheep-pox vaccine, Rinderpest Goat Tissue extract vaccine (Experimental).

A noteworthy feature during the year was that this Institute was able to cope up with the unprecedented demand of biological products for use in cyclone-affected areas in Tamil Nad within a short period of about one month for protecting all the cattle in these areas. The cyclone relief operations were kept going continuously by a steady large supply of vaccine to the extent of 404,280 doses Haemorrhagic Septicæmia vaccine and 282,420 doses of Blackquarter vaccine.

(i) *Anti-Rinderpest serum*.—From the stock of 283,415 doses of 5 c.c. each available at the beginning of the year, 265,787 doses were issued for field inoculation as against 217,335 doses in previous year for protecting highly susceptible cattle and those that attended the cattle fairs in the State. No serum was manufactured during the year due to introduction of Goat Tissue vaccine in freeze dried form for protection in Madras and Andhra States.

(ii) *Rinderpest bull virus*.—Ninety-two buffalo calves and 2 bull calves were used for the production and maintenance of this virus at the Institute. The quantity of Rinderpest Bull virus manufactured during the year was 4,965 c.c. as against 7,865 c.c. during the previous year. Four thousand nine hundred and sixty-five c.c. of the Rinderpest Bull virus were issued for use during the year as against 7,290 c.c. of the previous year.

As in previous years, the Rinderpest Bull virus strain was maintained for Anti-Rinderpest serum production and for testing Rinderpest Freeze Dried vaccine. The strain of bull virus was maintained by serial passages in buffalo calves. During the year, Seed Bull virus was supplied to the Director, Animal Husbandry Department, Nagpur and Director, Civil Veterinary Department, Hyderabad.

(iii) *Rinderpest Goat virus*.—Thirty-six thousand, four hundred and ninety-five c.c. of Goat Blood virus was manufactured by using 133 goats during the year as against 109,560 c.c. from 284 goats in the previous year. Of these, 33,245 c.c. were issued for use in the field during the year as against 100,061 c.c. in the previous year. The fall in demand and issue was due to the use of Freeze Dried Goat tissue vaccine.

The Mukteshwar strain 'W' line of Goat virus was used for Goat virus production.

(iv) *Freeze Dried Rinderpest vaccine (Powder)*.—There was heavy demand for this product during the year and large quantities of this product were supplied to the Andhra State for protecting

animals both in the infected and free areas and for use in the Rinderpest Eradication Campaign. This product was also supplied for use in the various quarantine stations in this State for protecting the animals that are brought into the State from outside. In addition, this product was supplied to other States, viz., Kutch, Junagadh, Sourashtra and Bhavnagar.

Forty-nine batches of Freeze Dried Rinderpest vaccine were manufactured during the year under report. Forty-six batches from these and 3 from last year's batches of vaccine were tested during the period. In addition to the stock of 313,650 doses of the vaccine available at the beginning of the year, 1,535,850 doses of the vaccine were manufactured during the year under report as against 1,467,050 doses of the previous year.

Seventeen lakhs, fourteen thousand, four hundred and fifty doses were issued as against 1,416,175 doses of the previous year, for use in the field including the staff of Andhra State. 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.

(v) *Haemorrhagic Septicæmia vaccine*.—There was a stock of 26,084 doses of 5 c.c. each of this vaccine at the beginning of the year. During the year under report, 2,244,780 doses of 5 c.c. each of the vaccine comprising 61 brews were manufactured as against 1,183,610 doses of the previous year. Of these, 2,173,136 doses were supplied to the field staff during the year as against 1,196,772 doses of the previous year.

The demand for the product was very heavy during the year due to the widespread incidence of the disease, timely vaccination of animals in anticipation of outbreaks of the disease and also due to intensive protective vaccinations conducted in the cyclone affected districts of the State. Each brew of the vaccine was tested both culturally and biologically for sterility and safety before issue to the field. One hundred buffalo and Zebu calves, 130 rabbits and 244 mice were used for testing the various brews of the vaccine and for other experiments in the section.

(vi) *Blackquarter vaccine*.—The stock of Blackquarter vaccine at the beginning of the year was 68,104 doses of 5 c.c. each. Thirty-seven brews of the vaccine consisting of 2,636,250 doses of 5 c.c. each were manufactured during the year as against 1,450,520 doses of the previous year. Each brew of the vaccine was tested for sterility, safety and potency before issue to the field. One hundred and sixteen buffalo calves, 136 bull calves, 58 sheep and 182 Guinea pigs were utilized for the testing of the vaccine and for experiments in the section. The total quantity of vaccine issued during the year was 2,629,704 doses as against 1,122,726 doses in the previous year. The demand for the product during the year was very heavy due to the widespread prevalence of the disease, the systematic vaccination of animals in endemic areas well in

advance of the expected season, the concentrated work of protecting livestock against contagious and infectious diseases in National Extension Service and Community Project areas and the large-scale vaccinations of animals in the cyclone affected districts of the State during the year.

(vii) *Anti-Anthrax serum*.—The stock of the product on hand at the beginning of the year was 4,880 doses of 15 c.c. each and during the period under review no Anti-Anthrax serum was manufactured. Four thousand and seven hundred doses of the serum were supplied to the staff for use in the field as against 7,640 doses of the previous year. Eight hundred doses of Anthrax serum were obtained from the Indian Veterinary Research Institute, Izatnagar. The stock of serum at the end of the year was 1,740 doses of 15 c.c. each including the quantity returned unused by the staff. One brew of the serum is under preparation.

(viii) *Anthrax Spore vaccine*.—The experimental manufacture of this product was continued during the year. The product manufactured at the institute was supplied to the Veterinary Disease Investigation Officer (Cattle), Veterinary Disease Investigation Officer (Sheep and Goats) and field staff and it was found to be a safe and efficient product for protecting cattle, sheep and goats against Anthrax. During the year 61,780 doses of the vaccine were manufactured and tested as against 26,640 doses manufactured during the previous year. Forty-eight thousand, five hundred and thirty doses of the vaccine were issued for field use as against 18,520 doses issued during the previous year. The stock of vaccine at the end of the year was 13,250 doses. One hundred and fourteen sheep, 37 goats, 3 buffalo calves and 62 Guinea pigs were used for testing the vaccine and for other experiments in the section.

(ix) *Bovine Lymphangitis vaccine*.—Vaccine sufficient for 33 animals was in stock at the commencement of the year. Three batches of this vaccine yielding 400 courses were manufactured during the year as against 319 courses of the previous year. The number of courses of vaccine issued to the field staff was 391 as against 334 of the previous year. There was a balance of 42 courses of vaccine at the end of the year under report.

(x) *Sheep-pox vaccine*.—There was a stock of 82,420 doses of the vaccine on hand at the beginning of the year. Four batches of Sheep-pox vaccine in freeze dried form yielding 111,300 doses were manufactured and 186,220 doses were reconstituted and issued to the field staff during the year as against 130,500 doses manufactured and 87,900 doses issued to the staff during the previous year. Eighty-two sheep were utilized for the manufacture of this product and for the various experiments connected with it.

(xi) *Brucella Abortus vaccine and antigens*.—The scheme for the production of Brucella Abortus vaccine and antigens at this Institute was continued for a further period of two years from 1st

October 1955 as per G.O. Ms. No. 2304, Agriculture, dated 26th September 1955. During the period under report, 16 brews of the vaccine comprising of 9,476 doses of 5 c.c. each were manufactured and tested. Of these, 8,596 doses were issued to the Veterinary Disease Investigation Officer (Cattle) and Veterinary Assistant Surgeon in charge of Brucella Eradication Scheme, Coimbatore. All the batches of the vaccine were tested for safety and potency before issue to the staff.

(xii) *Bacterin for Enterotoxaemia in sheep*.—During the year 39,720 doses of Cl. welchii anaculture using types B and D were manufactured as against 89,100 doses in 1954-55. Thirty-five thousand, four hundred and eighty-four doses were issued for use in the field as against 78,660 doses issued during the previous year. The results of vaccination are reported to be quite satisfactory and in many places the outbreaks are reported to have subsided after vaccination.

(xiii) *Fowl Cholera vaccine*.—There was an opening balance of 1,450 doses of the vaccine. One thousand, nine hundred and twenty-five doses were manufactured during the year under report as against 2,500 doses of the previous year. Eight fowls were used for testing the brews of the vaccine. One thousand ninety doses of the vaccine were issued to the field staff during the year as against 1,500 doses in the last year.

(xiv) *Ranikhet Disease vaccine*.—The manufacture and supply of this product in freeze dried form was continued during the year under report. The stock of the product on hand on 1st April 1955 was 367,400 doses. During the year under report, 25 brews of the vaccine consisting of 11,540 ampoules of 200 doses each, i.e., 2,308,000 doses were manufactured as against 1,777,200 doses during the previous year and 11,890 ampoules of 200 doses each (2,378,000 doses) were issued to the staff in Madras and Andhra States, Coorg, Travancore-Cochin and Hyderabad States as against 1,424,600 doses issued during the previous year. The balance of vaccine at the end of the year was 297,800 doses. Four hundred and twenty-three chicks were used for testing the vaccine and for various experiments in the section.

(xv) *Fowl-pox vaccine*.—The vaccine was prepared using the American strain of Fowl-pox vaccine virus, growing the virus on the chorio-allantoic membrane of developing chicks and freeze drying the membranes. The year opened with a balance of 21,700 doses of the vaccine and 2,300 doses of these were issued to the Veterinary Disease Investigation Officer (Poultry) and field staff for carrying out experimental vaccinations by them. One brew of the vaccine yielding 240 ampoules (24,000 doses) was manufactured and tested during the year. The vaccine is to be issued for field use soon after receipt of orders from the Director of Animal Husbandry regarding its release. The stock of vaccine on hand at the close of the year is 43,400 doses.

Serial number and name of parties.	Anti-rinder post vaccine.	Bull virus.	Goat virus.	Lyssle vaccine.	Hankhel disease vaccine.	Pigeon-pox vac. cine.	Black quarter vaccine.	Haemorrhagic Septicemia vaccine.	Bovine lymphatic virus vaccine.	Sheep-pox vaccine.	Normal saline.	Anti-anthrax serum.	Cholera vaccine.	Low vaccine.	Brucell & Abort us Vaccine and Injagen
(1)	Doses	C.C.	C.C.	Doses.	Doses.	Doses.	Doses.	Doses.	Coult.	Doses.	C.C.	E.S.	E.S.	C.C.	
10 Director of Husbandry. Tri-vandrum.	5,040	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
11 Project Executive Officer, Villavancode Community Project, Arathood.	..	..	..	..	20,000	..	..	1,020	..	..	..	..	..	..	..
12 Block Development Officer, (N.E.S. Block), Uzhavoor, Travancore-Cochin State.	..	..	..	..	600	..	..	..	..	..	..	..	..	..	..
13 Assistant Disease Investigation Officer, (Sheep and Goat) Central Wool Research Station, Pashulik, Rishikara, Dehra Dun.	..	..	..	..	..	..	..	..	..	500	..	..	..	..	..
14 Chief Municipal Veterinary Surgeon, Colombo.	..	..	..	..	..	..	1,020	..	..	..	..	..	..	..	1,000
15 Kanan Devan Mills Produce Company, Limited, Kunsaly Estate, (Travancore-Cochin Estate).	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10
16 Miscellaneous Parties in and outside Madras State.	..	..	..	..	15,600	400	..	150	5	..	..	..	..	..	..
17 Andhra State	15,840	..	..	7,32,050	1,310,000	42,050	935,074	1,089,084	167	36,540	..	80	340	..	..

(ii) *Schemes in Second Five-Year Plan.*—The following are the schemes proposed under the Second Five-Year Plan :—

(2) Scheme for the establishment of a laboratory for preparation of Foot-and-Mouth Disease vaccine.

33. *Miscellaneous.*—(i) The institute participated in the tenth Anniversary of Food and Agriculture Organization celebrated at Rajaji Hall, Madras, on 16th October 1955.

The research work carried out at the institute during the year has been detailed out in Chapter IX on 'Investigation and Research.'

CHAPTER V—LIVESTOCK.

Thus there were four livestock farms, one livestock research station, one sheep farm, one Poultry Research Station, one District Poultry Farm and 21 Poultry Demonstration centres in the State during the year of which 4 livestock farms and one sheep farm were opened during the first Five-Year Plan period. The details on location, species and breed of livestock maintained in these farms, etc., are given in Tables XI (a), (b), (c) and (d) annexed to this report..

1. CATTLE.

35. (a) Cattle development was carried out by scientific breeding in all the five livestock farms at Hosur (Salem), Koila (South Kanara), Thiruvazhamkunnu (Malabar), Pudukkottai (Tiruchirappalli) and Orathanad (Tanjore) which are intended chiefly for the supply of pedigree stock of various breeds of bulls according to the tract with a view to up-grade the local stock of cattle besides serving as demonstration centres on cattle rearing and fodder production on scientific and economic lines. A dairy was also run in all these farms.

(b) In general the breeding policy in all the farms is more or less the same (viz.) selective breeding with a view to keep up pedigree of various breeds and at the same time to improve the milk yielding capacity along with other qualities of the breeds for which they are noteworthy.

(c) In the dairies attached to these farms rational system of maintaining averages and systematised milk recording were adopted.

(d) During the year under report, the work in all these farms was found to be satisfactory. The percentage of mortality was kept low in all the farms and even less than in previous year in most of the farms. The farms were not only in a position to issue good number of pedigree bulls for breeding but also they were having a good stock of young bulls at the end of the year for further issue in the next year. The production of milk in all the farms was also satisfactory with no appreciable decrease in any of the farms.

The progress in each of the farms are given in detail in the following pages :—

(i) *Livestock Research Station, Hosur Cattle Farm P.O., Salem district.*

36. (a) This is mainly a cattle-breeding station with a dairy attached along with a sheep-breeding unit and a poultry farm. This is one of the biggest farms in East which was an army remount depot for nearly 96 years till 1st September 1934 when it was handed over to the Agriculture department of our State from whom it was transferred to the Animal Husbandry department, on 1st April 1938. This farm has now grown to be a centre of advanced scientific activities in breeding, feeding and management of all classes of livestock.

(b) Various breeds of cattle, sheep and poultry are maintained here as detailed below :—

(i) Cattles.	(ii) Sheep.	(iii) Poultry.
Kangayam.	Bellary.	White Leghorn.
Scindhi.	Bikanir.	Rhode Island Red.
Hallikar.	Mandya.	Black Minorca.
Gir.		

(c) The chief object of the farm is to raise a pure stock of pedigreed stud bulls for distribution in this State for up-grading the local stock besides being a practical field of advanced Animal Husbandry activities for both the public and to the students and workers in this science.

(d) During the year under report this farm had the distinction of receiving the following distinguished persons of both of our own and foreign countries :—

(1) Sri A. P. Jain, Union Minister for Food and Agriculture, Government of India, New Delhi.

(2) Sri M. V. Krishnappa, Union Deputy Minister for Food and Agriculture, New Delhi.

(3) Shri Sree Prakasa, the Governor of Madras.

(4) The Maharaja of Bhavanagar, Ex-Governor of Madras.

(5) Sri C. Subramaniam, Finance and Education Minister, Government of Madras.

(6) Sri A. B. Shetty, Minister for Health, Government of Madras.

(7) Sri Naganna Gouda, Minister for Agriculture, Mysore.

(8) Sri N. Nallasenapathi Sarkaraimandradiar, M.L.C., Pattagar of Palayakottai.

(9) Sri P. L. Nanda, Animal Husbandry Commissioner, Government of India, New Delhi.

(10) Sri Bede, Chief Commissioner of Coorg State.

(11) R. A. Clarke, Chief Officer, Animal Research Station, Newzealand.

(12) The Tennessee University Survey Team, U.S.A.

(e) This research station provided for practical training in various sections for the students of the B.V.Sc. Course of Madras University and of Stockmen Course of this department during this year. Further this station formed one of the centres of the educational tours for the students and officers of the following institutions :—

(1) Students of advanced course in Animal Husbandry and students of Poultry Husbandry Courses with the staff from the Indian Veterinary Research Institute, Mukteswar.

(2) Students and staff of Agricultural College, Coimbatore.

(3) Students and staff of the S.V.K. High School, Ramana-thapuram.

(4) Grama Sevak and staff of Gandhi Ashramam, T. Kallupatti.

(5) Grama Sevak and staff of National Extension Service Block, Koilpatti.

(f) *Cattle population in the farms.*—(i) The total strength of cattle including buffaloes and horses were 1,110 at the beginning of the year as against 1,368 of last year. During the year 269 animals were added and 390 were disposed of as detailed below—

Additions—		Disposals—	
By births ..	256	By deaths	43
By purchases ..	5	By sales for breeding ..	41
By receipts ..	8	By sales for experiment to West Bengal.	8
	269	By transfers external ..	118
		By loans	18
		By other sales (auctions) ..	162
			390

(ii) Thus the total strength of the cattle at the close of the year stood at 989 as against 1,110 of the previous year. The class-war strength as on 31st March 1956 is detailed below—

Breed.	Breeding bulls.	Young bulls.	Cows.	Heifers.	Young stock.		Work cattle.	Total.
					Bull calves.	Heifer calves.		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Scindhi ..	7	86	130	88	50	45	15	421
Kangayam ..	5	83	106	69	41	45	20	378
Gir ..	2	20	28	26	9	10	3	98
Cross-breed ..	..	14	19	8	5	6	11	63
Hallikar ..	3	..	..	..	..	..	13	16
Tharparkar ..	..	..	..	..	..	..	4	4
Murrah Buffaloes ..	1	1	..	..	..	..	..	2
Horses ..	3	..	2	2	..	..	..	7
	(stallion)		(mare)	(fillies)				
Total ..	21	204	285	193	105	106	75	989

The reduction in strength compared to previous year was due to the issue of large number of bulls for stud purposes on sale, loan and free distribution and was also due to systematic culling of uneconomical and unthrifty animals with a view to avoid unnecessary expenditure in maintaining them and to have an indirect effect on the improvement of the rest of the stock in their performance. As a special feature this year, twelve bulls to West Bengal Government and one stallion each to Pattagar of Palayakottai and Zamindar of Neikarapatti were given on loan on an experimental measure in the livestock improvement work. Besides this the West Bengal Government have purchased eight animals for their experimental purposes.

(g) *Dairy.*—There has been a general improvement in this section by way of increase in the total milk yield, and average milk yield for the total herd of cows. It is a favourable sign for the future increase of milk more and more and it is the result of the economic method of culling adopted to dispose of the unthrifty and

uneconomic producers and the increased production of fodder during the year. This could be seen from a study of the following table :—

	1955-56. LB.	1954-55. LB.
Total average herd of cows ..	287	201.3
Cows remained in milk ..	172.1	168.3
Total yield of milk ..	7,11,181½	6,43,694½
Daily individual average over the cows in milk.	11.3	10.5
Daily individual average over the whole herd.	6.8	5.9

The milk of various herds of the farm has also registered an increase in all as could be visualized from the following statement :—

Breed.	Average number of cows in the herd.	Average number of cows in milk.	Total milk yield during the period in lb.	Daily average yield per cow during 1955-56 in lb.		Daily average yield per cow during 1954-55 in lb.	
				for the cows in milk.	for the cows in the herd.	for the cows in milk.	for the cows in the herd.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Scindhi ..	129.7	82.8	3,97,026	13.1	8.4	12.9	7.6
Kangayam ..	110.8	60.3	1,54,852½	7	3.8	6.7	3.5
Cross-breed ..	13.6	12.1	63,034½	14.2	9.3	12.1	8.3
Gir ..	28	17	95,238½	15.3	9.3	13.4	7

Details of good performance in various herds have been furnished below—

Breed.	Cow number.	Milk yield in lb.	Number of days in milk.	Daily average for lactation.
(1)	(2)	(3)	(4)	(5)
Scindhi ..	291	9,047.0	432	20.9
Do. ..	309	9,000.8	289	31.1
Do. ..	304	7,592.8	398	19.1
Do. ..	229	7,058.8	365	19.3
Do. ..	215	7,259.8	367	19.8
Do. ..	228	6,991.0	345	20.2
Do. ..	310	6,947.8	330	21.1
Kangayam ..	720	3,689.0	270	13.7
Do. ..	838	3,420.8	275	12.4
Do. ..	536	3,559.8	313	11.4
Do. ..	497	2,908.0	271	10.7
Do. ..	670	2,936.8	310	9.5
Gir ..	23	9,536.8	396	24.1
Do. ..	21	8,749.8	334	25.2
Cross-breed ..	451	11,348.0	374	30.3

Besides the culling adopted as one of the measures to improve the production in the dairy, efforts were taken to reduce the long ancestrus period in cows, to remove temporary sterility and to induce heifers to early maturity. In this regard, cows which do not come to heat within 120 days of calving were examined and proper treatment were adopted to induce heat in these animals. It

was observed that mere massage of genitalia including the ovaries was successful in most of the cases. Cows which were served, were examined for pregnancy and temporary sterility. It was observed that non-fertility was mostly due to Persistent Corpualuteum and that the service even on the fourth day of the removal of the Persistent Corpualuteum was successful. Heifers of two years and over are taken out and fed separately and massage of genitalia, if need be, is done with a view to induce the first heat in them earlier. In this regard heifers of high yielders were taken particular care of with a view to get a calf within three years and thereby maximum number of cows within the life-span of the cow.

(h) *Incidence of disease in the farm*—(i) *Contagious and infectious diseases*: (Cattle)—(1) *Rinderpest*.—The farm was free from rinderpest this year also. However, routine prophylactic measure against rinderpest was enforced by serum simultaneous inoculations.

(2) *Blackquarter*.—There was only one outbreak during the year with a loss of one animal only. As a preventive measure, 1,032 animals were protected against this disease.

(3) *Hæmorrhagic septicæmia*.—There was no incidence of this disease this year also.

(4) *Foot-and-mouth*.—There were two outbreaks during the year, one occurring during April 1955 and the other in March 1956. In the first outbreak 1,105 cattle and 12 sheep were affected resulting in the loss of 9 calves only. The second outbreak had affected 78 heifers so far and had not subsided till the end of March 1956.

(5) *Anthrax*.—There was no incidence of the disease during this year also.

(6) *Contagious abortion*.—The farm was free from this disease this year also.

(7) *Mastitis*.—All the cows in milk were periodically tested for mastitis with mastitis detection cards. As a result of which, 47 cases were found affected. Forty-five of them were treated successfully and the rest two were under treatment.

(8) *Johne's disease*.—There were 19 attacks during the year of which 3 proved fatal. Eight of them were confirmed by the examination of bowl washing, 3 by post-mortem examination and the rest by the clinical symptoms. The survived 16 animals were disposed of, to avert the spread of infection by them.

(9) *Coccidiosis*.—There were nine attacks during the year among young calves only and all of them were treated successfully with sulphamezathine.

(10) *Mange*.—There were 12 cases during the year mostly among calves. All of them were due to Demode infection and all of them were treated successfully.

(11) *Ringworm*.—Young calves in the dairy between the ages of 1 to 4 months were affected. Ninety-five animals were affected during the year and all of them were treated successfully.

(12) *Ephemeral fever*.—Sixty-seven bovines were affected by this disease with no mortality. The disease was controlled by routine treatment.

(13) *Helminthiasis*.—Twenty-three cattle were infected with worms of strongyle family.

(14) *Surra*.—Nil.

(15) *Piraplasmosis*.—Nil.

(16) *Theileriasis*.—Nil.

(17) *Tetanus*.—Nil.

(18) *Rabies*.—Nil.

(19) *Cancer*.—Nil.

(20) *Naval ill*.—There were only 10 cases during the year with no mortality.

(ii) *Contagious and infectious diseases (sheep)*—(1) *Coccidiosis*.—There was only one case in a lamb which was treated successfully.

(2) *Helminthiasis*.—Several animals of the flock were found to show infection of strongyle species on examination of their faeces. Routine dosing of sheep with phonovis every two months were undertaken to eradicate this infection.

(iii) *Other diseases (cattle)*—(1) *Abortion*.—There were eight cases of abortion and they were all negative for Brucellosis.

(2) *Retention of placenta*.—There were nine cases during the year with no secondary complication such as metritis.

(i) *Veterinary Hospital*.—The hospital attached to this farm had registered a total of 1,072 cases admitted for treatment as against 1,040 during the last year with an average daily attendance of 49.87 as against 46.58 of last year.

(j) *Mortality*.—There were 43 deaths during the year working out a percentage of 3.1 as against 1.6 in the last year.

(k) *Laboratory work*.—(i) During the year 846 specimens were examined as against 748 of last year in all, at the Veterinary Hospital and the clinical laboratory attached to the farm, Madras Veterinary College and Institute of Veterinary Preventive Medicine, Ranipet.

(ii) In order to overcome the delay in diagnosis, treatment and control of diseases for want of laboratory facilities at hand, a clinical laboratory was opened in this farm at the end of last year which was sanctioned in G.O. No. 1035, Agriculture, dated 3rd April 1954, which continued during this year for exclusive use of the farm and Hosur taluk. During the year under report, a total

number of 1,284 specimens of various kinds were examined at this laboratory as detailed below:—

Kind of specimen.	From cattle.			From sheep.			From Poultry.			Total.
	Positive.	Negative.	Total.	Positive.	Negative.	Total.	Positive.	Negative.	Total.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Blood smear ..	6	164	170	4	36	40	8	28	36	246
Faeces ..	69	358	425	313	131	444	14	56	70	939
Scrapins ..	8	..	8	..	..	..	..	..	..	8
Urine ..	..	46	46	..	..	..	..	..	..	46
Milk samples ..	1	6	7	..	..	..	..	..	..	7
Bowel washings..	6	31	37	..	..	..	..	..	..	37
Others ..	..	1	1	..	..	..	..	..	..	1
	90	604	694	317	167	484	22	84	106	1,284

(iii) *Biological tests.*—(1) Foetal stomach contents from one aborted foetus was inoculated into guinea pigs and sent to the Institute of Veterinary Preventive Medicine, Ranipet, for diagnosis of Brucellosis. The result was negative for Brucellosis.

(2) *Johnin Test.*—As John's disease was found to be prevailing every year, as a step to eradicate the disease, all the animals in the farm were tested with synthetic Johnin to locate positive cases in their earlier stages and to take remedial measures accordingly. In all 793 cattle and 188 sheep were tested of which only two cattle were found to be suspicious reactors. Experimental vaccination on 12 calves of one to two months age, was done at the farm with Vallee Rinjards vaccine by the Superintendent, Institute of Veterinary Preventive Medicine, with a view to study the feasibility of adopting this prophylactic vaccination among young stock for total eradication of the disease in the future.

(i) *Sterility work done in the farm.*—The work on diagnosis and treatment of sterility was continued this year also on the lines suggested by the Food and Agriculture Organization Expert during his visit to the farm last year. The cows manifesting the following conditions were examined:—

(1) Cows which have been served are examined for pregnancy.

(2) Cows which have prolonged anoestrous period, if they do not come to heat within three months after calving are examined.

(3) Heifers which are over 2½ years and which have not taken the bull are also examined.

The results of above examination are detailed below—

Sindhi herd.

(1) Persistent Corpus Luteum ..	60
(2) Anoestrous cases ..	9
(3) Follicles ..	10

Kangayam herd.

(1) Persistent Corpus Luteum ..	43
(2) Anoestrous cases ..	1
(3) Follicles ..	7
(4) Vaginitis ..	1
(5) Cystic ovaries ..	1

Gir herd.

(1) Persistent Corpus Luteum ..	16
(2) Anoestrous cases ..	Nil.
(3) Follicles ..	9
(4) Infantile gonitis ..	3

Cross-bred herd.

(1) Persistent Corpus Luteum ..	6
(2) Follicle ..	Nil.
(3) Anoestrous cases ..	1
(4) Vaginitis ..	1

All the above cases were given various treatment according to the conditions with successful results in most of them.

(m) *General.*—(i) Soil conservation work was continued during the year and contour bunds were laid out for every 3 feet fall in a total area of 55 acres. The special scheme sanctioned in G.O. Ms. No. 1780, Agriculture, dated 13th July 1955, for carrying out preliminary and detailed survey of the Animal Husbandry Farms at Hosur, Koila and Thiruvazhamkunnu for proposing soil conservation measures for increasing the fodder production on a sustained basis, was implemented during the year. Topographical survey was done in 400 acres. The scheme will be continued in next year to carry out further work with the purchase of some more instruments for the purpose.

(ii) Tree-planting was another item of work attended to during the year. One thousand three hundred and sixty sapplings were planted during the year as detailed below:—

(1) Luceauna glanca ..	700
(2) Erytherena Indica ..	60
(3) Agathi ..	600

In addition, 2,000 sapplings of item 1 above were also planted as live-fencing.

(iii) A radio centre and first-aid medical centre were run for the benefit of the farm staff inclusive of labourers. During the year 3,207 patients were treated with a daily average attendance of 42.33 at the medical centre.

(iv) *Apiculture.*—There were 8 bee colonies during the year of which three got deserted. A total quantity of 21½ lb. of honey was produced from these colonies.

(n) *Receipts and charges.*—A total amount of Rs. 98,057-10-9 was realized through the sale of cattle and cattle products during the year as against an expenditure of Rs. 1,86,803-6-6 incurred on maintenance of cattle.

A total quantity of 414,305½ lb. of milk was received during the year. Two hundred and sixteen thousand eight hundred and seventy-nine and a half pounds of milk was sold for consumption and the balance was used for feeding of calves and poultry and for conversion and sale as butter and ghee. Nine hundred and ninety-eight pounds, 14 ounces of butter and 3,370½ lb. of ghee were sold during the year.

During the year 124 bulls were issued from the farm as against 110 bulls in the last year.

At the end of the year there were 204 young bulls as against 250 bulls in the last year—

Scindhi ..	..	..	..	..	..	86
Kangayam ..	..	..	..	..	..	88
Gir ..	..	..	..	..	..	20
Cross-bred ..	..	..	..	..	..	14
Murrah ..	..	..	..	..	..	1
Total ..						204

(ii) District Livestock Farm, Koila, South Kanara district.

37. (a) This farm was opened in February 1950 in Puttur taluk of South Kanara district at a distance of 38 miles from Mangalore. The objects of this farm are (i) to supply pedigree stock of cattle and poultry to the district with a view to upgrade the local stock and (ii) to serve as a demonstration centre in the district for the advanced scientific methods in breeding, feeding and management of livestock.

Scindhi and Gir breeds of cattle and Murrah and Dharwar breeds of buffaloes are maintained in this farm.

(b) Cattle population of the farm.—The total strength of the farm on 1st April 1955 was 306 as against 286 in the last year. There were 92 additions and 77 disposals during the year as detailed below :—

Additions—				Disposals—			
By birth ..	..	91		By death ..	..	27	
By transfer ..	..	1		By sale for breeding ..	..	10	
		92		By other sales ..	..	40	
						77	

Thus there were 321 animals at the end of the year as against 306 in the last year. The increase in strength is due to the number of births during the year. The classwar strength of animals is detailed below :—

Breed.	Cows.	Heifers.	Young bulls.	Breeding bulls.	Bull calves.	Heifer calves.	Work cattle.	Total.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Murrah ..	60	28	21	1	20	20	..	150
Dharwar ..	6	3	..	1	1	2	..	13
Scindhi ..	14	17	10	3	5	3	..	52
Gir ..	3	4	1	1	2	1	..	12
Local ..	29	20	6	..	14	8	..	77
Hallikar ..	..	..	..	..	..	..	17	17
Total ..	112	72	38	6	42	34	17	321

(c) Dairy.—Out of a total number of 112.5 cows in the herd during the year 66.5 cows were in milk and yielded 248,884.5 lb. of milk as against 259,667.0 lb. in the last year. Daily individual average milk yield per cow over the cows in milk and over the cows in the herd was 10.3 lb. and 6.1 lb. respectively as against 10.6 and 6.8 lb. respectively in the last year. The slight decrease in the milk yield was due to the fact that the average number of cows in milk was less than the previous year and that most of the animals in milk in Scindhi and Gir herd were old being in their fourth to seventh lactations. Breedwar yield particulars are given below :—

Breed.	Average number of cows in the herd 1955-56.	Average number of cows in milk, 1955-56.	Total milk yield during the year, 1955-56.	1955-56 Daily average yield in lb.		1954-55. Daily average yield in lb.	
				for cows in milk.	for cows in the herd.	for cows in milk.	for cows in the herd.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1 Murrah ..	57.1	36.7	1,72,200.0	13.0	8.2	13.1	8.7
2 Dharwar ..	6	2.3	7,495.5	9.1	3.5	8.4	3.9
3 Scindhi ..	18.2	10.6	47,297.0	11.8	7.0	13.3	8.6
4 Gir ..	3.6	2.5	11,712.5	12.7	8.7	13.0	6.8
5 Local ..	27.6	14.4	10,179.5	1.9	1.0	2.2	1.4

Remarks—

- (1) The variation between the average yields of the two adjacent years is negligible.
- (2) The increase in the average yield is due to majority of the animals in milk during the year having been probably in the best period of their life.
- (3) The decline in the average yield is due to the fact that the herd consisted mostly 63.6 per cent of old animals.
- (4) The decrease in the average yield is due to the fact that all the animals in this herd are old ones.
- (5) The decline in the milk yield is due to majority of the animals in the herd being past their best yielding period.

Details on some of the good performers are given below :—

Breed.	Cow number.	Milk yield in lb.	Number of days in milk.	Daily average for lactations in lb.
Murrah ..	28	5,467.5	318	17.2
Do. ..	59	4,710.5	269	17.5
Scindhi ..	490	5,800.0	313	18.5
Do. ..	487	5,192.0	300	17.3
Do. ..	495	5,972.0	345	17.3

(d) Incidence of contagious and infectious diseases.—There was no case of contagious or infectious disease in the farm during the year. Preventive inoculation against Rinderpest was carried out among 210 animals during the year. In the Veterinary Dispensary attached to the farm, 71 cases were treated during the year as against 193 cases in last year.

(e) Mortality.—There were 27 deaths during the year working out a percentage of 6.8 as against 9.2 in the previous year. The death rate were reduced among calves despite the inadequacy of accommodation for housing calves. The deaths were due to accidental causes like extreme adverse climatic conditions that prevailed in the West Coast during the year.

(f) *Sterility work done.*—During the year 76 cows and buffaloes were examined and treated for ancestrus conditions, the details of which are given below :—

Breed.	(1)	(2)	Nature of treatment.			Number successfully treated.		
			Enucleation of persistent Corpus luteum.	Ovarian massage.	Rupture of Cysts in ovary.	Enucleation of persistent Corpus luteum.	Ovarian massage.	Rupture of Cysts in ovary.
Murrah	..	26	11	15	..	9	4	..
Dharwar	..	5	4	1	..	4	1	..
Scindhi	..	7	4	3	..	4	3	..
Gir	..	20	10	10	..	10	8	..
Local	..	18	14	3	1	14	..	..
Total	..	76	43	32	1	41	16	..

(g) *Clinical Laboratory.*—A clinical laboratory to the benefit of the farm and the South Kanara district was opened on 1st October 1955 in the farm. The laboratory was equipped during the year and 78 specimens of dung and blood smears were examined for diagnostic purposes.

(h) *General.*—(i) A first-aid medical centre and a radio centre were continued to function during the year. Five hundred and eighty-five patients were treated at the medical centre as against 501 in the last year.

(ii) A radio centre continued to function during the year for the benefit of farm staff and labourers.

(iii) *Apiculture.*—Three bee colonies were maintained during the year and 1½ lb. of honey was collected.

(iv) *Pisciculture.*—African fish called 'Tilapia mossambica' received from Fisheries Department were stocked in a well during the year.

(v) *Tree-planting.*—Six thousand one hundred and twenty-five sapplings as detailed below were planted during the year :—

Guova	..	..	..	..	..	25
Casuarina	..	..	..	..	..	100
Gold Mohur	..	..	..	..	..	1,000
Glyricidia	..	..	..	..	..	2,000
Ficus Species	..	..	..	..	..	3,000
						6,125

(i) *Receipts and Charges.*—A total amount of Rs. 65,275-6-6 was realized in the farm through the sale of cattle and cattle products during the year. The total expenditure on maintenance of cattle was Rs. 76,101-1-1.

Out of a total quantity of 205,198 lb. of milk during the year, 187,845½ lb. were sold and the rest were used for feeding of calves and poultry and for conversion into ghee. Three hundred and forty-five pounds of ghee was sold during the year.

The farm issued 10 bulls during the year as against 18 in the last year. At the end of the year there were 32 young bulls as detailed below as against 39 in the last year :—

Murrah	..	..	..	..	..	21
Scindhi	..	..	..	..	..	10
Gir	..	..	..	..	..	1
Total	..	..	..	..	..	32

(iii) *District Livestock Farm, Malabar, Thiruvazhamkunnu, Malabar district.*

38. (a) This farm was opened in 1950-51 at the foot of Western Ghats in the village of Thiruvazhamkunnu, Walluvanad taluk, with a view—

(i) to maintain pedigree stock of Scindhi breed of cattle and Murrah breed of buffaloes;

(ii) to supply pedigree stud bulls of acclimatized strain to the area for the improvement of local stock;

(iii) to maintain a herd of Dharwar breed of buffaloes to study their milk yield potential;

(iv) to maintain Malabar goats;

(v) to issue pedigree bucks to develop the local stock of goats; and

(vi) to serve as a demonstration centre on practical animal husbandry on modern lines in all its aspects, viz., breeding, feeding and management.

(b) *Cattle population of the farm.*—At the beginning of the year there were 131 animals as against 126 last year. During the year 51 animals were received and 21 were disposed of as detailed below :—

Additions.		Disposals.	
By births	37	By death	7
Transfer from other stations	14	By transfer to other stations for breeding	7
		By sale for breeding	2
		By auction sale	5
Total	51	Total	21

Thus at the end of the year the strength of livestock stood at 161 as against 131 of last year. The increase in strength was due to the more number of births during the year.

The herdwar particulars on total strength are detailed below :—

Breed.	Breeding bulls.	Young bulls.	Cows.	Heifers.	Bull calves.	Heifer calves.	Work cattle.	Total.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Scindhi	2	8	9	2	8	..	1	30
Murrah	2	19	32	14	11	9	..	87
Dharwar	1	2	6	3	2	2	..	16
Gir	..	2	..	..	..	..	..	2

Breed.	Breeding bulls.	Young bulls.	Cows.	Heifers.	Bull calves.	Heifer calves.	Work cattle.	Total.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Angayam ..	..	..	..	..	..	..	20	20
Halikar ..	..	..	..	..	..	..	4	4
Non-descript (local) ..	..	..	..	..	..	..	2	2
Total ..	5	31	47	19	21	11	27	161

(c) *Dairy*.—During the year, the total production of milk in the farm was 138,166·7 lb. from an average number of 26·1 cows in milk out of a herd of 43·1 animals in the herd on an average. The daily individual average over the cows in milk and over the cows in the herd worked out to 14·5 lb. and 8·8 lb. respectively as against 11 lb. and 7·1 lb. in the previous year. Thus in this year an increase in all aspects, viz., cows in the herd, cows in milk and daily individual average had been registered on account of favourable seasonal conditions and most of the animals in milk being in their second lactations.

The milk yield of herds (breedwar) in the farm are detailed below :—

Breed.	Average number of cows in the herd.	Average number of cows in milk.	Total yield of milk in lb.	Daily average yield per cow.			
				1955-56.		1954-55.	
				For cows in milk.	For cows in the herd.	For cows in milk.	For cows in the herd.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Scindhi ..	7·2	5·3	27,503·0	14·2	10·4	11·9	7·2
Murrah ..	30·1	17·3	98,462·2	15·6	8·9	12·0	7·5
Dharwar ..	5·8	3·5	12,201·5	9·5	5·7	9·9	*6·5

* 57·1 per cent of animals started their production during the end of the year. Hence the decrease.

Details on some of the best yielders (breedwar) are furnished below :—

Serial number and breed.	Number of animals.	Total yield during the year.	Daily average for the lactation.	Number of days in milk.
(1)	(2)	(3)	(4)	(5)
		LB.		
1 Scindhi ..	523	5,761·0	21·2	272
2 Do. ..	527	3,750·5	17·6	213
3 Murrah ..	2	4,247·0	20·3	209
4 Do. ..	11	3,451·5	22·3	155
5 Do. ..	23	5,001·0	16·9	296
6 Dharwar ..	10	2,445·5	11·7	209
7 Do. ..	12	2,007·5	9·4	213

(d) *Incidence of diseases in the farm*.—There was no incidence of either contagious or infectious disease in the farm during the year. As a preventive measure 127 animals against Hæmorrhagic Septicæmia and 107 animals against Blackquarter were protected.

In the Veterinary Hospital attached to the farm 594 animals were treated during the year as against 391 during the previous year. Nine cases of Mastitis were treated successfully.

(e) *Mortality in the farm*.—There were 9 deaths among buffaloes, 5 of which were young calves as against no deaths in previous year. The deaths were due to accidental causes like abortion, trampling and extremes of climate during the year.

(f) *Sterility work done*.—Fourteen buffaloes (12 Murrah, 2 Dharwar) and 1 Scindhi cow were found to be sterile on account of persistent *corpus luteum*. All of them except two buffaloes were treated successfully.

(g) *General*.—(i) Soil conservation by terracing and contour bunding was undertaken during the year. Three bulldozers were made use of and 31·66 acres of land was reclaimed, terraced and bunded. The bunds were strengthened by planting guinea grass slips.

(ii) Tree-planting along the avenues was undertaken during the year and in all 1,024 were planted as shown below :—

Teak seedlings	...	...	...	1,000
Mango grafts	...	...	...	24

(h) *Receipts and charges*.—During the year, the total receipt of revenue through the sale of cattle and cattle products was Rs. 19,580-4-3, and the total expenditure on maintenance of cattle during the year was Rs. 39,204-1-3. Out of a total quantity of 110,315·0 lb. of milk received during the year, 103,174·5 lb. of milk were sold and the balance fed to calves. Nine bulls were issued from the farm during the year. There were 31 young bulls at the end of the year as against 17 in the last year as detailed below :—

Scindhi—8.

Gir—2.

Dharwar—2.

Murrah—19.

(iv) *District Livestock Farm, Pudukkottai, Tiruchirappalli district.*

39. (a) This farm which was formerly the dairy farm for His Highness the Maharaja of Pudukkottai, was taken over in 1951-52 by this department on the merger of this State with the Madras State, is chiefly intended (i) to meet the local demand for pedigreed stock, (ii) to improve the local stock of the district, (iii) to serve as a demonstration centre for the district on practical Animal Husbandry on modern lines, and (iv) to raise a dairy to meet the local demand for milk.

The following breeds of cattle were maintained in the farm during the year :—

Scindhi, Kangayam, Sahiwal, Cross-Bred and Murrah.

(b) *Cattle population of the farm.*—The total strength of the farm on 1st April 1955 was 154 as against 143 in last year. There were 49 additions and 35 disposals during the year as detailed below :—

Additions.		Disposals.	
By births	36	By deaths	4
By transfer	13	By transfer to other institu-	
		tions for breeding	11
		By auction sales	20
Total	49	Total	35

Thus the total strength of cattle at the close of the year stood at 168 as against 154 in last year. The increase in strength was due to more number of animals added by birth of calves and by receipt from other stations. The class-wise strength of animals are detailed below :—

Breed.	Breeding bulls.	Young bulls.	Cows.	Heifers.	Calves.	Work cattle.	Total.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Scindhi	7	5	18	15	12	..	57
Sahiwal	..	..	1	..	..	..	1
Kangayam	7	11	29	18	18	9	92
Cross-bred	..	3	3	1	3	..	10
is	3	..	..	..	..	..	3
Murrah	5	..	..	..	..	..	5
Total	22	19	51	34	33	9	168

(c) *Dairy.*—During the year on an average 31.6 cows remained in milk out of a total of 53.3 cows in the herd, yielding a total quantity of 89,092.5 lb. of milk as against 84,471.5 lb. in last year yielded by 26 cows in milk out of a total of 42.8 cows in the herd. Though there has been increase in the total yield and total number of cows in milk and in herd, the average yield was on the decrease to a slight extent as detailed below, on account of the fact that most of the animals in milk were in their first lactation; being first calves during the year and the rest were all either old or poor yielders :—

	1953-56.	1954-55.
Daily average yield per cow over the cows in milk of the farm	7.5	8.9
Daily average yield per cow over the cows in the herds of the farm	4.6	5.4

The milk yield of various herds of the farm are given below :—

Breed.	Average number of cows in the herd.	Average number of cows in milk.	Total milk yield during the period in lb.	Daily average yield per cow.			
				During 1953-56.		During 1954-55.	
				For cows in milk.	For cows in the herd.	For cows in milk.	For cows in the herd.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1 Scindhi *	18.2	12.8	43,321.0	9.3	6.5	11.3	7.2
2 Sahiwal †	1.9	1.6	3,869.0	7.0	5.7	10.3	3.6
3 Kangayam ‡	28.7	14.1	28,959.0	5.7	2.8	6.6	4.0
4 Cross-bred	4.5	3.1	12,943.5	11.1	7.9	11.3	7.3

Remarks.—(*) Most of the animals were in their first lactation.

(†) Animals were old.

(‡) Some of the animals were in their first lactation and some were poor yielders.

Details of some of the good performers in each herd are given below :—

Serial number and breed number.	Milk yield in lb.	Daily average lactation.	Number of days in milk.
(1)	(2)	(3)	(4)
Scindhi—			
1 Scindhi 68	4,593.5	15.3	300
2 Do. 535	3,412.5	11.3	302
3 Do. 569	3,070.0	9.6	292
Kangayam—			
1 Kangayam 816	2,513.0	7.4	340
2 Do. 839	2,784.5	7.9	384
3 Do. 779	2,210.5	7.6	292
4 Do. 878	2,011.5	6.7	300
5 Do. 837	2,023.0	8.3	245
Cross-bred—			
1 Cross-bred 44	5,877.5	19.3	300
2 Do. 46	3,235.0	13.0	238

(d) *Incidence of diseases in the farm.*—(i) Contagious and infectious diseases—

(1) *Rinderpest.*—Nil. One hundred and nineteen animals were protected with freeze dried vaccine as a prophylactic measure.

(2) *Blackquarter.*—Nil. One hundred and sixty-seven animals were inoculated against this disease as a prophylactic measure.

(3) *Hæmorrhagic Septicæmia.*—Nil. One hundred and sixty-seven animals were inoculated against this disease as a prophylactic measure.

(4) *John's disease.*—Two animals were confirmed as positive for this disease on examination of their bowel washings. They were disposed of with a view to avert the further risk of spread to others through them.

(5) *Tuberculosis.*—One cow which gave positive reaction to double intradermal test was destroyed.

(6) *Contagious abortions.*—One cow, declared suspicious for Brucellosis, was kept under isolation,

(7) *Surrai*.—There were six animals affected resulting in one death the rest surviving the attack on account of the treatment given with Antrycide. The farm stock were all given prophylactic treatment both by parenteral route and external application with Antrycide and Gammaxane respectively.

(8) *Mange*.—There were 27 calves affected with this disease and all of them were treated successfully.

(ii) *Other diseases*—(1) *Abortion*.—There were twelve abortions during the year out of which one was declared suspicious for Brucellosis.

(2) *Retention of Placenta*.—There were three cases during the year.

(e) *Veterinary hospital*.—The Veterinary Hospital at Pudukkottai situated nearby the farm was serving the needs of this farm.

(f) *Mortality in the farm*.—During the year only four animals (2.4 per cent) died as against six (3.9 per cent) in the previous year.

(g) *Clinical laboratory*.—A clinical laboratory was started in the farm during the end of the year, for the use of this farm as well as to the field staff of Tiruchirappalli district and was being equipped with necessary materials

Fifty-six blood-smears were examined during the year.

In addition to the above, the following specimens were sent to Madras Veterinary College and Institute of Veterinary Preventive Medicine for confirmation :—

(1) Sterile swab	..	..	..	..	1
(2) Blood smears	..	..	..	..	163
(3) Stomach contents	..	..	..	..	5
(4) Sera	..	..	..	..	40
(5) Scrappings	..	..	..	..	9

(h) *Sterility work done in the farm*.—Six cows were treated for sterility during the year as detailed below :—

Breed.	Disease condition.	Number treated.
Scindhi	Endometritis	2
Kangayam	Do.	4

(i) *General*.—Apiculture was undertaken during the year. Three bee-hive boxes were maintained which yielded 1 lb. of honey. On account of cyclone all the colonies were disturbed, and only one colony was revived during the year.

(j) *Receipts and charges*.—The total revenue received in the farm during the year by way of sale of cattle and dairy product (viz.), milk was Rs. 14,340-13-3. The total expenditure incurred on maintenance of cattle during the year was Rs. 40,295-9-3.

Out of a total quantity of 64,166-0 lb. of milk was received during the year 57,391 $\frac{3}{4}$ lb. were sold and the remaining quantity was fed to calves.

The farm issued ten bulls during the year as against seven in the last year. There were 19 bulls at the end of the year as against 26 in the last year, as detailed below :—

Scindhi	5
Kangayam	11
Cross-bred	3
Total	19

(v) *District Livestock Farm, Orathanad, Tanjore district.*

40. This farm situated at Orathanad, 14 miles from Tanjore, was taken over by this department on 16th June 1954 with a view to improve the local cattle in respect of pedigree and milch capacity. Scindhi, Umblacherry, Kangayam and Murrah breeds of cattle are maintained in this farm.

(a) *Cattle population of the farm*.—The total strength of the farm on 1st April 1955 was 160 as against 21 last year. There were 104 additions and 22 disposals during the year as detailed below :—

Additions.			Disposals.		
By births	43	By deaths	10		
„ transfers	1	„ transfers	10		
		„ auction	2		
Total	104	Total	22		

Thus the total strength of cattle at the end of the year stood at 242 as against 160 in last year. The increase was due to purchase of Murrah buffaloes and transfer of bulls from other farms. The classwar strength of animals are detailed below :—

Breed.	(1)	(2)	Heifers.	Young bulls.	Stud bulls.	Bull calves.	Heifer calves.	Work cattle.	Grand total.
Scindhi	21	7	10	16	8	9	..	71	
Umblacherry	20	27	9	2	7	9	8	82	
Murrah	28	8	7	3	6	8	..	60	
Kangayam	..	..	14	2	..	..	12	28	
Jersey	..	..	..	1	..	..	..	1	
Total	69	42	40	24	21	26	20	242	

(b) *Dairy*.—On an average there were 35.9 cows in the herd of which 20.6 remained in milk. There was a total yield of 62,458.0 lb. of milk working at an individual daily average yield of 7.9 lb. for cows in milk and 4.7 lb. for the cows in the herd as against 8.3 lb. and 4.3 lb. respectively in the last year. The slight decrease in daily average milk yield was due to some of the cows and buffaloes having been in their advanced stage of lactation during the latter part of the year. The milk yield of various herds are given below :—

Breed.	Average number of cows		Total milk yield in lb.	Daily average yield per cow				Remarks.
	in milk.	in the herd.		in 1955-56.		in 1954-55.		
				for cows in milk.	for cows in the herd.	for cows in milk.	for cows in the herd.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Scindhi ..	10.2	16.7	50,367	13.4	7.6	10.3	8.3	Some animals were in last stage of lactation in the middle and end of the year. Hence the decrease.
Umblacherry.	10.4	19.3	12,091.5	3.1	1.7	3.8	1.0	
Murrah ..	20.4	28.7	93,937.5	14.3	9.4	16.2	16.2	Do.

Details of some of the good performers in the farm during the year are given below :—

Serial number and breed number.	Milk yield in lb.	Number of days in milk.	Daily average for the lactation.
(1)	(2)	(3)	(4)
1 Scindhi 359] ..	5,337.0	332	16.1
2 Scindhi 679 ..	5,309.0	439	12.2
3 Sindhi 695 ..	4,219.5	392	10.7
4 Umblacherry 3 ..	1,108.5	272	4.0
5 Umblacherry 21 ..	1,070.5	239	4.5
6 Umblacherry 9 ..	1,024.0	340	3.0
7 Murrah 20 ..	6,046.0	347	17.4
8 Murrah 14 ..	6,177.5	446	13.8
9 Murrah 5 ..	5,522.0	357	15.7

(c) *Incidence of diseases*.—There was an outbreak of foot and mouth disease during the year resulting in the death of three calves (Umblacherry one and Murrah buffalo calves 2).

The details of other diseases met with in the farm during the year are detailed below :—

Name of disease.	Number of deaths.
(i) Theileriasis	1
(ii) Ascariasis	1
(iii) Enteritis	2
(iv) Heat stroke	1
(v) Peritonitis	1
(vi) Post-partum haemorrhage	1

During the year, the farm stock were protected against black-quarter, haemorrhagic septicaemia and rinderpest as a preventive measure.

Besides the animal diseases, the paddy crops were also mainly affected with the outbreaks of stem-borer, mealy bug and jassid which were treated and controlled by suitable measures.

(d) *Mortality*.—There were ten deaths during the year mostly among buffalo calves as against nine in the last year working out a percentage of 4 as against 5.6 per cent in previous year. Steps were taken during the year to reduce the mortality among buffalo calves by giving lukewarm water before suckling which was found to reduce the incidence of enteritis.

(e) *Sterility work done*.—Cows that do not show signs of heat within 90 to 120 days of calving and those that do not conceive after one or two sirings examined for the cause of delayed heat. Thus eleven cases (five Scindhi cows and six Murrah buffaloes) were examined and found that the temporary sterility was due to persistent corpus luteum. All the cases were reserved on the fourth day of enucleation of the persistent corpus luteum.

(f) *General*.—(i) During the year this farm provided practical training to the students of B.V.Sc. (Intermediate, Part II) of Madras Veterinary College and the students of agricultural section of the Board High School, Orathanad. Grama Sevak trainees of Basic Training schools at Pattukkottai, Bhavanisagar and Aduthurai were on educational tour to this farm.

(ii) Tree planting was also undertaken and thus 2,000 Glyricidia cuttings, 300 gold mohur and 3,000 casuarina seedlings were planted during the year.

(iii) *Apiculture*.—Twenty bee colonies in hives were established during the year, but due to the cyclone, during north-east monsoon of the year all of them were blown off. So once again hiving of colonies had to be taken and eight colonies were re-hived during the year. Three pounds honey was produced and sold during the year.

(iv) *Pisciculture*.—The ponds in the farm were made use of rear fish. Thus five ponds in the farm were sown with 6,320 Tabea, 1,120 Cirrkina and 12 of Gowrami fingerlings.

(g) *Receipts and charges.*—A total amount of Rs. 22,885-13-6 was realized through sale of cattle and cattle products besides receipts under 'Miscellaneous sales' to the tune of Rs. 16,023-11-0 through sale of cereals, vegetables, etc. Total expenditure on the maintenance of cattle during the year was Rs. 56,819-7-0.

A total quantity of 161,395 lb. of milk was received during the year. One lakh nineteen thousand seven hundred and fifty-nine and a half lb. of milk was sold for consumption and the balance was separated and fed to calves and chicks.

There were 40 young bulls at the end of the year as against 13 bulls in the last year as detailed below :—

Seindhi	10
Umblacherry	9
Murrah	7
Kangayam	14
Total ..	40

(vi) *Season and crops in Livestock Farms.*

41. (a) *Livestock Research Station, Hosur.*—(i) *Rainfall.*—The total rainfall received during the year was 26.95 inches distributed over 62 days as against 33.76 inches in 69 days. South-west monsoon failed and thereby the sowings could not be taken in time at the proper season. The crops were withering but rains started from middle of August which was helpful for reviving the withering crops. The north-east monsoon was quite favourable to start with.

(ii) *Pastures.*—An area of 448.28 acres was reserved for hay-making and 496.63 acres for grazing. Spear grass was grown in almost in entire area under pastures. Ragi with Lab-lab and Cholam with Cowpea were sown in 33.95 and 55.30 acres respectively. Guinea grass, buffalo grass, Kolukkattai grass and other important grasses were grown in 29.30 acres.

Particulars of area harvested, yield, etc., are given below :—

Name of crop.	Area cultivated in acres.	Total yield.		
		Green fodder in lb.	Straw or hay in lb.	Galas in lb.
(1)	(2)	(3)	(4)	(5)
Guinea grass	15.00	128,267	..	..
Buffalo grass	2.30	54,980	..	..
Kolukkattai grass ..	5.00	11,736	..	..
Spear grass	448.28	..	9,264.9	..
Mixed grass	7.00	24,200	..	..
Cholam and Cowpea ..	55.30	1,145,042	..	..
Ragi and Lab-lab ..	33.95	..	90,906	55,534
Horse gram	37.30	..	2,621	1,636

(iii) *Hay-making.*—Eleven hay stacks were put up during this year and 926,449 lb. of hay were realized including the loose hay as against 740,554 lb. in the last year. The yield per acre was 1,528 lb. as against 1,397 in the last year.

(iv) *Silage-making.*—Seven silo pits were filled during the year with guinea grass, cholam, maize, lucerne, mixed grass, teosinte, buffalo grass, sunflower containing a total quantity of 1,767,658 lb. as against six pits with 518,200 lb. in the last year.

(v) *Garden cultivation.*—A total area of 123.53 acres consisting of wet, dry and garden lands was under this section for growing fodder, fodder grasses, legumes and grain crops. The particulars on acreage grown under different crops with their yields are detailed below :—

Crops.	Area in acres.	Yield in lb.
1 Lucerne	9.22	328,332
2 Berseem	11.69	501,818
3 Guinea grass	8.85	215,435
4 Napier grass	2.97	107,058
5 Buffalo grass	3.82	95,573
6 Rhodes grass	2.00	72,817
7 S. P. Vines	1.00	23,697
8 Kolukkattai grass ..	1.00	11,486
9 Cholam	48.61	1,305,226
10 Maize	12.76	245,691
11 Teosinte	18.68	532,350
12 Ragi straw (irrigated) ..	6.49	29,915
13 Paddy straw	3.50	10,000
14 Soyabeans	0.90	10,396
15 Oats	2.00	20,908
16 Maize straw	2.54	17,762
17 Cholam straw	7.04	72,661
18 Sunhemp	9.27	42,341
19 Lab Lab vines	1.00	81,168
20 Teosinte straw	0.73	6,392
21 Mixed grass from bunds ..	86.00	843,484
22 Horsegram bhusa	13.45	3,660
Fodder crops—		
23 Berseem bhusa	2.90	3,818
24 Grass lucerne mixture ..	0.40	2,695
25 Soyabeans bhusa	0.69	1,220
26 Cholam (irrigated)	0.54	25,825
27 Sun flower	0.50	12,628

Crops.	Area in acres.	Yield in lb.
Grain crops—		
1 Irrigated ragi	6.49	9,469
2 Paddy, second crop	3.50	6,671
3 Lucerne	1.50	156
4 Berseem	2.90	252
5 Linseed	1.00	54
6 Cholam	7.64	6,170
7 Sunhemp	1.69	284
8 Paddy first crop	3.50	11,790
9 Rhodes grass	1.00	80
10 Oats	1.00	226
11 Teosinte	0.73	1,370
12 Soyabeans	0.69	740
13 Maize	2.54	7,380
14 Horsegram	13.45	1,876
15 Seshum seeds	..	934

The trial on guinea grass by giving treatment as it is done for paddy crop under Japanese method was continued.

Specimen plots of one cent each of various grasses are maintained for educational purposes of students and visitors. New grasses like love grass, thin Napier and Blue buffel were grown on trial to study their performance. Tuber crops, grasses and legumes from Denmark were also grown under trial for their performance under local conditions.

(vi) *Fodder position.*—The fodder supply to cattle during the year was satisfactory. During the summer months the green fodder supply was supplemented with silage.

A total quantity of 3,038,292 lb. of fodder was supplied to the livestock of the farm during the year. The farm was self-sufficient in its fodder requirement and no fodder was purchased from outside sources.

(b) *District Livestock Farm, Koila, South Kanara*—(i) *Rainfall.*—There was a total rainfall of 143.96 inches in 137 days as against 181.80 inches in 141 days during last year. Intensity of rainfall was felt severely due to unprecedented rainfall during May recording a total of 12.98 inches in five days and during north-east monsoon 25.25 inches in 25 days.

(ii) *Pasture and cultivation.*—Five hundred acres were under pasture and 58 acres were under fodder cultivation during the year.

(iii) *Hay.*—Six hundred and eighty-eight thousands nine hundred and sixty lb. of hay was prepared from pasture grass and stocked in eight stacks during the year as against 437,748 lb. in the last year.

(iv) *Silage.*—A total quantity of 525,800 lb. of pasture grass and sunnhemp were ensiled in seven silo pits during the year as against 518,200 lb. in the last year.

(v) *Fodder position.*—The farm was on the border of self-sufficiency during the year as fodder was not purchased during the year from external sources. Details of fodder grown and yield particulars are detailed below :—

Serial number and name of crop.	Area cultivated in acres.		Total yield in lb.		
	for fodder.	for grain.	Green fodder.	Straw or hay.	Grain.
(1)	(2)	(3)	(4)	(5)	(6)
1 Guinea grass ..	12.88	..	275,349	..	..
2 Sunhemp ..	6.30	..	17,696	..	..
3 Teosinte ..	1.25	..	4,785	..	..
4 Maize ..	0.30	..	1,162	..	..
5 Cholam ..	1.14	..	12,002	..	..
6 Buffalo grass ..	0.02	..	350	..	..
7 Thin Napier ..	2.00	..	13,231	..	..
8 Paddy, first crop..	..	5.50	..	11,000	11,009
9 Hay ..	314	..	..	628,960	..

(c) *District Livestock Farm, Malabar*—(i) *Season and rainfall.*—A total rainfall of 140.42 inches in 134 days was received during the year as against 119.46 inches in 125 days during the last year.

(ii) *Pasture and cultivation.*—A total area of 80.26 acres was under pasture both for grazing and hay-making. Spear grass, kolukkattai grass, Australian draught resistant grass and Rhodes grass were the different species of grasses grown during the year.

(iii) *Hay-making.*—A total quantity of 194,200 lb. of hay was prepared during the year besides 8,400 lb. of coarse hay prepared for bedding as against 150,000 lb. prepared in the last year. The average yield of hay per acre was 3,692 lb.

(iv) *Silage.*—A total quantity of 441,000 lb. of green material consisting of guinea grass, teosinte, cholam, and Odion grass was ensiled in ten silo pits as against 327,450 lb. ensiled in the last year.

(v) *Compost.*—Three pits were filled up during the year under pit system besides four heaps were formed under heap system.

(vi) *Fodder position.*—76.82 acres were under fodder cultivation during the year and a total quantity of 1,207,023½ lb. of fodder was harvested as detailed below :—

Name of crop.	Extent in acres.	Yield obtained.		
		Green fodder.	Straw.	Grain.
(1)	(2)	(3)	(4)	(5)
Guinea grass ..	9.55	282,681½	..	..
Korai grass ..	0.32	4,000	..	..
Odian grass ..	0.70	15,325	..	..
Koduzu vine ..	0.05	1,544	..	..
Thin Napier grass ..	0.36	3,000	..	..

Name of crop.	Extent in acres.	Yield obtained.		
		Green fodder.	Straw.	Grain.
(1)	(2)	(3)	(4)	(5)
Buffalo grass	2.20	49,208	..	..
Teosinte*	41.94	296,790	1,420	2,000
Cholam	14.46	91,912	..	..
Cowpea	2.21	32,050	..	..
Teosinte and Cowpea mixture.	1.12	8,745	..	..
Guinea grass	From bunds	315,206	..	..
Mixed grass	Do.	88,022	..	..
Thin Napier grass ..	Do.	9,760	..	..
Koduzu vine	Do.	2,300	..	..
Elephant grass	Do.	6,480	..	..
Total ..	72.90	1,207,023½	1,420	2,000

*N.B.—The green fodder was obtained from an area of 33.07 acres and the straw and grain from an area of 8.87 acres. By utilizing all the available area, the farm had attained self-sufficiency in fodder requirement during the year. During the year an area of 16.70 acres was cleared by auctioning trees and was brought under pasture, thus increasing the area from 80.26 to 96.97 acres for this purpose.

(d) District Livestock Farm, Pudukkottai—(i) Season and rainfall.—During the year a total rainfall of 59.73 inches spread over in 74 days was received as against 43.21 inches in 66 days during the previous year. Both the monsoons were favourable with good rains though the north-east monsoon was severe due to a cyclone.

(ii) Pasture and cultivation.—There was no area under pasture in this farm and an area of 5.98 acres was under fodder cultivation. The various kinds of fodder grown are given below with yield particulars:—

	Area cultivated in acres.	Total yield of fodder in lb.
Guinea grass	3.98	239,842
Rhodes grass	0.98	27,446
Buffalo grass	0.11	11,930
Napier grass	0.16	2,683
Lucerne	0.31	2,342
Berseem	0.11	3,063
Cholam	0.4	14,061
Maize	0.24	1,523
Agathi	on field bunds	110
Bundgrasses	..	14,968
Total ..		317,068

As only a small area was available for cultivation in this farm, self-sufficiency in respect of fodder requirement could not be achieved. Hence fodder had to be purchased to meet the requirements of the farm to the value of Rs. 9,500 as detailed below:—

Kind of fodders.—Paddy straw.

Quantity purchased.—160,600 lb.

Amount.—Rs. 9,500.

Action taken to increase the fodder.—Intense cultivation was taken up even on bunds leaving no space uncultivated. Steps were also taken to acquire more lands nearby the farm.

(e) District Livestock Farm, Orathanad—(i) Season and rainfall.—There was a total rainfall of 43.27 inches spread over 57 rainy days as against 25.50 inches in 33 days. There was a cyclone during the year which had much devastating effect on standing crops.

(ii) Pasture and cultivation.—During the year 60.70 acres have been newly brought under cultivation by clearing the scrub jungles thus bringing the total area under cultivation to 176.00 acres as against 115.30 acres in last year. The details of fodder, fodder crops and cereal crops grown are detailed below:—

Serial number and name of the crop.	Area in acres.	Total produce in lb.	
		Fodder.	Grain.
(1)	(2)	(3)	(4)
1 Kuruvai paddy ..	22.50	45,149	41,021
2 Samba paddy ..	37.75	72,631	67,113
3 Fodder cholam ..	56.00	400,006	..
4 Grain cholam ..	2.78	15,000	829
5 Fodder maize ..	10.00	28,160	..
6 Maize (grain) ..	1.00	6,000	1,218
7 Cumbu	1.00	23,980	489
8 Ragi (dry)	4.25	9,175	897
9 Horsegram	22.45	..	2,423
10 Sunnhemp	13.38	14,891	291
11 Cowpea	5.37	7,950	199
12 Lucerne	1.33	3,645	..
13 Piliipesara	2.36	Not yet harvested.	..
14 Daincha	2.31	4,060	126
15 Sesbania	Field bunds.	..	114
16 Greengram as mixture in cholam.	20.00	..	178
17 Blackgram as mixture in cholam.	0.50	..	14
18 Groundnut	3.75	30,000	986
19 Guinea grass ..	12.39	115,316	..
20 Napier grass ..	4.50	76,372	..
21 Rhodes grass ..	0.8	14,930	..
22 Australian grass ..	0.15	4,067	..
23 Kolukattai grass ..	0.30	5,819	..

Serial number and name of the crop.	Area in acres.	Total produce in lb.	
		Fodder.	Grain.
(1)	(2)	(3)	(4)
24 Sudan grass ..	0.25	3,512	..
25 Buffalo grass ..	0.90	5,767	..
26 Green grass ..	Bunds.	354,238	..
27 Gingelly ..	4.00	..	615 lb.
28 Castor ..	Field	..	19 ..
	margins.		
29 Prosopis pods ..	Fences	..	73 ..

(iii) *Silage making*.—During the year, 5 silo pits were filled with 106,673 lb. of various fodder crops grown in the farm as detailed below:—

	LB.
Fodder cholam ..	67,005
Guinea grass ..	12,680
Napier grass ..	6,020
Rhodes grass ..	2,270
Australian grass ..	570
Sudan grass ..	480
Kolukkattai grass ..	3,512
Sunhemp ..	4,845
Buffalo grass ..	3,825
Green ragi seeds ..	2,266
Cumbu fodder ..	3,200
Total ..	1,06,673

(vii) Kangayam Cattle Improvement Scheme.

42. This scheme was started on 31st March 1942 under the auspices of Indian Council of Agricultural Research, New Delhi, for a period of six years and extended up to 31st March 1954. Further extension of the scheme was found necessary with the result the scheme was extended up to 31st March 1957, during last year. This scheme is now run by both the Indian Council of Agricultural Research and the Madras Government in the Palayakottai Cattle Farm, owned by Sri N. Nallasenapathy Sarkarai Manradiar, M.L.C., Pattagar of Palayakkottai, situated in Palayakottai, Pudur, Coimbatore district.

(a) *Object*.—The scheme was sponsored with a view to improve the milking qualities of Kangayam cows without detriment to the draught qualities of the males by selective breeding, balanced feeding and proper management, with this objective in view, programme of work was chalked out and the scheme was started with a strength of 62 animals (60 cows and heifers and 2 bulls).

(b) *Cattle population*.—The strength of livestock as on 1st April 1955 and 31st March 1956 are detailed below:—

Particulars.	Number of animals.	
	As on 1st April 1955.	As on 31st March 1956.
Cows in milk ..	67	59
Cows dry ..	30	14
Cows nearing parturition ..	28	45
Breeding bulis ..	3	2
Heifers ..	72	80
Young bulls ..	78	87
Heifer calves ..	40	48
Bull calves ..	43	51
Work bullocks ..	75	89
Total ..	436	484

The increase in strength was due to increased births during the year. Thirty-two animals were culled out on the grounds of either poor yield or old age.

(c) *Dairy*.—Out of a total number of 123 cows in the herd on an average, 70.6 cows remained in milk, yielding 15,302.0 lb. There was an increase in the daily individual average during the year as could be seen from the following data:—

	1955-56.	1954-55.
(1)	(2)	(3)
Daily individual average over cows in milk ..	7.1	5.5
Daily individual average over cows in herd ..	3.9	3.9

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

Breed and bull number.	Total milk yield up to the date of drying in lb.	Daily average for the lactation in lb.	Number of days in milk.
(1)	(2)	(3)	(4)
Kangayam 33	2,651.0	11.0	241
" 81	3,739.8	10.0	373
" 99	3,159.8	8.4	374
" 361	2,951.8	9.5	316

(d) *Calvings*.—There were 105 births of which 49 were bull calves and 56 were heifer calves. Among these there were one deformed heifer and one 'still born' heifer calf.

(e) *Experimental work done*—(i) *Ante-natal massage of udders*.—Udders of pregnant heifers were massaged daily for two months before calving, with controls for the experiment. Results arrived at, with the massage done among 6 heifers with another batch of controls are detailed below:—

	Experimental animals.	Controls.
(1)	(2)	(3)
Average milk yield in lb. ..	1,632.3	1,250.5
Daily average yield in lb. ..	6.2	5.2
Average days in milk ..	273	219

It may be observed the massage tends to increase the yield of milk besides prolonging lactation period.

(ii) *Birth weight of calves.*—Recording of birth weight of calves was also undertaken, the details of which are given below :—

	1955-56.	1954-55.
	LB.	LB.
Average birth weight of a calf	44.2	44.4
Average birth weight of a bull calf	46.4	46.7
Average birth weight of a heifer calf	42.2	42.2
Maximum birth weight of a calf	59.0	57.0
Minimum birth weight of a calf	(bull calf) 26.0	32.0
	(heifer calf)	

(iii) *Testing of animals for draught capacity.*—This item of work was entrusted to a committee of local experts after general discussion with Animal Husbandry Commissioner with the Government of India. (Committee comprises of the Pattagar of Palayakottai and three non-official members, with the Deputy Director of Animal Husbandry (Livestock) and the Superintendent, Kangayam Cattle Improvement Scheme, as official members. Periodical meetings of the committee were held and their opinions were recorded regarding the draught capacity of bullocks included in the scheme in respect of ploughing fields, mhothe work, and dragging loads. It was only a rough test and from the observations made so far there was no difference found in the working ability between the bullocks descending from high milk yielding dams and low milk yielding dams. If some mechanical contrivance is made available more authentic information can be collected.

(iv) *Maturity of heifers.*—A study of the age of maturity was made during the year. It was observed that the average age of maturity was 43 months with a maximum of 57 months and a minimum of 37 months as against 45, 52, 36 months respectively in previous year.

(viii) *Cross-breeding Scheme, Ootacamund.*

43. The scheme was started on 20th January 1955 with the financial aid of Indian Council of Agricultural Research on 50 : 50 basis with the aim at improving milk production of local non-descript cattle in the hilly region of Nilgiris by the introduction of foreign Jersey blood, through artificial insemination by obtaining the semen of pedigree Jersey from Southern Regional Station, Bangalore. The scheme having its headquarters at Ootacamund with a network of 4 sub-centres at Nanganad, Prospect Estate, Bhavani and Thimmanalathy villages is to cover an area with a cow population (breedable age) of 5,227.

Preliminary house-to-house survey was conducted to get detailed particulars for the scheme and 2,500 cows out of 5,227 which do not, as far as could be known, contain any foreign blood were registered. Milk recording at random at monthly intervals for non-descript and cross-bred cows was done. Out of recordings made of 1,123 cows, an average of 2.25 lb. for non-descript and 4.25 lb. for cross-bred have been recorded.

Seven hundred and seventy-four inseminations were done with the semen of pedigree Jersey during the year as the supply from Bangalore commenced from 10th December 1955 only. Till then, semen from Scindhi, Murrah and Jersey bulls available at Veterinary Hospital, Ootacamund, was utilized and thus 1,135 inseminations were made. Follow-up of inseminations, castration of scrub bulls with the enforcement of Livestock Improvement Act, investigation into fodder and feed resources, formation of livestock improvement committees at village level, to solve problems relating to livestock which are also part of this programme, were also attended to.

(ix) *Artificial insemination.*

44. (a) There were 4 artificial insemination centres with 10 sub-centres at the beginning of the year functioning at Madras, Coimbatore, Tiruchirappalli and Madurai. During the year 3 more centres were opened at the following places and thus there were 7 artificial insemination centres with 10 sub-centres at the end of the year :—

Place.	Date of opening.	Date of commencement of artificial insemination.
(1)	(2)	(3)
1 Erode	13th August 1955	21st November 1955.
2 Kozhikode	8th October 1955	12th December 1955.
3 Salem	1st August 1955	11th December 1955.

(b) All centres were situated in the headquarters institutions in separate buildings provided for the purpose except in Erode, Kozhikode and Salem for which proposals for constructions of separate accommodation for housing the artificial insemination centres were submitted during the year.

(c) During the year 41 bulls of various breeds were maintained in these centres, out of which 1,516 collections of semen were made to conduct 18,753 inseminations as against 29 bulls, 1,166 collections and 13,368 inseminations in the previous year. The details of work done at the various centres are given below :—

		Number of bulls maintained under each breed.							Number of collec- tions made.
Location of the Artificial Insemination Centre.		Holstein Friesian.	Jersey.	Ongole.	Scindhi.	Kangayam.	Murrah.	Total.	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	Madras	1	1	2	2	1	2	8	296
2	Madurai	1	1	1	1	1	1	6	280
3	Coimbatore	1	1	1	1	1	3	9	436
4	Tiruchirappalli	1	1	1	1	1	1	5	194
5	Erode	1	1	1	2	1	1	3	71
6	Kozhikode	1	1	1	1	3	3	5	106
7	Salem	1	1	1	1	2	1	6	106
	Total	1	1	2	17	7	16	44	1,516

		Number of inseminations made.	Rate of insemination per collection.	Number of pregnancies verified.	Number of calves inspected.	Number of sterility cases handled.	Remarks.
		(10)	(11)	(12)	(13)	(14)	(15)
1 Madras		3,841	12.93	2,113	523	..	....
2 Madurai		2,516	8.99	1,643	651	14	....
3 Coimbatore		10,174	20.51	3,311	1,530	11	....
4 Tiruchirappalli ..		921	4.75	610	32	34	....
5 Erode		436	5.81	15	..	..	Artificial insemination work started on 21st November 1955.
6 Kozhikode		433	6.28	..	..	..	Artificial insemination work started on 2th December 1955.
7 Salem		432	4.07	..	..	..	Artificial insemination work started on 11th December 1955.
Total		18,753	12.37	8,302	2,736	59	

(d) *Re-insemination.*—About 15 to 20 per cent of the inseminated animals came up for re-inseminations at the various centres. Many cows which did not conceive through natural services were inseminated with success infusing confidence in the minds of public.

(e) *Experimental works—Studies on semen.*—Periodical studies on the quality and the keeping quality of semen used for insemination were made at the various centres. While the keeping quality of semen of Kangayam and Scindhi bulls were good that of buffalo bulls was not satisfactory. A course of vitamin C injection was tried in buffalo bulls and the semen improved in its keeping quality up to a duration of 72 hours while previously it was not preservable for even 24 hours. As a rule semen more than 72 hours old is not used. The preservability of semen ranged from two to five days in case of buffaloes and 3 to 7 days in case of Ongole and Scindhi bulls.

(f) *Work on sterility.*—A routine examination of the cows brought for artificial insemination was carried out and it was observed that Granular Vaginitis, Endometritis, Pyometra, Cystic Ovaries and Persistent Corpus Luteum were mainly responsible for the large percentage of non-conception among the cows. Whenever such cases were met with, the owners were advised to undertake suitable treatment at the nearest veterinary institutions. The total number of cases of infertility handled during the period was 57 as against 97 during the corresponding period of last year.

(g) *Training.*—Training of veterinary personnel was undertaken in artificial insemination centre in Madras. During the year training for a fortnight was given to 10 Veterinary Assistant Surgeons and 19 Veterinary and Livestock Inspectors of this State. On a special request, 5 Veterinary Assistant Surgeons of Hyderabad State were trained for two months in the artificial insemination centre at Madras.

(h) *General.*—The popularity of the technique of artificial insemination is increasing day by day and there is great demand for opening more centres in various districts. Proposals to open artificial insemination centres in veterinary institutions at headquarters of all districts were submitted and tentative sanction for opening 5 artificial insemination centres in urban areas in 1956-57 was also obtained during the year.

(x) Key Village Scheme.

45. (a) The Key Village Scheme sponsored at All-India level by the Government of India was inaugurated in Madras State in 1952-53. This scheme is in implementation in Kangayam breeding tract, in Anamalais Hill area for Scindhi breed and at Hosur Cattle Farm for Hallikar breed.

(b) There were nine key village centres during the year. The details of location of these centres are given below :—

Name of key village centre.	Breeding tract.	Date of opening of the centre.	Number of key villages attached to the centre.
(1)	(2)	(3)	(4)
(i) Vellakkoil	Kangayam	19th December 1952	4
(ii) Kangayam	Do.	10th January 1953	4
(iii) Mulanur	Do.	4th March 1954	4
(iv) Senkarandampalayam.	Do.	Do.	4
(v) Thoppampatti	Do.	3rd February 1955	4
(vi) Chikkanaparam	Do.	Do.	4
(vii) Malayandipatnam ..	Do.	30th March 1954	4
(viii) Cinchona (Anamalais).	Scindhi	1st February 1953	4
(ix) Livestock Research Station, Hosur Cattle Farm.	Hallikar	17th October 1952	4

(c) There were 104 breeding bulls in this scheme during the year as against 83 bulls in the last year. Out of these bulls 29,350 inseminations were made besides 3,111 natural services as against 11,805 inseminations and 2,350 natural services in the last year.

The details of location of bulls, semen collections, inseminations done at various centres are given below :—

Location of key village centre.	Number of bulls at the centre.	Number of bulls in the key village.	Number of collections made.	Number of inseminations done.	Rate of inseminations.	Number of natural services performed.	Number of calves subsidised.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Vellakkoll	4	6	312	4,032	13.02	347	26
2. Kangayam	5	4	532	5,844	10.93	280	71
3. Mulalur	4	2	313	3,431	10.98	227	20
4. Sankarandampalayam	4	2	283	3,136	11.48	504	20
5. Thep. am.atti	5	2	198	2,333	12.09	374	..
6. Chikkanapuram	5	2	256	2,312	9.03	222	..
7. Maava dipatnam	4	2	303	2,393	7.91	313	31
8. Cinchona	3	2	224	730	3.26	271	5
9. Livesock Research Station, Hosur (Cattle Farm).	4	2	181	1,104	6.10	593	41
Total ..	38	66	2,597	25,350	9.33	3,111	274

(d) Under the Key Village Scheme in addition to inseminations and follow up of these cases, the other aspects of Animal Husbandry in this area like production and preservation of fodder, protection in advance of livestock against epidemics, rendering treatment to morbid cases, castration of scrub bulls and rams were also attended to by the personnel of these centres. House to house survey were also made from time to time in villages along with inseminations with a view to study the feasibility of solving livestock problems at village, the formation of livestock co-operatives for both production and marketing of livestock and livestock products.

(e) *Work on sterility.*—Among the morbid cases, special attention was paid to study and treat the pathological conditions of reproduction system with a view to augment the early and frequent calving among cows and thereby increase the milk production.

Some of the above conditions met with are detailed below :—

(i) *Infantile genitalia.*—Being a famine-affected area, cases of infantile genitalia were met with in cows of ages between 2 teeth and 8 teeth. These were successfully treated by feeding germinated grams for a short period and change in the mode of domestication.

(ii) *Atrophy of genitalia.*—Cases of sterility in cows for two or three years after calving once or twice were also met with due to atrophy of genitalia. They were also treated successfully on the above lines.

(iii) *Cystic ovaries.*—Cystic condition of ovaries were also found in cows which did not conceive even after three or four sirings or inseminations. These were also treated successfully by rupture of cysts per rectum followed with feeding of germinated grams for over 72 hours.

(iv) *Persistent Corpus Luteum.*—Sterility due to this condition was observed in cows after one or two calvings which had not taken a bull for about two to three years. Such conditions responded successfully to the feeding of germinated grams.

(f) *Scheme for improvement of pastures.*—An experimental measure towards the improvement of pasture was undertaken in 100 acres of pasture land during the year by subsidising at Rs. 50 per acre among 17 ryots. Fencing and contour bunding in pasture and hay-making were done satisfactorily during the year with enthusiasm on the part of ryots.

(g) *Disease control.*—Besides the work on development side, control measures to avert the incidence of epidemics were undertaken in the scheme through preventive inoculations in all species of livestock as detailed below :—

Name of disease against which preventive inoculations were done.	Number of inoculations done.
(1)	(2)
(i) Cattle—	
Rinderpest	961
Anthrax	899
Blackquarter	16,159
Hæmorrhagic Septicæmia	173
(ii) Sheep—	
Sheep-pox	6,395
Enterotoxæmia	503
(iii) Poultry—	
Ranikhet	1,506

(h) *General.*—The concepts of key village scheme towards the improvement of livestock in a short time under co-operative venture were well understood by the rural public and had taken it up in right earnest by co-operating with the departmental staff.

The educative side of this scheme on an intensive scale through propaganda and demonstration had yielded good results which could be seen from the popular feeding of germinated grams for sterile condition in these parts as a cheap and effective method compared to costly hormonal parenteral treatment. Siring of cows between 2½ to 3 months after calving had become popular practice in these areas as a result of practical demonstration of the benefits of this procedure by way of a calf once in 12 to 14 months, reduction in dry period and increase in milk yield.

The tempo of the enthusiasm of the public in the scheme area was maintained by holding calf rallies, in addition to the cattle shows of the region, as one of the annual Mela in the rural parts through Government subsidy supplemented with public contribution. Well kept and quality animals were awarded prizes. Calf rallies are held in the future interest of the scheme through the proper care and management at present for a well-developed

livestock of the future. Such calf rallies were held in all the centres except one and the details of animals participated and prizes awarded are given below :—

Location of key village centre.	Number of animal participated.	Number of prizes awarded (inclusive of consolation prizes.)
(1)	(2)	(3)
1 Kangayam	337	246
2 Vellakkoil	220	217
3 Thoppampatti	149	149
4 Mulanur	220	220
5 Chikkanapuram	186	108
6 Malalandipatnam	311	102
7 Cinchona	212	149
8 Livestock Research Station, Hosur Cattle Farm.	224	121

(xi) Key farm centres in private institutions.

46. (a) Six key farm centres were run during the year with 3 sub-centres. In these centres a total number of 34 bulls of Scindhi, Kangayam and Murrah breeds were maintained.

In these centres 1,262 collections of semen were made out of which 9,631 inseminations were carried out as against 949 collections and 6,490 inseminations in the previous year. The details of work done at these institutions are given below :—

Location of key farm centre.	Number of bulls maintained.				Natural services performed.	Number of collections made.
	Kanga. yam.	Scindhi.	Murrah.	Total.		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1 Neikarapatty	2	2	3	7	45	336
2 Idayakkottai	6	..	..	6	91	237
3 Chidambaram	2	2	2	6	19	179
4 Valarpuram	2	2	4	4	..	81
5 Kilacheri	..	2	3	4	..	236
6 Sivagiri	4	..	..	4	235	133

	Number of inseminations done.	Rate of insemination per collection.	Number of calves born of		Number of pregnancies verified.	
			Artificial insemination.	Natural services.	Artificial insemination.	Natural services.
	(8)	(9)	(10)	(11)	(12)	(13)
1 Neikarapatty	3,175	9.45	975	43	2,169	46
2 Idayakkottai	2,029	6.33	555	46	1,167	78
3 Chidambaram	788	4.4	114	7	453	15
4 Valarpuram	371	4.58	80	2	392	3
5 Kilacheri	1,328	5.62	233	..	1,156	..
6 Sivagiri	1,937	14.5	355	92	446	130

(b) In addition to the artificial insemination work, the staff rendered treatment and castrated scrub bulls through First Aid Veterinary Centres attached to the institutions at the Idayakkottai, Valarpuram and Neikarapatty and also while on tour for

verifying services and inspecting the progeny. Preventive inoculations against epidemics were also undertaken in the areas under these institutions. The details of work are given below :—

(i) Number of cases treated	1,916
(ii) Number of castrations done	901
(iii) Number of preventive inoculations done—	
Against Haemorrhagic Septicæmia	5,457
Do. Blackquarter	7,860
Do. Enterotoxæmia in sheep	2,228
Do. Sheep-pox	1,238
Do. Ranikhet disease	683
Do. Fowl-pox	577

(c) Sterility work done.—In addition to the treatment and preventive inoculations, the staff at these centres paid special attention to the diagnosis and treatment of ancestrus and sterile conditions among female stock. The details of common conditions met with in these centres are given below :—

Details.	Number of animals treated.
1 Anoestrus	82
2 Granular vaginitis	35
3 Persistent Corpus Luteum	15
4 Metritis	11
5 Cervicitis	10
6 Infantile genitalia	10
7 Cystic ovaries	9
8 Endometritis	1
9 Pyometra	2
Total	175

(d) Calf rallies.—Calf rallies were also conducted in almost all of these key farm centres with a view to rouse the consciousness among the ryots to bestow better care in rearing the calves born in the interest of future livestock population. In these rallies almost all of the calves born of the bulls at these centres were gathered as exhibits and prizes were awarded to the best animals besides consolation prizes to others. The details of the rallies conducted are given below :—

Name of the centre where calf rally was held.	Number of animals exhibited.	Number of prizes awarded.	Number of consolation prizes awarded.
1 Neikarapatty	503	57	101
2 Idayakkottai	216	60	..
3 Chidambaram	67	15	50
4 Kilacheri	291	22	170
5 Sivagiri	45	45	..

(xii) *Calf Subsidy Scheme.*

47. The scheme for subsidising selected calves in the key villages of key village centres and key farm centres with a grant of Rs. 5 per mensem was continued during the year. The details of calves selected and the amount distributed are furnished below :—

Number of calves selected for subsidy during the year—253.

Total number of calves under the scheme up to the end of the year—384.

Amount of subsidy paid during the year—Rs. 13,090.

Total amount of subsidy paid up to the end of the year—Rs. 14,125.

(xiii) *Scheme for the salvage of dry cows.*

48. (a) Under this scheme, a farm was opened in 1944 at Kambakkam kancha in Chingleput district, at a distance of 54 miles from Madras. The object of this scheme is to prevent the cows in the City being taken to abattoirs for economic reasons soon after they become dry and thereby in a way to increase the milch production in the city. As per this scheme, cows in the city during their dry period are taken to this farm and are maintained there for a nominal fee of Rs. 10 per mensem till they are being taken back as pregnant or after calving.

(b) *Strength.*—There were 197 animals in this farm at the beginning of the year under report as against 228 in the last year. Two hundred and fifteen cows were admitted during the year and 184 cows were returned either pregnant or after calving. The details of animals in the farm are given below :—

Details.	1954-55.	1955-56.
Number of cows on hand on 1st April	228	197
Number of cows admitted during the year	233	215
Number of cows returned after calving	195	164
Number of cows returned before calving (pregnant cows).	24	20
Number of cows returned as unfit for salvage	36	45
Number of cows died	9	8
Number of cows on hand at the end of the year	197	175

The decrease in admission is due to the rigorous selection of cows at the time of admission with a view to reduce the duration of stay of animals at the farm.

The average period of stay of an animal in the farm during this year was 299.8 days as against 315 days in the previous year.

(c) *Breeding bulls.*—Five breeding bulls were maintained in this farm during the year which performed 348 services as against 341 in the last year. One hundred and fifty-eight calves were born at the farm during the year.

(d) *Pastures.*—There were fairly heavy rains during the year (36 inches) in the latter half of the year when the grazing conditions were satisfactory. In the first half of the year, the grazing conditions were not satisfactory for want of rains when the animals were fed with concentrates and silage.

(e) *Fodder.*—12.48 acres of land was available for growing fodder crops as detailed below :—

Crops grown.	Area in acres.	Yield.	
		Tons.	Lb.
Australian draught resistant grass	1.9	22	1,185
Fodder cholam	9.58	22	1,019
Horsegram	1.00		

(f) *Silage.*—The entire quantity of fodder, cholam and horsegram grown along with 1,317 lb. of Australian draught resistant grass was ensiled.

(g) *Receipts and expenditure—*

	RS	A.	P.
Total receipts	28,579	4	6
Total expenditure	47,809	15	3

(h) *General.*—During the year, the advisory committee of this farm made use of the services of Regional Sterility Officer, Madras, for check up and treatment of the condition of sterile cows. The problem of inadequate facilities like insufficient area, water source, etc., which were impeding the progress of this farm was solved during the year by the transfer of an area of about 1,200 acres in the reserved forest area near Madras.

(xiv) *Salvage farms under private agency.*

49. There were two salvage farms in Malabar district at Chathamangalam and Ayithara run by the local Co-operative Milk Supply Union and Society for Prevention of Cruelty to Animals, respectively.

(i) *Chathamangalam Farm.*—This farm is in existence since 1950, being maintained by the Co-operative Milk Supply Union, Kozhikode and situated at a distance of 14 miles from Kozhikode. The area of the farm is 53.79 acres in which fodder grasses are grown in an extent of 10 acres. There was a strength of 58 animals at the end of the year and 48 animals were returned back either pregnant or after calving.

(ii) *Ayithara Farm.*—This farm was opened on 5th November 1954 by the Society for Prevention of Cruelty to Animals, Tellicherry. In addition to the 30 acres available to start with, right of grazing in 56 acres of land in the area was acquired during the year. About 40 animals were maintained during the year in addition to the small Pinjarapole with about 10 invalid animals.

(iii) *Gandhi Seva Gosadan, Perur*.—Gandhi Seva Sadan, Perur, in Waliuvanad taluk was maintaining a Gosadan with a strength of 37 animals inclusive of 2 Kangayam bulls.

(xv) *Village Livestock Improvement Scheme.*

50. (a) The main features of the scheme as worked out by this department and through the co-operative societies are—

(i) The castration of all unwanted male stock thus making available only the services of the approved bulls to the cows in the area;

(ii) the protection of all the animals in the area against the various cattle diseases;

(iii) the maintenance of necessary records with regard to breeding pedigree, production, etc., and tattooing of the cows and the progeny; and

(iv) the provision of subsidy for the payment of Rs. 5 per mensem, for heifer-calves from seventh month to an age of two years born to the cows registered for proper maintenance, at the rate of 50 calves per year in each centre.

The firkas which were allotted to this department under the scheme were Saliangalam (Tanjore district), Malli (Ramanathapuram district) and Kumbla (South Kanara district).

The Kumbla firka has been subsequently transferred to the Community Project administration.

(b) Details of working in these centres are given below :—

(i) *Saliangalam*.—The scheme has been working in this centre since 12th March 1951 covering the area comprising of Palliyur, Thirubhuvanam, Poondi and Saliangalam villages. Three Umblacherry bulls were maintained which were allowed for service free of cost. Three hundred and ninety-two services were performed during the year as against 327 in last year. Eighty-four calves were born of these bulls, of which 73 were inspected and 7 were registered for subsidy. Madras Livestock Improvement Act was enforced to supplement the effect of grading up of local stock by pedigree bulls and 379 scrub bulls were castrated during the year as against 130 in the previous year. Since the date of implementation of this scheme to the end of this year, 1,540 services were performed by bulls with 372 calves born of them. So far 956 scrub bulls have been eliminated by castration and 50 heifer-calves have been registered for subsidy which was paid to the tune of Rs. 2,790 during the year.

(ii) *Malli*.—The scheme was started in this centre on 26th January 1953. Besides the Veterinary Assistant Surgeon, one more Veterinary and Livestock Inspector and two bull attendants were posted for this scheme during the year. There were

2 Kangayam bulls and 1 Murrah buffalo bull at the beginning of the year. One more Murrah buffalo was located in this centre during the year. Madras Livestock Improvement Act was continued to be enforced in this area. Up to the end of the year, 454 female stock and 40 heifer-calves were registered for subsidy. A sum of Rs. 900 was paid towards subsidy. Details of services performed, calves born, are given below :—

Number of services performed by bulls.	During the year.	Up to the end of the year.
Number of services performed by the bulls.	255	649
Number of calves born	86	165
Number of calves inspected	78	134

(iii) *Kumbla (Kinnigoli)*.—The scheme for improvement of village livestock was handed over to the Community Projects Administration in the previous year. There were 2 Scindhi and 1 Murrah breeding bulls which performed 390 services. Forty-one calves were born of them during the year.

(xvi) *Cattle breeding through co-operative societies and associations.*

51. With a view to inculcate among the agriculturists the enthusiasm for co-operative endeavour towards the improvement of livestock solving the problems at village level from all aspects (viz.), breeding, feeding and management, cattle breeding associations, and co-operative societies were encouraged to be formed by persuasion, propaganda and subsidy. Thus during the year nine breeding associations were functioning—

(i) *Kalasapakkam Co-operative Cattle Breeding Society, North Arcot district*.—This society continued to function this year with one Kangayam bull under the premium scheme. Seventy-eight services were performed during the year and 50 calves were born of which 20 were inspected for their quality and condition.

(ii) *Odagathur Cattle Breeding Co-operative Society, North Arcot district*.—This society was not revived after the expiry of the only Kangayam bull during the year.

(iii) *Kannivadi Cattle Breeding Society, Madurai district*.—The society which was not active for a major part of the year due to delay in constitution of its Board, had at the end of the year submitted proposals to Government for the distribution of Kangayam heifers on loan to its members.

Eleven breeding bulls [Murrah bulls 4 and Kangayam bulls 7] were maintained under this society through its members under

premium scheme. During the year, 571 services were performed by the bulls and 276 calves were born, of which 155 were inspected or their quality and condition.

(iv) *Annamalai Hill Cattle Society, Coimbatore district.*—This society is in existence for about a score of years having been organized by the planters with a view to grade up the local cattle with Red Scindhi breed. This society continued to function successfully which will be reflected in the existence of almost all of the animals in the estates with 75 per cent of Scindhi blood.

There were 42 Scindhi bulls in this area during the year most of them being maintained by Estates except for 3 distributed under Government Scheme and 1 under premium scheme.

(v) *Livestock Improvement Association, Kottur, Coimbatore district.*—This association continued to do good propaganda work in the sphere of livestock improvement.

(vi) *Cattle Breeding Society, Anchetty, Salem district.*—The society continued to function with 9 Hallikar bulls at the beginning of the year. There were 2 additions to replace the 2 removals during the year. All of them were under premium scheme and had performed 347 services during the year as against 286 in the previous year. One hundred and seven calves were born, of which 54 were inspected to study their quality and condition.

(vii) *Cattle Breeding Society, Mecheri, Salem district.*—The society continued to function with 7 Hallikar bulls at the beginning of the year. Four bulls were added during the year, thus bringing the total to 11 at the end of the year. All of them were under premium scheme and had performed 326 services as against 267 in the previous year. Eighty-seven calves were born of which 74 were inspected for their quality and condition.

(viii) *South Kanara Cattle Improvement Association, South Kanara district.*—This association continued to exist during the year attending to the needs for improvement of livestock in the district.

(ix) *Kangayam Cattle Breeding and Marketing Co-operative Society, Palladam.*—This society was functioning for the benefit of breeders in Kangayam breeding tract providing facilities for purchase and sale of breeding bulls, purchase of concentrate feeds and fodder through sale depots at important places. During the year, 17 Kangayam bulls were located in Palladam taluk by this society with the aid given under National Extension Service Scheme.

(xvii) *Breeding bulls under departmental schemes.*

52. Pedigree breeding bulls of various breeds were located in the State at the rate of 1 for every 100 cows of breedable age,

under various schemes for grading up the stock in urban and rural areas. They are detailed below:—

Breed of bulls.	Number of bulls in				Total.
	Veterinary Institutions.	Premium Scheme.	Government Male Live-stock Distribution scheme.	District Board scheme.	
Scindhi	44	98	111	2	255
Kangayam	38	302	88	187	615
Gir	2	..	15	..	17
Tharparkar	..	7	..	..	7
Shahiwal	1	..	..	..	1
Jersey	1	4	..	..	5
Ayrshire	..	1	..	..	1
Holstein Freisian	..	3	..	..	3
Cross-bred	..	14	..	..	14
Hallikhar	1	81	1	..	83
Umblacherry	..	72	..	..	72
Alambady	..	4	..	..	4
Murrah Buffalo bulls.	34	127	62	..	223
Total	121	713	277	189	1,300

(a) *Bulls at stud in veterinary institutions.*—There were 121 breeding bulls located at the veterinary institutions during the year. They performed 6,928 services during the year. Two thousand eight hundred and sixty-six calves were born of these bulls of which 2,293 calves were inspected.

(b) *Bulls under Male Livestock Distribution Scheme.*—This scheme is for location of bulls free of cost in villages with suitable custodians interested in cattle improvement, under the condition that they should maintain it for three years for stud purposes. There were 277 bulls under this scheme located in villages at the end of the year as against 220 in the previous year. A total number of 9,326 services were performed by these bulls during the year. Two thousand four hundred and fifty-five calves were born of these bulls, of which 1,196 were inspected.

(c) *Bulls under Premium Scheme.*—This scheme provides for utilizing the bulls for the benefit of the village that are maintained by individuals for their use, through payment of an amount of Rs. 200 for bulls and Rs. 220 for buffalo bulls per annum as premium up to a maximum period of five years for a bull in the same centre.

Thus there were 713 bulls at the end of the year as against 530 in the previous year. Thirty-seven thousand three hundred and thirty-two services were performed by the bulls during the year. Ten thousand five hundred and sixty-six calves were born of which 4,976 were inspected.

(d) *Bulls under District Board Scheme.*—This scheme encourages the district boards to take up livestock improvement work also by way of payment of grant by the Government.

Bulls are located in villages by the district board with suitable custodians who have to bear 50 per cent or 33½ per cent of the cost of the bull and maintain the same for three years for stud purposes. Under this scheme there were 189 bulls as against 190 in the previous year. These bulls performed 10,642 services during the year. Two thousand eight hundred and sixty-six calves were born of these bulls of which 2,293 were inspected.

(e) *Bulls at stud in Agricultural Research Station, Koilpatti and Rice Research Station, Ambasamudram.*—There were five bulls at the end of the year, which performed 423 services. Twelve calves were born of which nine were inspected.

(xviii) *Breeding bulls under other schemes.*

53. (i) *Toda welfare.*—Under the Toda Welfare Scheme, there were six Jaffarbadly buffaloes and five calves during the year for the benefit of the Toda community in Nilgiris district.

(ii) *Local development works.*—Five bulls were purchased from the funds of Local Development Works in North Arcot district.

(iii) *Bulls purchased from Common Good Funds of co-operative societies and by panchayats.*—Six bulls in Salem district were purchased out of these funds by two cattle-breeding societies. One bull was purchased by panchayat in Tirunelveli district.

(iv) *Bulls purchased from the funds of National Extension Service Scheme.*—A total number of 24 bulls were purchased with 50 per cent grant under this scheme in Ramanathapuram, Tiruchirappalli and North Arcot districts during the year as against 19 purchased in the last year.

(xix) *Livestock Improvement Board.*

54. (a) With a view to advise the Government on Animal Husbandry matters and schemes relating to livestock improvement and allied questions, a Livestock Improvement Board was first constituted in 1940 with both official and non-official members. During the year under report, the Board consisted of the following members with the Minister for Agriculture as its Chairman and Deputy Secretary to Government, Agriculture Department, as its Secretary :—

Official members.

- (1) The Director of Animal Husbandry.
- (2) The Director of Agriculture.
- (3) The Registrar of Co-operative Societies.
- (4) The Deputy Director of Animal Husbandry (Livestock).

Non-official members.

- (1) Sri N. Nallasenapathy Sarkarai Manradiar, M.L.C., Palayakkottai P.O., Erode R.S.
- (2) Sri K. S. Lakshminipathy Naicker, M.L.A., Idayakkottai, Madurai district.
- (3) Sri E. K. Sankaravarma Raja, M.L.A., Mandur Post, North Malabar.
- (4) Dr. K. Balappa Shetty, Secretary, South Kanara Livestock Improvement Society, Hampankatta, Mangalore.
- (5) Sri R. Srinivasa Iyer, B.A., B.L., Secretary, Ryots' Association, Pattukkottai, Tanjore district.
- (6) Sri V. K. Ramaswamy Mudaliar, M.L.A., Cheyyur, Chingleput District.

The 34th and 35th meetings of the above board were held at Agricultural College, Coimbatore, on 5th June 1956 and at District Livestock Farm, Orathanad, on 16th November 1956 respectively.

The 34th and 35th meetings of the above Board were held Regional All-India Cattle and Poultry Shows as a special one to discuss and recommend on the Second Five-Year Plan of Animal Husbandry Department. All the 55 schemes proposed in the Plan were discussed one by one and all of them were approved by the Board.

(c) In the 35th Meeting the following subjects were discussed :—

- (1) Distribution of Seindhi Bulls in interior parts of Malabar district.
- (2) Metalling of main roads in Koila and Malabar livestock farms.
- (3) Establishment of a canteen and good garden in the livestock farms in Koila and Malabar.
- (4) Construction of buildings, etc., in Livestock Farm, Thiruvazhankunnu in Malabar district.
- (5) Withdrawal of bulls for natural service from artificial insemination centres.
- (6) Calf Subsidy scheme for heifer calves in key village areas.
- (7) Opening of a cattle farm for the development of Burghur breed in its home tract.
- (8) Scheme for the breeding of milch cattle to improve and increase the milk yield.
- (9) Financial assistance to ryots to construct sanitary cattle-sheds.
- (10) Establishment of regional propaganda sections.
- (11) Exclusion of small private breeders from the scope of distribution of animals culled out from the Government farms.
- (12) Better utilization of the pure breed bulls supplied to the co-operative milk-supply societies and unions.

(13) Subsidy of Rs. 10,000 to the Chathamangalam Salvage Farm run by the Calicut Co-operative Milk-supply Union, erection of pumpsets, etc.

(14) Implementation of further measures to make the Food Adulteration Act more effective with regard to milk and milk products.

(15) Distribution of rams and bucks should be included in the Male-stock Distribution Scheme.

(16) Distribution of different varieties of fowls to the villagers.

(17) Starting of poultry units in key village areas.

(18) Holding of the meetings of the Livestock Improvement Board at Centres other than Government Livestock Farms.

(19) Schemes for the improvement of livestock in Chingleput district.

(20) Development of the District Livestock Farm at Orathanad.

(21) The revocation of the Government Order allotting the building now occupied by the Superintendent, District Livestock Farm, to the Taluk office, Orathanad.

(22) Compulsory castration of all scrub bulls in a specified taluk or area and legislation for the enforcement of the same.

(23) Inclusion of approved cross breed bulls in the Government Premium Scheme.

(24) Facilities for transport by rail of dry cows from the city to mufassal at reduced rates.

(xx) Milk-supply.

55. (a) The collection and distribution of milk to public for consumption in the State were looked after by various organizations like Co-operative Milk Supply Unions and Societies, Private Dairies in addition to the Government Livestock Farms, Government Milk Factory and the private milkmen. The biggest of all the Co-operative Milk Supply Unions is the Ayyanavaram Co-operative Milk Supply Union, which handles the largest quantity of milk serving the public of Madras City and its suburbs.

(b) *Private dairies.*—The private dairies that were functioning in the districts are detailed below :—

District.	Name of dairy.
(1) Madras	1 Loyola College Dairy, Nungambakkam Farm.
(2) Chingleput ..	2 Dairy Farm of Messrs. C.M.V.R. Agricultural Corporation, Chunampet.
(3) Tiruchirappalli ..	3 St. Joseph's College Dairy Farm, Tiruchirappalli.
	4 Southern Railway Dairy Farm, Golden Rock.
	5 Central Jail Dairy Farm, Tiruchirappalli.
	6 Dalmia Dairy Farm, Dalmianagar.

District.	Name of dairy.
(4) Madurai	7 Narendra Dairy Farm, Neikkarapatty.
	8 Dairy Farm, Idayakkottai.
(5) Tirunelveli ..	9 Dairy Farm, Angu Vilas, Dindigul.
	10 Vaniankulam Estate Dairy Farm.
	11 Denavoor Missionaries Dairy Farm.
	12 Dairy Farm, Agricultural Farms, Limited, Ramayampatti.
(6) Coimbatore ..	13 Dairy Farm at T.V.S. Farm, at Eravadi.
	14 S. P. Subbaroya Gounder's Dairy Farm, Modakkurichi.
(7) Nilgiris	15 Municipal Dairy, Ootacamund.
(8) Malabar	16 Hebbar's Dairy Farm, Kalmandapam.
	17 Nambisan's Farm, Kalmandapam.
	18 Sri Krishna Dairy Farm, Vadakkanthurai.
	19 Parakulam Dairy Farm, Venganoor.
	20 Kakkoor Dairy Farm, Kozhikode.
	21 Ayinibad Dairy Farm, Badagara.

(c) *Government Milk Factory, Teynampet.*—The Government Milk Factory, which was started under the Revenue Board, to augment the milk supply to the city by supplementing with toned milk and reconstituted milk, was handed over to the Animal Husbandry Department on 1st October 1955 whence "toned milk" was produced exclusively instead of reconstituted milk. This was done with a view to supply fresh clean whole milk to the public at cheaper cost. This was done by toning up the buffaloes' milk in all its qualities. The toned milk produced at this factory was certified on investigation by the Bio-chemical Laboratory of Madras University to be as good as cow's milk in biological and nutritive values.

The factory was equipped with all necessary plants such as,

- (1) Refrigeration plant.
- (2) Milk Pasteurisers.
- (3) Homogenisers.
- (4) Cooler.
- (5) Automatic Refrigerating Plant.
- (6) Bottle cleaning machine.
- (7) Can washing unit.
- (8) Boiler.
- (9) Milk pumps, etc.

The quantities of milk produced during the year are detailed below :—

	LB.
Reconstituted milk	337,265
Toned milk	1,186,933

NOTE.—Four thousand lb. of reconstituted milk produced were distributed free to the poor folk and children on 'More Milk Day'. Besides the toned milk, milk products such as ice cream, rose milk were also produced at the factory for sale to public at cheaper cost. Thus 5,498 lb. of rose milk and 2,473 cups of ice cream were manufactured during the year.

The sale price of milk and milk products during the year are given below :—

Milk per bottle of 1 pint—Re. 0-5-0 (Re. 1 local Madras measure).

Ice cream per cup of 3 oz.—Re. 0-2-6.

Rose milk per cup of 6 oz.—Re. 0-2-0.

Distribution of milk to the various parts of city was undertaken through regional distributors employed on commission basis.

2. SHEEP AND GOATS.

A. Sheep.

56. Though the State may be having a good proportion of sheep and goats in its livestock population, their quality and condition in respect of wool and meat production are not up to the standard, as they are expected to be. The rearing of sheep in rural areas is mostly with the main object of manuring and not on commercial aspects of wool and mutton except in Nilgiris areas, where flocks of woolly sheep, that too of low quality are seen. The result was that the breeding, and rearing of these were at the lowest standard and the department had to take up the task of improving the sheep from all aspects (viz.), breeding, care and management and wool production through persuasion, propaganda and demonstration. The development activities on sheep was carried out by the department through the Sheep Breeding Farm, Ootacamund, Sheep Breeding Station at Livestock Research Station, Hosur, and the three sheep shearing demonstration units at Coimbatore, Madurai and Cuddalore. The details of location, area, etc., of the farms are furnished in Table XI (b) herein annexed :—

(i) Sheep Breeding Farm, Ootacamund.

57. (a) The object of the farm is to standardize the present woolly sheep in Nilgiris in its wool qualities, to improve its carcass weight, to supply good stud rams to the public, to grade up the local sheep and to study the disease problems under farm conditions. The farm has also undertaken investigation to establish suitable grasses that will withstand the weather conditions of the area. For the purpose of improving the wool of local stock, both in quality and quantity by cross-breeding, ten Romney Marsh rams were received during the year from Australia.

(b) *Strength*.—There were 475 animals at the beginning of the year as against 394 in the last year.

There were 113 additions and 91 disposals as detailed below :—

Receipts.				Disposals.			
By births ..	..	..	103	By deaths ..	..	..	25
„ purchase ..	..	..	10	„ sale for breeding ..	..	..	30
			—	„ culling and auction ..	..	..	35
			—	„ other disposals ..	..	..	1
Total ..			113				—
			—	Total ..			91
							—

Thus there were 497 animals at the end of the year as against 475 in the last year. The breedwar and classwar details are given below :—

Breeds.	Rams.	Ewes.	Ram lambs.	Ewe lambs.	Total.	Cows.	Bullocks.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Nilgiris ..	71	322	39	55	487	..	..
Romney Marsh ..	10	..	..	..	10	..	..
Seindhi ..	..	..	..	..	..	1	..
Cross-bred ..	..	..	..	..	..	..	2
Total ..	81	322	39	55	497	1	2

(c) *Wool yield*.—During the year shearing of wool was done in two seasons, (viz.), in October–November and February–March in two batches but the animals were shorn only once in a year. Four hundred and thirty-six animals were shorn yielding a total quantity of 505 lb. 1 oz. working out an average yield of 1 lb. 2.5 oz. per animal as against 1 lb. 1.2 oz. in the previous year. Details of average classwar and the best performance are given below :—

	Average yield per animal.		Highest yield.	
	LB.	OZ.	LB.	OZ.
Rams ..	1	4.9	2	4
Ewes ..	1	3.2	2	6
Yearlings ..	0	15.5	{ 1	10 (Ram lamb).
			{ 1	15 (Ewe lamb).

The ten Romney Marsh rams received from Australia yielded a total quantity of 57 lb. of wool working out an average of 5.7 lb. per animal. The maximum yield was 6 lb. 4 oz. whereas the minimum was 4 lb. 12 oz. Three of the rams gave the best performance of 6 lb. 4 oz. each in wool yield.

(d) *Wool analysis*.—During the shearing operations wool samples were collected for analysis and study of characters. A total of 909 samples were collected of which 449 were sent to Wool Analysis Laboratory, Poona, and 460 were analysed at the Wool Analysis Laboratory, Ootacamund.

(e) *Season and rainfall*.—A total rainfall of 61.53 inches in 94 days was received during the year as against 52.8 inches in 101 days in the previous year.

(f) *Pasture and cultivation*.—13.32 acres of land were under cultivation during the year. Various exotic frost resistant grasses were tried on this farm in addition to intensive cultivation of fodder crops such as berseem, oats, maize, Italian rye and lucerne. It is noteworthy that the farm was continued to be self-sufficient in its fodder requirements. The fodder problem in the farm and in Ootacamund taluk is acute from November to April as the natural grasses of the area completely destroyed by frost besides the existing pasture grasses being very poor in nutritive value. Fifty trials to improve the existing pasture with frost resistant variety of grasses were undertaken. Love grass, fascine, cock's foot,

perennial rye, smooth brome, which are all of American origin, were grown with encouraging results.

(g) *Soil conservation*.—Contour trenches and drainage channels were dug upon all over the reclaimed areas and rotational grazing was carried out in the pasture lands.

(h) *Incidence of diseases*.—There was no incidence of contagious diseases during the year. All the animals in the farm were vaccinated in advance as a prophylactic measure with Cl. Welchii Anaculture.

(i) *Mortality*.—Twenty-five animals died during the year due to non-contagious causes like enteritis, and debility as against 20 in last year. The mortality rate worked out to 4.3 per cent as against 4.65 per cent in the previous year. The increase in the number of deaths was due to debility and old age, as most of the ewes maintained, were very old being over eight years.

(j) *Receipts and expenditure*.—Receipts during the year were Rs. 4,612-12-0 as against Rs. 921 in the previous year. The increase is due to the sale of breeding stock to Community Projects and National Extension Service Schemes. The expenditure during the year was Rs. 39,155-9-0 as against Rs. 29,425-4-3 in the last year. The increase was due to the fact that Wool Analysis Laboratory was opened at Ootacamund during the year.

(ii) Wool Analysis Laboratory, Ootacamund.

58. The laboratory was opened during the year but had to be temporarily closed for want of trained personnel till 31st August 1955. This laboratory is to aid the breeding programme through analysis of wool. During the year 169 samples of wool were washed, dried and measured. The mean length was calculated by statistical methods with measurements recorded for 300 fibres for each of the sample.

(iii) Livestock Research Station, Hosur.

59. (a) Sheep breeding is going on in the farm since 1st April 1938 when this farm was taken over by this department. The Indian Council of Agricultural Research was contributing up to 31st March 1952 towards the "Madras Sheep Breeding Scheme" started in this farm in 1938. Thereafter, the Madras Government had taken over the scheme.

(b) The objects of the sheep breeding in this farm are as given below :—

(i) To evolve white woolly sheep for dual purpose with a foundation stock of Bellary sheep;

(ii) to make available Bikanir rams for introduction among the flocks of woolly sheep in the State in order to improve their wool qualities; and

(iii) to make available Mandya rams for introduction among flocks of hairy sheep in Madras State in order to improve their mutton qualities.

(c) The following breeds of sheep were maintained in this farm :—

(1) Bellary, (2) Bikanir, (3) Bikanir-Bellary graded, and (4) Mandya.

(d) *Strength*.—There were 301 sheep at the beginning as against 376 in the last year. There were 178 additions and 193 disposals during the year as detailed below :—

Additions.			Disposals.		
By birth	..	..	178	By culling and auction	..
				„ deaths	..
				„ sale for breeding	..
					Total ..
					126
					45
					22
					193

Thus at the end of the year there were 286 sheep as against 301 in the last year. The reduction in number is on account of disposing of the entire flock of Bikanir-Bellary graded as most of them reacted to Johnin test, their progenies were found to be not thriving well. The breedwar and classwar strength as on 31st March 1956 is given below :—

Breed.	Rams.	Ewes.	Ram lambs.	Ewe lambs.	Total.
Bikanir	12	53	25	26	116
Bellary	4	8	3	2	17
Mandya	22	66	29	36	153
Total ..	38	127	57	64	286

(e) *Matings*.—Rams of different breeds were mated with the ewes of their respective breeds, but cross-bred ewes of Bikanir-Bellary graded flock were mated with pure Bikanir rams.

The mating seasons were two, one in April-May and the other in October-November. The details of mating with the results are furnished below :—

Serial number and breed of ram used for mating.		First mating—April-May			Second mating—October-November		
		Number of ewes put.	Number of ewes served.	Number of ewes lambd.	Number of ewes put.	Number of ewes served.	Number of ewes lambd.
1 Bellary R.	No. 796	6	6	4	4	4	4
2 Bikanir R.	15	17	17	10	..	..	..
3 Do.	23	18	16	12	..	..	..
4 Do.	42	..	..	..	18	18	12
5 Do.	62	..	..	..	19	19	10
6 Do.	50	14	14	7	..	..	..
7 Do.	42	..	..	..	5	5	Auctioned for lambing.
8 Mandya ..	No. 7	21	21	12	..	..	..
9 Do. ..	13	21	21	18	..	..	..
10 Do. ..	4	..	..	..	22	22	12
11 Do. ..	18	..	..	..	23	23	14

(f) *Fertility percentage.*—Fertility rate percentage is worked out as detailed below for the first mating season only, as the same could not be done for the second season on account of the fact that the lambings were not over of second mating.

Breed.	Fertility percentage.
	PER CENT
Bellary	66.6
Bikanir	61.7
Mandya	71.4

(g) *Shearing.*—The sheep were shorn after being washed and dried with improved shears and shearing machines twice during the year in September and March. The details on shearing are furnished below :—

Breed.	Average number of sheep shorn during the year.	Total wool yield for both the seasons.	Average yield per head over the whole flock.
		LB. OZS.	LB. OZS.
Bellary	14	33 8	2 6½
Bikanir	79.5	187 4	2 5½
Bikanir cross Bellary graded	25	39 2	1 9

Mandya flock of sheep was also clipped once during the year. One hundred and fifty sheep were clipped yielding 93 lb. of hair with average yield of 9.9 oz.

(h) *Wool yield.*—The study on wool yield of sheep sexwar was carried out as in the previous year and the details are given below :—

Breed.	Adults.				Yearlings.			
	Rams.		Ewes.		Rams.		Ewes.	
	LB.	OZ.	LB.	OZ.	LB.	OZ.	LB.	OZ.
Bellary	3	35/9	2	2½	..	..	1	4
Bikanir	3	3	2	2	2	15½	2	7½
Bikanir cross Bellary	..	..	..	..	..	..	..	..
First cross	..	..	..	..	..	..	..	..
Second cross	2	8	1	7	..	..	..	..
Third cross	2	8	1	7	..	..	1	8
Fourth cross	2	3½	1	13	..	..	1	10

Some of the best performances for the different breeds are given below :—

Breed.	Sex.	Tag number.	Average yield of wool.
			LB. OZ.
Bellary	Ram	843	4 0
	Ewe	911	2 10
Bikanir	Ram	21	4 8
	Ewe	129	2 12
Bikanir cross, Bellary—			
Second cross	Ram	585	2 8
	Ewe	633	2 2
Third cross	Ram	606	2 8
	Ewe	648	1 14
Fourth cross	Ram	661	2 5
	Ewe	656	1 14

(i) *Body weight.*—All sheep are weighed after shearing and their average body weight are furnished below :—

Serial number and name of breed.	Average body weights in pounds.			
	Adults.		Yearlings.	
	Rams. (2)	Ewes. (3)	Rams. (4)	Ewes. (5)
1 Bellary	88.33	63.5	..	28.8
2 Bikanir	60.0	50.3	34.5	33.6
3 Bikanir cross Bellary—				
Second cross	105.0	61.8	..	..
Third cross	88.0	50.8	27.0	35.8
Fourth cross	75.5	54.5	..	36.5

(j) *Incidence of diseases in the farm.*—There was no incidence of contagious diseases in the farm. The other disease conditions prevailed during the year with the mortality are furnished below :—

Serial number and name of disease or condition.	Number of deaths.
1 Verminous enteritis	4
2 Pericarditis	3
3 Debility	15
4 Abortion	1
5 Born weak	4
6 Hepatitis	1
7 Enteritis	2
8 Endocarditis with nephritis	1
9 Amphistomiasis	2
10 Pneumonia	4
11 Gastritis	1
12 Partial Atelectasis of lung	3
13 Tympanitis	3
14 Postpartum paralysis	1
Total	45

(k) *Mortality.*—Forty-five animals died during the year out of a total number of 479 animals working out a percentage of 9.4 as against 12.8 per cent in the last year.

(iv) Sheep Shearing and Demonstration Units.

60. The three sheep shearing and demonstration units at Coimbatore, Madurai and Cuddalore continued to function during the year. These units conducted intensive propaganda and visual demonstrations on better production and clean harvesting of wool, using improved shears, grading of wool, deworming and deticking. These units also trained workers on all the above subjects. Propaganda was also done on all aspects of sheep and goats husbandry such as improving the breed by selective breeding, castration of scrub males, adjusting the mating season in such a way as to get

lambs in favourable seasons, advance protective inoculations against contagious diseases and better housing and feeding. For these purposes, breeding calendars have been drawn up for each region.

During the year, one more unit was opened in February 1956 at Kancheepuram for the benefit of the area comprising of Chingleput and North Arcot districts and Madras City.

The summary of work done by the units is furnished below :—

(i) Number of villages visited	516
(ii) Number of shearing demonstrations conducted	78
(iii) Number of sheep washed	1,098
(iv) Number of shepherds trained	55
(v) Number of castrations done	1,120
(vi) Number of rams and bucks inspected	221
(vii) Number of sheep shorn	5,094
(viii) Number of sheep dewormed	9,753
(ix) Number of sheep deticked	21,451
(x) Number of shows and exhibitions attended	22

The sheep unit at Cuddalore is vacant since 9th July 1955 due to paucity of Veterinary personnel in the department.

(v) Grading Scheme for Mutton Sheep at Hosur.

61. The scheme for improving the mutton quality of the local sheep with Mandya rams was continued during the year. Fifty rams in 1953-54 and 50 rams in 1954-55 were distributed in about 15 villages of Hosur taluk in Salem district. Controlled mating with superior rams supplemented with systematic castration, deworming and deticking operations were undertaken in these villages, the benefits of which were well realized by the rural folk on seeing the good condition of graded up progeny. The details of work done in these areas are as follows :—

Number of sheep dewormed	2,508
Number of sheep deticked	6,101
Number of sheep washed and shorn	1,076
Number of rams castrated	408
Number of lambs born to approved rams inspected	494
Number of persons trained in shearing with improved shears	22
Number of sheep shows conducted	2

(vi) Sheep development in districts.

62. Besides the work of sheep demonstration units in the various districts, development of sheep in various districts were also taken up under Community Projects and National Extension Service Schemes and through distribution of pedigree rams under Government Male Livestock Distribution Scheme.

(i) *Madurai district*.—Two Mandya rams were distributed under Male Livestock Distribution Scheme in Naikarapatti. Four

stud rams of local breed (Ramanathapuram) were purchased under local development scheme and distributed in Palani, Madurai and Dindigul taluks. Twenty stud rams of local breed were purchased under Local Development Scheme from Soundararajapuram Sheep Breeding and Cumbly Weaving Society and distributed to its members in Nagalapuram village.

Five sheep breeders' associations were formed in the following places and number of rams of local breed were distributed as noted against each :—

Location of association.	Number of rams distributed during the year.
Ammapatty	17
Kandai	5
M. Pothanadhi	8
Kilavaneri	2
Siddireddipatti	6

Fifty-six rams of local breed in Usilampatty block area and twenty-six rams of Karuvai variety in T. Kallupatti Block were distributed. The sheep breeding centres with a ram and twenty ewes each were formed in Thidiyam village.

The eight rams remaining at Chettipalayam during the year were transferred to Youth Farmers' Club at Kalladipatty.

(ii) *Ramanathapuram district*.—Twenty-eight rams of Karuvai variety were distributed during the year in Rajapalayam and Singampuneri block areas.

(iii) *Coimbatore district*.—Thirty-four Mecheri rams were distributed in Lower Bhavani Project area during the year.

(iv) *Nilgiri district*.—Four pedigree Nilgiris rams under Government Male Livestock Distribution Scheme and twenty rams under Community Development Scheme were distributed during the year in the Ootacamund block area to upgrade the local woolly variety.

(v) *Salem district*.—Twenty Mecheri rams were distributed with the 50 per cent subsidy under National Extension Service in the block areas of the district.

(vi) *Tiruchirappalli district*.—The 3 Bikanir rams and 3 Mecheri rams distributed under Local Development Scheme in the previous year continued to be maintained during the year.

(vii) *South Arcot*.—Twenty ewes and two rams of Mandya breed were sold to a ryot in Sengurichi village with a view to develop a nucleus farm for further supply of malestock around the area.

B. Goats.

63. Goat rearing though commonly found all over the State with the poor class of human folk, it is seen on an intensive scale for dairy purposes in the West Coast region only. So, this branch of Animal Husbandry was developed through the Goat Rearing Section in the District Livestock Farm, Thiruvazhankunnu, details of which are given in Table XI (c) annexed and through distribution of pedigree bucks for grading up the local stock.

(vii) District Livestock Farm, Thiruvazhankunnu.

64. (a) In the District Livestock Farm, Thiruvazhankunnu, Malabar, a Block of Malabar goats was continued to be maintained to study and improve by selective breeding and for issue of pedigree bucks to grade up the stock in villages.

(b) *Strength*.—The flock had a strength of 93 goats at the beginning of the year as against 67 in last year. There were 80 additions and 67 disposals during the year as detailed below :—

Additions.		Disposals.	
By births	80	By sale for breeding ..	11
		„ culling and auction ..	43
		„ deaths	13
		Total ..	67

Thus at the end of the year, there were 106 animals as classified below :—

Bucks	3
Does	36
Goatlings	17
Bucklings	4
Kids	46
Total ..	106

The increase in strength was due to more number of births, viz., 80 this year than in previous year (61).

(c) *Dairy*.—Out of 29.6 does in the herd on an average, 18.8 were in milk and they yielded 9,976.75 lb. of milk with a daily individual average of 1.5 lb. over the goats in milk and 0.9 lb. over the goats in herd as against 1.8 and 1.4 respectively during the previous year. The decrease in milk yield was an account of extremely adverse climatic conditions prevailed during the year with heavy rainfall.

(d) Details of some of the good performers are given below :—

Number of does.				Total yield in lb.	Number of days in milk.	Daily average yield in lb.
21	..	..	..	474	199	2.3
17	..	..	..	501.75	160	2.6
12	..	..	..	369.5	138	2.7

(e) *Incidence of diseases*.—(i) *Goat-pox*.—There were four deaths on account of this disease. Suitable prophylactic measures by way of segregation, vaccination, and treatment were undertaken to control this outbreak averting heavy losses.

(ii) *Theileriasis*.—There were three deaths due to this disease.

(f) *Mortality*.—There were 13 deaths as against 8 in the previous year working out a percentage of 7.5 as against 6.4 per cent previous year. The slight increase in the mortality was due to the adverse extreme of climatic conditions that prevailed during the year in the West Coast.

(viii) Development of goats through grading.

65. In addition to the above farm, bucks were distributed under different schemes and the services of bucks were also made available in veterinary institutions in urban areas.

(a) *Scheme for the improvement of milch goats in South Kanara*.—The object of the scheme is to improve the milk yield of the goats to augment the milk supply of the West Coast and it has been in implementation since March 1951.

At the beginning of the year, there were seven bucks under this scheme. On account of two deaths during the year, the strength at the end of year came down to five. Four hundred and forty-seven services were performed by these bucks during the year. Three hundred and twenty-seven kids were born, out of which one hundred and fifty were inspected.

It was found by survey that progenies that were born to these pedigree bucks had given more milk than their dams.

(b) A goat breeding centre was opened under National Extension Service Scheme in M. Pothanadhi village of Tirumangalam Block. Three bucks and 14 does of Tellicherry breed were supplied to different custodians. The average milk yield was $\frac{3}{4}$ to 1 of local measure. This scheme had created enthusiasm among the villagers resulting in great demand for female stock.

(c) *Bucks at stud in veterinary institutions*.—Pedigree bucks were stationed at veterinary institutions in the West Coast districts

(viz.), Nilgiris, Coimbatore, Malabar and South Kanara. The details of location are given below :—

Place of location.	Breed.	Number of bucks stationed.	Number of services performed during the year.	Number of kids born.	Number of kids inspected.
(1)	(2)	(3)	(4)	(5)	(6)
Veterinary Hospital, Ootacamund.	Jamnabari ..	1	52	20	20
Veterinary Hospital, Coimbatore.	Tellicherry ..	1	96	39	39
Veterinary Hospital, Kozhikode.	Jamnabari ..	2	182	132	56
Veterinary Hospital, Mangalore.	Tellicherry ..	2	106	34	34

3. POULTRY.

66. Poultry development work in the State was undertaken through the Poultry Research Station, Teynampet, District Poultry Farm, Cannanore, Poultry Sections in the Livestock Farm at Hosur, South Kanara, Malabar and Orathanad, the poultry demonstration units at the various veterinary institutions. Besides being practical study centres for the public, pedigree birds and eggs were supplied to the public and on an intensive scale in areas under Community Projects and National Extension Service Schemes at nominal cost and thus 3,183 birds and 31,105 eggs were distributed for rearing and hatching out respectively from these farms and units during the year.

The summary of work done at the various farms and units are details below :—

(i) Livestock Research Station, Hosur.

67. (a) In the poultry section, Livestock Research Station, Hosur, White Leghorn, Rhode Island Red, and Black Minorca breeds of poultry were maintained. There was a total strength of 475 birds at the beginning of the year as against 1,178 in the previous year. There were 1,764 additions and 851 disposals during the year as detailed below :—

Additions.		Disposals.	
By hatch	1,764	By sale for breeding	292
		By culling and sale for table ..	214
		By transfer to other stations ..	25
		By deaths and destruction ..	320
		Total	851

Thus at the end of the year there were 1,388 birds as against 475 in the last year. The increase in strength was due to reduce mortality and reduction in number sold for breeding and in culling during the year. There was reduction in the sale for breeding as

the opening strength was very low on account of severe culling in the previous year as a measure to eradicate Avian Leucosis. The breedwar strength in the farm is detailed below :—

	Cocks.	Hens.	Chicks.	Total.
White Leghorn	7	16	459	482
Rhode Island Red	9	29	710	748
Black Minorca	2	5	151	158
	18	50	1,320	1,388

(b) *Egg production.*—During the year 9,075 eggs were collected as against 17,515 eggs in the last year. The decrease in the egg collection was due to fact that the number of hens during the year was less (viz., 50 than in the last year (viz.), 92. The reduction in number of birds was due to severe culling of birds for old age and poor yield during the last year. The receipt and disposals of eggs during the year are detailed below :—

Receipts.		Disposals.	
Opening balance	193	Kept for hatching	4,485
Collected in the year ..	9,075	Cold for hatching	852
		Transfer to other stations ..	100
		Sold for table	2,945
		Fed to chicks	734
		Transfer to Artificial Insemination centres.	125
		Closing balance	27
	9,268		9,268

(c) *Percentage of hatchability.*—The overall percentage of hatchability for the 4,485 eggs set for hatching was 39.3 for the year.

(d) *Performance of birds.*—There were an average of 68.1 laying hen of all breeds which yielded 9,075 eggs giving an overall flock average of 133.2 eggs per hen as compared to 137.2 laying hens yielding 17,515 eggs with an average of 127.6 in the previous year. Breedwar performance are furnished below :—

Breed.	1955-56.			1954-55.		
	Average number of laying hens.	Total egg yield.	Average per hen.	Average number of laying hens.	Total egg yield.	Average per hen.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
White Leghorn	25.1	3,231	128.7	51.5	6,247	121.3
Rhode Island Red ..	33.1	4,948	149.5	66.5	8,936	134.4
Black Minorca	9.9	896	90.5	19.2	2,339	121.8

The decrease in average for Black Minorca breed was due to the fact that only three birds were in their first year of laying.

The number of pullets that had completed their first year laying are given below breedwar with details of their performance—

	Number of birds, completed their first year of laying.	Number of eggs laid in the pullet year.	Average egg yield.
White Leghorn ..	14	1,702	121.6
Rhode Island Red.	6	1,097	182.8
Black Minorca ..	3	422	140.7

(e) *Incidence of diseases*—(i) *Fowl-pox*.—There were two outbreaks of Fowl-pox, during the year in April and December 1955 resulting in the death of 11 birds. Periodical vaccination of young birds over six weeks of age were carried out.

(ii) *Avian Leucosis Complex*.—This disease continued to be prevalent in the farm during the year causing the death of 101 birds. Visceral and neural forms of this disease were generally met with.

(iii) *Roup*.—There was only one death due to this disease.

(iv) *Visceral Gout and uratic infiltrations*.—There were four deaths on account of these conditions.

(v) The other conditions that were causing mortality in the year are noted below :—

	Number of deaths.
1 Internal hæmorrhagic	3
2 Hatched weak	59
3 Rupture oviduct	1
4 Hatched out crippled	24
5 Enteritis	17
6 Paralysis	73
7 Debility	14
8 Egg bound	1
9 Unabsorbed yolk	33
10 Pericarditis	1
11 Egg peritonites	12
12 Crop bound	26
13 Tumour in abdomen	1
14 Growth in the ovary	2
15 Visceral Gout and uratic infiltration	4

(f) *Mortality*.—There were 314 deaths as against 756 in the previous year giving out a mortality rate of 14.1 per cent only as against 25.9 per cent of last year.

(ii) *Poultry Research Station, Teynampet, Madras.*

68. (a) This station was started in the year 1941, with a view to study (i) the performance of exotic birds under the existing environmental conditions, (ii) for production and supply of exotic birds of eggs to the public of the State, (iii) to study the potentialities like increased egg yield, body weight, etc., of local indigenous

birds under farm conditions, (iv) to evolve thereupon by selective breeding a strain noted with increased production and (v) to serve as a central institution for training both departmental and private candidates in poultry husbandry.

The following breeds of exotic poultry were maintained in the farm during the year :—

(1) White Leghorn, (2) Rhode Island Red, (3) Black Minorca, (4) Light Sussex, (5) Brown Leghorn and (6) Newhampshire.

(b) *Strength*.—At the beginning of the year there were 1,149 birds inclusive of five geese as against 758 in the last year. During the year there were 4,260 additions and 1,875 removals as detailed below :—

Additions.		Disposals.	
By hatch	1,492	Sold for breeding	316
By receipt from other station.	90	Sold for table	380
Received under Pilot Scheme.	2,678	By transfer	144
		By deaths and destruction	1,035
Total ..	4,260	Total ..	1,875

Thus at the end of the year, there was a strength of 3,534 birds. The increase in strength was due to increased number received by hatch and from abroad under pilot scheme. The breedwar strength is detailed below :—

Breed.	Cocks.	Hens.	Chicken.	Total.
White Leghorn	4	139	2,012	2,155
Rhode Island Red	5	102	926	1,033
Black Minorca	1	13	1	15
Light Sussex	2	48	30	80
Brown Leghorn	5	19	98	122
Indigenous	2	14	103	119
Newhampshire	..	..	10	10
Total ..	19	335	3,180	3,534

Goose.—The five geese maintained were culled out during the year and disposed of for table.

(c) *Egg production*.—During the year 19,157 eggs were collected as against 8,292 in the last year. Receipt disposes of eggs during the year, are detailed below :—

	1955-56.
Balance on 1st April 1955	100
Number collected	19,157
Number received from other stations	99
Number set at farm	4,103
Number sold for settings	6,428
Number sold for table	5,684
Number broken and fed to chicks	2,014
Transfers to other stations	926
Balance on 31st March 1956	201

Strict selection was made in eggs for hatching and morphologically unfit eggs were sold for table. Thus only 29.9 per cent of the eggs received were disposed of during the year.

(d) *Performance of birds.*—Trap nesting was done for all the laying birds at the farm with a view to record the performance of individual birds breedwar. The breedwar details of performance are given below :—

Breed.	Average number of layers.	During the year 1955-56.	
		Number of eggs.	Average yield.
White Leghorn	76.1	7,974	104.74
Rhode Island Red	56.4	5,936	109.10
Black Minorca	1.4	117	81.25
Indigenous	13	1,070	81.80
Light Sussex	25	2,132	85.07
Brown Leghorn	20.7	1,683	81.35

There was an increase in the yield among all the breeds during the year. There were no pullets that completed their first year of laying during this year.

(e) *Percentage of hatchability.*—Out of a total of 3,103 eggs set during the year, 1,492 chicks were hatched out working out a percentage of 36.3 as against 34.6 per cent in the previous year.

(f) *Incidence of diseases.*—(i) *Contagious Corysa.*—This disease was prevalent in the farm during the year and was imported through the Newhampshire birds supplied from North India under Pilot Scheme. There were 27 deaths on account of this disease. The Veterinary Disease Investigation Officer (Poultry), Ranipet, undertook the preventive measures by periodical inspection and treatment with Dihydro-streptomycin.

(ii) *Avian Leucosis Complex.*—Two hundred and twenty-six birds died of this scheme. The outbreak of this disease was also traced to be through the imported chicks from outside the State. Prophylactic measures by way of segregation, culling after blood test were adopted.

(iii) *Coccidiosis.*—There were only 15 deaths due to this disease. The incidence of this disease was kept under control by rearing chicks on wire net flooring and periodical dosing with sulphamezathine.

(iv) There were deaths due to other causes, details of which are given below :—

Egg peritonitis	39
Crop Bound	34
Hatched weak	623
Enteritis	53

(g) *Mortality.*—One thousand and twenty-two birds died during the year working out a percentage of 18.9 as against 8.8 per cent in the previous year. The large number of deaths were due to Avian Leucosis Complex and 'Hatched weak' chicks which were mainly from eggs of young pullet and imported stock.

(h) *Investigation and research—Selective breeding among indigenous birds.*—(i) This work has been in progress for the past 15 years. Groups of local breeds from Kalahasthi and Visakhapatnam were selected for the purpose. Selective breeding was done with the object of increasing the size of the egg, minimizing the period of broodiness and achieving comparatively early maturity. The performances of birds in respect of size of eggs were satisfactory.

(ii) *Sexual maturity.*—The average number of days taken for maturity in respect of hens that began their first laying during the year was 223 as compared to 220 days in the last year. Individually a bird had come to maturity as early as 183 days from date of hatch.

(iii) *Broodiness in Desi hens.*—Attempts to break down broodiness were continued during the year. Broody coops were utilized which induced to a certain extent break down of broodiness.

(i) *General.*—(i) A pair of selected birds of White Leghorn, Rhode Island Red, Light Sussex and Desi breeds were exhibited from this farm in the All-India Poultry Show at Naugur during February 1956.

(ii) In the event of organizing the First Annual Madras State Poultry Show during the year, steps were taken to form a poultry club with leading elites interested in poultry rearing and the poultry breeders of this State.

(iii) Three Veterinary Assistant Surgeons from South Kanara district and seven private candidates were given training in Poultry Husbandry in this station. This station formed one of the venues for the students and trainees on educational tours from various institutions like Agricultural Colleges, Veterinary Colleges and Indian Veterinary Research Institute, Mukteswar.

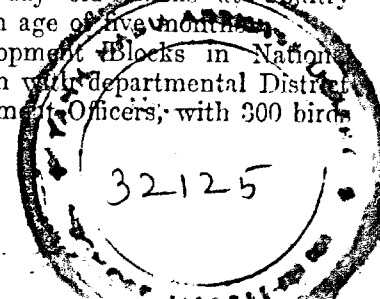
(iii) Pilot Poultry Scheme.

69. During the year the Government of India chose Madras as one of circles for its implementation of the Pilot Scheme for Poultry Development, mainly intended for improving poultry in the country which will provide better eggs and poultry meat. The estimated cost of the scheme is Rs. 65,000.

The scheme envisages the following items of works :—

(i) Rearing of 3,000 imported day old chicks at Poultry Research Station, Teynampet, up to an age of five months.

(ii) Location of Poultry Development Blocks in National Extension Service areas in consultation with departmental District Officers, Collectors and Block Development Officers; with 300 birds.



in each block by distributing them to persons in units of one cockerel, two pullets of five months age at concessional rate of Rs. 2 per bird.

(iii) Starting of three demonstration farms with 200 birds each in places where no such farms or centres are existing nearby already.

(iv) Distribution of 10 birds each to 20 persons in three towns or cities at concessional rate of Rs. 5 per bird.

(v) Training of selected persons from Block Development areas for a period of 1½ months with a stipend of Rs. 20 per month.

(vi) Distribution of accessories like, wire netting, etc., for the protection of existing poultry to selected interested villagers.

During the year 2,678 day-old chicks were received in hatches and reared in the farm. A total amount of Rs. 45,000 was sanctioned during the year for this scheme towards cost of import of these birds and rearing them. Foodgrains, construction equipments were purchased during the year. One hundred and thirty-four Newhamshire birds were distributed in the city under this scheme. The places for the location of the three demonstration centres were chosen as detailed below :—

(i) Polavakkam in Tiruvallur taluk of Chingleput district.

(ii) Thiruvankulam in Pudukkottai of Tiruchirappalli district.

(iii) Budemgudi in Chidambaram taluk of South Arcot district.

Names of persons for training, for supply of poultry equipment and for distribution of poultry units were called for from the Block Development Officers for final selection.

(iv) *District Poultry Farm, Cannanore, Malabar.*

70. (a) This poultry farm opened in the year 1948, is situated at a distance of 4½ miles from Cannanore and White Leghorn and Rhode Island Red breeds of poultry are maintained here.

(b) *Strength.*—There were 382 birds at the beginning of the year as against 575 in the last year. During the year there were 1,366 additions and 1,218 disposals during the year as furnished below :—

Additions.		Disposals.	
By hatch	1,366	By sale for breeding	244
		By culling and sale for table	114
		By transfer to other stations	105
		By deaths and destructions	755
			<u>1,218</u>

Thus there were 530 birds at the end of the year. The strength under each breed are furnished below :—

Breed.	Cocks.	Hens.	Chicks.	Total.
Rhode Island Red	2	44	77	123
White Leghorn	6	106	295	407
Total	8	150	372	530

(c) *Egg production.*—During the year, 13,016 eggs were collected in the farm as against 8,619 eggs in the last year. The receipts and disposals of eggs during the year are detailed below :—

Receipts.		Disposals.	
Opening balance	69	Kept for hatching	4,195
Collected during the year	13,016	Sold for hatching	5,123
		Transferred to other stations	1,759
		Sold for table	1,025
		Fed to chicks	793
		Closing balance	190
Total	13,085	Total	13,085

(d) *Percentage of hatchability.*—Out of 4,195 eggs set during the year, 1,366 were hatched out giving a percentage of 32.6 as against 26.3 in the last year.

(e) *Performance of birds.*—(i) Out of 118.1 laying hens during the year, 13,016 eggs were collected with an average of 110 eggs per hen as against 102 of the previous year. The performance of birds should be considered more than satisfactory, when compared to the previous year in view of the fact of extremely adverse climatic conditions were prevailing during the year in the west coast.

Breedwar performance of birds are furnished below :—

Breed.	1955-56.		
	Average number of hens maintained.	Number of eggs laid.	Average yield per hen.
White Leghorn	91.4	10,117	110
Rhode Island Red	26.7	2,899	109

(ii) The details of hens that completed their pullet year during this year are given below :—

Breed.	Number of pullets that completed their pullet year.	Number of eggs laid in pullet year.	Average egg yield.
White Leghorn	35	4,070	116.3
Rhode Island Red	7	986	140.3

(f) *Incidence of diseases.*—There was no outbreak of contagious disease in the farm on account of the fact that prophylactic measures were taken promptly during the year.

(g) *Mortality.*—There were 751 deaths working out to 42·8 per cent during the year as against 20·8 per cent. This was due to the fact that the deaths were mostly among very young chicks which could not withstand the extremely unfavourable climatic conditions prevailed in this region during the year.

(v) *District Livestock Farm, Koila, South Kanara.*

71. (a) A poultry section was continued to be run in this livestock farm with the following breeds:—

(1) White Leghorn, (2) Rhode Island Red, (3) Desi and (4) Rhode Island Red Desi Cross.

(b) *Strength.*—There was a total strength of 723 birds at the beginning of the year as against 250. There was 937 additions and 1,342 disposals during the year as detailed below:—

Additions.			Disposals.		
By hatch	..	933	By sale for breeding	..	692
By transfer from other station.	4		By culling and sale for table.	..	363
			By death and destruction	..	286
			By transfer	..	1
Total	..	937	Total	..	1,342

Thus at the end of the year there were 318 birds as against 723 in the previous year. The decrease in strength is due to the low receipt by hatch during the year (viz.), 933 as against 1,741 chickens hatched out in the previous year. The breedwar strength are furnished below:—

Breed.	Cooks.	Hens.	Chicks.	Total.
White Leghorn	.. 6	24	69	99
Rhode Island Red	.. 8	40	150	198
Desi	.. ..	..	..	..
Rhode Island Red Cross	..	..	..	..
Desi.	..	20	1	21
Total	.. 14	84	220	318

(c) *Egg production.*—During the year 10,038 eggs were collected as against 9,860 in the previous year. Receipts and disposals of eggs during the year are detailed below:—

Receipts.			Disposals.		
Opening balance	..	302	Kept for hatching	..	3,258
Collections in the year	..	10,038	Sold for hatching	..	1,038
			Sold for table	..	5,100
			Fed to chicks	..	696
			Closing balance	..	198
Total	..	10,340	Total	..	10,340

(d) *Performance of birds.*—(i) There were a total average number of 93·3 laying hens in the whole unit which yielded 10,038 eggs working out an average yield of 111·4 per hen as against 112·5 in the previous year. The breedwar egg yield and average yield are furnished below:—

Breed.	Average number of laying hens.	Total yield of eggs.	Average yield per hen.
White Leghorn	.. 21·2	2,183	103
Rhode Island Red	.. 47·7	5,275	111
Desi	.. 6·2	380	61
Rhode Island Red Cross Desi	.. 18·2	2,186	120

(ii) The details on the number of pullets that completed their first year of laying are shown below:—

Breed.	Number of pullets that completed their first year of laying.	Number of eggs laid in pullet year.	Average egg yield.
White Leghorn	6	633	105·5
Rhode Island Red	24	3,321	138·4
Desi	..	..	..
Rhode Island Red Cross Desi.	9	1,096	121·8

(e) *Percentage of hatchability.*—Out of a total of 3,258 eggs set for hatching, 933 chicks were received thus giving a percentage of 23·7.

(f) *Incidence of diseases.*—(i) *Fowl-pox.*—This disease was prevalent during the year causing mortality to eight birds. The disease was mild on account of preventive vaccinations carried out and the disease was controlled by enforcing all prophylactic measures.

(ii) *Avian Leucosis.*—There were six deaths on account of this disease. Suitable preventive measures were adopted to arrest the further spread of the disease.

(iii) *Coccidiosis.*—There were three deaths only on account of this disease, as a result of timely treatment of chicks with sulphamethazine.

(g) *Mortality.*—There were 278 deaths during the year working out a percentage of 16·8 as against 7·5 in the last year. Eighty per cent of the deaths were due to causes other than contagious and infectious diseases (viz.), extremely adverse climatic condition prevailed during the year in the west coast proving detrimental to the chicks born weak and of young age.

Cross-breeding experiments.—Observations on Desi birds by grading up with Rhode Island Red cockerels were continued. During the year the farm average yield for Desi Cross Rhode Island Red hen was 120 and that of Desi Cross Rhode Island Red pullets that completed the pullet year during the year was 121·8.

(vi) District Livestock Farm, Orathanad, Tanjore.

72. A poultry section was started newly attached to this farm during the year on 10th July 1955 with a unit of White Leghorn and Rhode Island Red breeds of poultry received from the Poultry Research Station, Teynampet.

(a) *Strength*.—The unit was started with a strength of 44 birds as detailed below :—

Breed.	Cocks.	Hens.	Chicks.	Total
White Leghorn	2	20	..	22
Rhode Island Red	2	20	..	22
	—	—	—	—
Total	4	40	..	44
	—	—	—	—

(b) *Strength*.—During the year there were 282 additions and 152 disposals as detailed below :—

Additions.		Disposals.	
By hatches	278	By sale for breeding	63
By transfer from other stations. ..	4	By culling and auction	23
		By deaths	66
	282		152

Thus at the end of the year there were 174 birds as detailed below :—

	Cocks.	Hens.	Chicks.	Total.
White Leghorn	3	11	87	101
Rhode Island Red	3	8	62	73
	—	—	—	—
	6	19	149	174
	—	—	—	—

(c) *Egg production*.—During the year 2,190 eggs were collected and 343 eggs were received from the stations. The details of receipt and disposals of eggs during the year are shown below :—

Receipts.		Disposals.	
By collection in the farm	2,190	Kept for hatching	826
By receipt from other stations. ..	343	Sold for hatching	1,107
		Sold for table	279
		Fed to chicks	310
		Closing balance	11
Total	2,533	Total	2,533

(d) *Percentage of hatchability*.—Out of 826 eggs set for hatching, 273 were hatched out giving a percentage of 33.7.

(e) *Performance of birds*.—There were an average of 31.8 laying hens of all breeds, which yielded 2,190 eggs giving an overall flock average of 65.7 eggs per hen. Breedwar performances are detailed below :—

Breed.	Average of hens.	Total egg yield.	Average yield per hen.
White Leghorn	16.0	1,222	84.2
Rhode Island Red	15.8	968	62.3

(NOTE.—The birds were received as pullets and they started laying only after some period only of their arrival in this farm. The figures worked out for nine months only, as the farm was started in July 1955 only.)

No pullet completed their first year of laying during the year.

(f) *Incidence of diseases*—(i) *Fowl-pox*.—This disease prevailed in the farm and five chicks died. The disease was controlled by adopting prophylactic measures.

(ii) *Avian Leucosis Complex*.—This disease was prevalent during the year. There were 14 attacks, of which two died and the balance of 12 were disposed as a prophylactic measures to avert further spread of the disease.

(iii) *Coccidiosis*.—Young chicks were affected with Coccidiosis. The attack was mild resulting six deaths among chicks only.

(g) *Mortality*.—Sixty-six birds died during the year working out a percentage of 20.2 most of the deaths being among chicks only. Fifty birds died due to other causes like cyclonic weather, born-weak, etc.

(vii) Poultry development in districts.

73. Poultry rearing a cheap source for an essential valuable human food was encouraged in both rural and urban areas by various means, namely—

(i) supply of exotic pedigree birds and eggs at nominal cost from Government farms and demonstration units;

(ii) subsidizing the existing private farms;

(iii) through distribution of birds and eggs free of cost or at half cost in the areas under National Extension Service and Community Project;

(iv) opening of model units in Community Projects, National Extension Service areas; and

(v) rendering of free technical aid to the private poultry farms.

• (viii) *Poultry Demonstration units in veterinary institutions.*

74. There were 20 demonstration units attached to 20 veterinary institutions and during the year one unit was opened at Veterinary Hospital, Pudukkottai, and the units at Ootacamund and Coonoor were closed during the year. Thus at the end of the year there were 19 units in 19 veterinary institutions.

The stock of birds, receipt and disposal of eggs and birds in each of the demonstration unit are furnished in statements annexed. A noteworthy feature of this year is that except the newly started unit at Pudukkottai all other units were in a position to sell birds for breeding purposes to the public and most of the units did not dispose of any bird for table by culling or auction which reflects the good condition and quality of birds maintained in these units during the year.

A total number of 1,576 exotic birds for breeding and 31 birds for table were sold as against 1,248 and 488 respectively in the last year. A total number of 16,507 eggs on sale to public for hatch and 4,938 eggs for hatching in institutions were used during the year as against 16,990 eggs and 3,970 eggs respectively during the year. 69.2 per cent of the total eggs received from these units were utilized for hatching as against 59.5 per cent in the previous year.

(a) *North Arcot district.*—(1) The American Arcot Mission Farm was continued to be given the subsidy during the year for running the 12 model poultry units in this district and a sub-farm at Arni.

(i) The 12 model poultry units distributed 200 cockerels at the rate of Rs. 3 per cockerel to be concentrated within a radius of 25 miles from Katpadi in Madras State to grade up the local birds. The Central Farm was paid a subsidy of Rs. 3 for each cockerel sold. The details of work are given below :—

(1) Cocks distributed	200
(2) Eggs collected	28,186
(3) Eggs sold for table	18,002
(4) Eggs sold for hatching	1,974
(5) Eggs set for hatching	710
(6) Demonstrations arranged	14
(7) Exhibitions conducted	9

(ii) The sub-farm at Arni continued to function during the year with White Leghorn birds. The farm distributed 29 cockerels at the rate of Rs. 2 and it was paid a subsidy of Rs. 4 per bird for 25 birds. The details of work are given below :—

(1) Cocks distributed	29
(2) Eggs collected	2,294
(3) Eggs sold for table	999
(4) Eggs sold for hatching	1,208
(5) Eggs set for hatching	87
(6) Demonstrations arranged	12
(7) Exhibitions conducted	1

(2) *Pilot scheme for chick hatchery and poultry processing subsidized by Indian Council of Agricultural Research at American Arcot Mission Farm, Katpadi.*—This scheme was sanctioned by Indian Council of Agricultural Research during the year for incurring a sum of Rs. 2,31,320 and was in operation from 1st June 1955 within a radius of 10 miles from Katpadi.

The object of the scheme is to hatch out 20,000 chicks a year and to rear them for four months when they are to be sold at the rate of Rs. 1-8-0 per bird or in exchange for a Desi fowl. The Desi fowls so collected have to be slaughtered and kept in refrigeration for being sold to public through the Co-operative Egg Marketing Society together with the sale of table eggs. The Mission has to import 1,000 chicks from abroad to be reared for four months and then distributed among 20 to 25 farmers who will supply eggs for hatch.

During the year, 696 birds were distributed at Rs. 1-8-0. The following 5 units with 50 birds and over were started during the year :—

Location of unit.	Number of birds.		Total.
	White Leghorn.	Rhode Island Red.	
Sholanur ..	50	50	100
Chengottai ..	50	..	50
Adukkhanparai ..	100	70	170
Willipulur ..	110	..	110
Tathuvacheri ..	50	..	50
	360	120	480

In addition to the above 480 birds, 196 birds to the individuals to raise poultry industry and 20 birds to Block Development Officer, Tiruvannamalai, for introduction in his block were supplied under this scheme.

(3) In the four National Extension Service Blocks of the district, 44 poultry units were established up to the end of year with a strength of 504 birds. From these units 7,143 eggs were sold for hatching in the area.

(b) *Madurai district.*—(i) There were four poultry farms maintained by private individuals at Perichipalayam, Bodinaickanoor, Madurai and Pattiveeranpatti.

(ii) *Poultry farm at Basic Agricultural Training Centre, T. Kallupatty.*—This farm is run with a unit of Rhode Island Red birds with a view to impart practical training in poultry husbandry to the Gramasevak Trainees, trained out of this centre for work in National Extension Service Schemes. Birds and eggs were also sold for breeding to the public of the area.

At the beginning of the year there were 3 cocks, 16 hens and 35 chicks of Rhode Island Red breed and 9 Desi hens. During the year 1,436 eggs were collected of which 243 eggs for hatching and 918 for table and 189 eggs were set for hatching and 21 eggs fed to chicks in the unit. Twenty-one birds were sold to public for rearing. At the end of the year there were 5 cocks 32 hens and 42 chicks of Rhode Island Red breed and 11 Desi hens.

(iii) In National Extension Service areas of this district, 19 poultry units were established up to date and 1,947 eggs were sold for hatching, 60 White Leghorn Cocks were distributed in Kalladipatty village under exchange scheme of Desi cocks.

(c) *Ramanathapuram district*—(i) *Poultry Production Centre, Malli*.—This centre continued to function at Malli in Rajapalayam Block of National Extension Service Scheme with a unit of White Leghorn breed with a view to grade up the local Desi birds at the centre itself on an intensive scale for distribution in all of the National Extension Service Blocks of this district. At the end of the year there were 8 cocks, 26 hens and 41 chicks of White Leghorn Breed, 108 birds of graded variety and 6 Desi hens. During the year a total of 9,203 eggs of exotic, graded and Desi breed and 170 exotic and 92 graded birds were produced during the year. Details of birds and eggs distributed in the area are given :—

	Exotic.		Graded.		Desi.	
	Birds.	Eggs.	Birds.	Eggs.	Birds.	Eggs.
Sold for breeding and hatch..	17	418	44	2,025	..	..
Sold for table	..	1,097	..	4,312	2	448

(ii) In the National Extension Service areas besides the distribution of eggs and birds from Poultry Production Centre, Malli, 8 poultry units were maintained by private individuals at Rajapalayam, Mamsapuram, Pudupatti, Maharajapuram and Srivilliputtur. Fifty-four exotic cocks were distributed for grading and 214 birds for rearing.

(d) *Tanjore district*—*Poultry Production Centre, Saliamangalam*.—This centre continued to function with a unit of White Leghorn breed. At the end of the year there were 5 cocks, 20 hens and 47 chicks, at the centre and 120 birds were sold for breeding in National Extension Service area. Out of a total of 3,057 eggs of exotic graded and Desi varieties collected during the year, 1,567 exotic eggs were sold for hatching and 450 exotic and graded varieties were set for hatching in the centre. The balance of eggs was disposed partly by sale for table purpose and the rest fed to chicks of the centre.

(e) *Chingleput district*.—(i) There are two private farms in the district one at Thimmavaram and another at Mathivakkam.

The farm at Thimmavaram had a strength of 169 birds of exotic breed (White Leghorn and Rhode Island Red) and 100 Desi birds. The farm at Mathivakkam had a strength of 200 birds of Rhode Island Red, White Leghorn, Black Minorca and Light Sussex breeds.

(f) *Tiruvannamalai district*.—(i) There were 84 private poultry units with a strength of 1,497 exotic birds in the district during the year in addition to the 34 backyard poultry units organized under the guidance of the departmental staff. A total number of 25,820 eggs were produced of which 6,412 eggs were distributed on sale for hatching.

(ii) The poultry farm at Central Jail continued to function during the year with 9 cocks and 18 hens of White Leghorn breed and 4 Desi hens. One thousand three hundred and thirty-three eggs were collected during the year, 271 eggs were sold for hatching and 72 set for hatching.

(g) *South Arcot district*.—(i) There were 4 private poultry farms in the district as detailed below :—

(1) Sub-poultry Farm at Muttathur run by American Arcot Mission, Katpadi.

(2) Poultry Farm at Appampet in Gingee taluk.

(3) Kandan Poultry Farm at Valavanoor in Villupuram taluk.

(4) Poultry unit run by co-operative society at Kutteripattu in Tindivanam taluk.

(ii) In National Extension Service block areas 45 poultry units were established up to the end of the year.

(h) *Malabar district*.—(i) A poultry unit was maintained in Androth Island with a strength of seven Rhode Island Red birds.

(ii) Twelve Rhode Island Red cockerels were distributed in Androth Island for grading up the local breed.

(iii) In the Community Project area two poultry units, one at Kottagi and the other at Elapully, were maintained consisting of 65 and 24 exotic birds respectively.

In the National Extension Service block areas, 192 exotic birds and 483 eggs were distributed besides the establishment of 11 backyard poultry units.

(i) *South Kanara district*.—(1) The poultry farm at Kinnigoli under Community Project Scheme was continued to function with 12 cocks, 16 hens and 20 chicks of Rhode Island Red breed, at the beginning of the year. Hundred and fifty-nine birds and 243 eggs were sold out to public for breeding during the year. At the end of the year there was a stock of 5 cocks, 15 hens and 44 chicks. Two hundred and six exotic birds in Community Project area and 400 birds in National Extension Service areas were distributed during the year for breeding.

(j) *Erode*.—Two poultry units were started during the year, one at Kavundapady and the other at Malayampalayam, under Community Project Scheme. The unit at Kavundapady was started on 28th October 1955 with a strength of 4 cocks, 23 hens and 2 chicks of Rhode Island Red breed. The unit at Malayampalayam was started on 23rd July 1955 with a stock of 20 hens and 3 cocks of White Leghorn breed.

(k) *Tirunelveli district*.—There were three demonstration units in each of the three National Extension Service blocks in the district at Cheranmahadevi, Sankarankoil and Kovilpatti.

(l) *Salem district*.—(i) There were four private poultry farms in the district at Mallur, Tiruchengode, Belukkurichi and Chiunabelagondapalli.

(ii) The poultry farms at Tiruchengode and Mallur were included in the Government subsidy scheme during the year for the sale of birds and eggs to the public at the rates fixed by the Government.

(iii) The poultry farm at Mallur maintained White Leghorn, Rhode Island Red, Black Minorca, Plymouth Rock, Australops, Light Sussex, Wyndotte breeds of poultry. Seven hundred and twenty birds were sold to the public and 1,080 chicks were received by hatch during the year in the farm. Nine thousand and six hundred eggs were collected during the year, out of which 6,000 eggs were sold for hatching.

(iv) The poultry unit at Gandhi Ashram sold 454 eggs and 2 cockerels and purchased an incubator with yearly subsidy of Rs. 1,600 granted by the Government.

4. HORSE BREEDING.

75. Horse breeding in this State is not up to the standard in the rural and urban areas of this State except among Race Horses in Madras City and Ootacamund, as mostly ponies only are maintained in other areas for transport purposes.

With a view to develop the local stock of ponies, stallions were maintained in veterinary institutions at Pollachi, Tiruppur and Erode of Coimbatore district and in Livestock Research Station, Hosur.

The number of services performed by the stallions at veterinary institutions are given below :—

	Place of location.					Number of services.
Pollachi	..	..	..	..	..	24
Erode	..	..	..	..	..	34
Tiruppur	..	..	..	..	..	46

In the Livestock Research Station, Hosur, 5 stallions, 2 mares, 2 fillies and 1 colt were maintained during the year. One mare was sold for breeding and 2 stallions were loaned to two breeders interested in pony rearing for maintaining them for stud purposes.

5. PIG REARING.

76. Pig rearing with exotic breeds in the State was not common during the year except for a few people, who were interested in rearing exotic pigs, details of which are given below :—

Chingleput district.—A farm consisting of 50 pigs including Berkshire breed of pigs was maintained by Messrs. R. N. Buck at Pudupakkam village.

Tirunelveli district.—A small farm with 19 pigs of exotic breed, viz., African Yorkshire was maintained by Mr. Thanapandian at Mulakad near Tuticorin.

Tiruchirappalli district.—Berkshire breed of pigs were maintained in the district by private bodies and persons as detailed below :—

- (1) St. Joseph's College, Tiruchirappalli.
- (2) St. Paul Seminary, Tiruchirappalli.
- (3) Dr. Rajan's Farm, Vengimalai.
- (4) Sri Thangarajan, Amoor.

6. TRADE IN LIVESTOCK.

77. (a) Trade in livestock is generally carried on, in the State through weekly cattle shandies and annual cattle fairs. There are a number of such weekly shandies and cattle fairs in almost all the districts. There is a daily cattle market at Tiruvottiyur in Chingleput district managed by the Tiruvottiyur Cattle-Breeding and Marketing Society. The number of cows and buffaloes brought into the City of Madras by rail and road for the purpose of milk from the Andhra State during the year is given hereunder :—

Cows	...	...	...	...	...	...	44,660
Buffaloes	...	...	...	...	...	...	10,320
Total							54,980

The Tirunelveli district is noted for having as many as 14 cattle fairs in a year from October to February, each of which has a duration of 15 days. In the Ramanathapuram district, sheep and goats were exported from the ports of Kilakarai and Tondi to Kats in Ceylon. Cattle were brought into the South Kanara district from the neighbouring districts of the Mysore and Bombay States through recognized routes and ghats, viz., Hosangady, Chowinady, Shirnady and Bisle. Cattle and ponies from Mysore and Andhra States were also brought into the shandi at Tiruvannamalai in North Arcot district.

The prices of work-bullocks, she-buffaloes and sheep prevailing at the important cattle market were reported to the Director of Statistics, Madras.

(b) A statement showing the export and import of livestock and livestock products during the year as furnished by the Assistant Collector of Customs, Madras, is given below :—

	Quantity. CWT.	Value. RS.
<i>Exports.</i>		
Raw goat skins	5,306	21,47,973
Raw sheep skins	..	..
Raw cuttings of hides and skins.	18,142	1,89,881
Raw cow-calf skins	..	..
Raw buffalo hides	..	..
Tanned cow-calf skins	17,073	83,76,735
Tanned buffalo hides	10,375	22,77,180
Tanned cow hides	2,09,478	6,01,81,067
Tanned buffalo-calf skins	21,918	74,01,558
Tanned goat skins	96,184	7,54,98,043
Tanned sheep skins	54,797	5,18,81,482
Horn tips and pieces of horns.	21,915	6,76,298
Tanned other skins	..	..
Ivory, manufactured	..	..
Bone meal	..	..
Horn meal	..	..
Bones for manurial purposes.	..	..
Bones for manufacturing purposes.	11,863	36,68,558
<i>Animals—</i>		
(a) Cattle excepting sheep and goats.	215 Nos.	2,09,635
(b) Sheep and goats	34,424 „	19,08,224
(c) Horses	1 „	1,000
(d) Other kinds	2,064 „	1,48,992
Leather, unwrought	2,137 „	20,19,448
Hair—Goat hair (other than Angora).	4,365,306 lb.	32,01,894
Other kinds of hair	74,943 „	1,44,699

<i>Imports.</i>		
Leather—unwrought	21,578	3,47,151
Roller skins	1,472	1,67,715
Hides, raw	25,646 Cwt.	20,03,309
Skins, tanned	1,489 „	1,39,903
Hides, tanned	..	..
Skins, raw	8,715	9,85,095
Bacon and ham	761 Cwt.	1,92,306
Milk food for infants and invalids.	13,851	43,13,477
Whole milk including cream (evaporated or condensed).	26,178 Cwt.	23,80,570
Dried skimmed milk	..	..

Imports—cont.

	Quantity. CWT.	Value. RS.
Animal's horns	29 Nos.	2,02,349
Other kinds	4,077 „	66,030
Dried milk or powder, whole.	31,781 cwt.	37,19,829
Dried milk or powder skimmed.	140,035 „	87,08,359
Dried milk condensed or powder—		
Whole	..	..
Butter	1,130 „	3,30,066
Ghee	..	..

(c) The details of export and import of livestock from the Madras State and the average prices for the year for hides and skins in Madras City and Dindigul as furnished by the State Marketing Officer are given below :—

Exports and Imports of Livestock.

		<i>Imports.</i>					
		<i>Horses.</i>		<i>Sheep and goats.</i>		<i>Others.</i>	
		NUMBERS.	RS.	NUMBERS.	RS.	NUMBERS.	RS.
<i>Foreign imports from—</i>							
Ceylon	5	51,730	..	..	..	1,754	2,192
United Kingdom	25	1,20,759	..	..	..	..	..
Singapore	..	..	..	..	..	727	489
Tanganyika	..	..	..	..	..	48	21,403
West Germany	..	..	..	..	..	10	2,967
Kenya Colony	..	..	..	..	..	970	4,942
West Pakistan	..	..	..	..	..	1	150
Federated Malayan States.	..	..	..	..	..	516	377
<i>Coastal Imports—</i>							
West Bengal	..	..	..	39	1,820	..	..
<i>By Rail—</i>							
Cattle	..	..	..	2,805	..	..	..

		<i>Exports.</i>					
		<i>Horses.</i>		<i>Cattle.</i>		<i>Sheep and goats.</i>	
		NUMBERS.	RS.	NUMBERS.	RS.	NUMBERS.	RS.
<i>Foreign exports to—</i>							
Ceylon	..	..	..	100	95,635	31,017	14,434
Brazil	..	..	..	115	1,14,000	..	..
United Kingdom	..	..	..	..	..	2	95
West Germany	..	..	..	..	..	40	66,367
Singapore	..	..	..	..	..	1	50
<i>Coastal exports—</i>							
West Bengal	..	..	..	..	..	21	41,005
<i>By Rail—</i>							
Cattle	..	..	..	7,806	..	..	..

	Receipts.			Expenditure.		
	RS.	A.	P.	RS.	A.	P.
(c) District Livestock Farm, Malabar.	25,057	13	6	98,005	13	0
(d) District Livestock Farm, Pudukkottai.	14,776	4	9	78,260	11	3
(e) District Livestock Farm, Orathanad.	40,617	10	0	1,37,551	11	9
(f) Sheep Farm, Ootacamund.	4,418	4	0	39,155	9	0
(g) Poultry Research Station, Teynampet.	4,920	9	0	39,126	0	4
(h) District Poultry Farm, Cannanore.	2,793	14	3	9,808	0	3

The expenditure during the year was less than the previous year in all the farms except in the case of District Livestock Farms at Malabar and Pudukkottai, Sheep Farm at Ootacamund and Poultry Research Station, Teynampet.

The rise in expenditure in the District Livestock Farm, Malabar, was not to any appreciable extent (viz.) Rs. 980-9-0 only in excess of previous year. The rise in expenditure in District Livestock Farm, Pudukkottai, was due to the conversion of the post of Veterinary Livestock Inspector to that of Veterinary Assistant Surgeon with higher scale of pay and emoluments and due to the payment of deputation allowances to the former Superintendent who was sent abroad for advance training. The rise in expenditure at Sheep Farm, Ootacamund, was due to the purchase of 10 Romney Marsh rams from Australia and due to the equipment purchased for the Wool Analysis Laboratory. The rise in expenditure at Poultry Research Station, Teynampet, was due to the Pilot Poultry Scheme started during the year.

There was considerable increase in receipts at District Livestock Farm, Orathanad, Sheep Farm, Ootacamund, Poultry Research Station, Teynampet and District Poultry Farm, Cannanore.

CHAPTER VI—VETERINARY HEALTH SERVICE.

80. The ailments of the livestock population of the State were attended to by the department through the veterinary institutions opened at various centres depending upon the demand from the public and the need of the area concerned. These institutions in general are intended for the treatment of morbid cases both surgical and medical, for the castration of scrub male animals and to serve as infirmaries for the animals remanded under the society for Prevention of Cruelty to Animals Act and to conduct post-mortem on dead bodies brought by both the public and Police.

The morbid cases are given treatment in these institutions free of cost provided the monthly income of owners of patients does not exceed Rs. 200. Facilities for treatment of cases as in-patients are also provided in all the major institutions. These institutions are of different grades depending upon the density of livestock population of the areas and they are designated as veterinary hospitals and veterinary dispensaries.

Though these institutions were originally intended for attending to the clinical side in the past, say, a score of years back, later on, the activities relating to the development aspect were also gradually introduced in most of the major institutions. Thus, in these institutions pedigree bulls, bucks and stallions of various breeds are maintained for breeding purposes through natural services and Artificial Insemination besides the establishment of demonstration poultry units. The details of these activities are given in the following chapters on "Livestock". Clinical laboratories were also added on to the important institutions for early diagnosis and treatment of diseases both at hospitals and in the field. There were in all 94 veterinary institutions at the beginning of the year.

81. *Veterinary institutions.*—During the year under report, 10 veterinary dispensaries were opened with contribution from public and/or local bodies at the following places:—

District.	Place of location.
North Arcot	Kilpennathur.
	Vaniyambody.
South Arcot	Kattumannar koil.
Salem	Mettur town.
Malabar	Fort Cochin.
Coimbatore	Bhavani.
South Kanara	Balthangadi.
Tanjore	Thiruvaiyar.
	Orathanad.
	Konerirajapuram.

Thus at the end of the year there were 104 institutions (veterinary hospitals 35, veterinary dispensaries 69) excluding the 4 veterinary institutions in the Madras and the city maintained by Madras corporation and 14 under community projects administration.

Forty-three institutions were located in Government buildings of which 25 buildings were electrified. Nineteen institutions were equipped with refrigerators and 30 institutions with microscopes. In all the departmental institutions, a total number of 260,048 morbid cases were treated and 46,061 castrations were done as

again 251,568 cases treated and 43,134 castrations in the last year. The number of cases treated and castrations done in some of the important institutions are given below :—

	Number of cases treated.	Number of castrations done.
1 Veterinary Hospital, Madras Veterinary College.	15,420	71
2 Veterinary Hospital, Coimbatore.	7,792	63
3 Veterinary Hospital, Saidapet.	8,358	285
4 Veterinary Hospital, Salem.	6,906	111
5 Veterinary Dispensary, Madurai City.	6,282	621
6 Veterinary Hospital, Tiruchirappalli.	5,195	407

The details of location of veterinary institutions in the districts are given below :—

(i) *Madras City*.—There were two veterinary hospitals one at Saidapet and the other at the Madras Veterinary College, Vepery. A veterinary dispensary is located at Rayapuram in a rental building. The veterinary hospital at Saidapet was electrified and equipped with a refrigerator. In the veterinary institutions at Saidapet and Rayapuram 12,078 cases were treated and 74 castrations were performed during the year as against 10,147 cases and 23 castrations in the previous year.

The details on the hospital attached to the Madras Veterinary College has been furnished in Chapter III.

(ii) *Chingleput district*.—There were six veterinary institutions as shown below :—

Kind of institutions.	Place of location.
Veterinary hospital	1 Concheepuram.
Veterinary dispensary	2 Kaliyampoondi.
	3 Tiruvallur.
	4 Madurantakam.
	5 Chingleput.
	6 Ponneri.

Government buildings were provided for the first two institutions and the rest were accommodated in rented buildings. The veterinary dispensaries at Chingleput, Tiruvallur and Ponneri were equipped with refrigerators for cold storage purposes.

During the year 15,842 cases were treated in these institutions and 2,937 castrations were done as against 14,242 cases of 2,261 castrations in last year.

(iii) *North Arcot district*.—There were 5 institutions at the beginning of the year and 2 more veterinary dispensaries were opened during the year. The 7 institutions were located in the district as shown below :—

Kind of institutions.	Place of location.
Veterinary hospital	1 Vellore.
	2 Thiruvannamalai.
	3 Ranipet.
Veterinary dispensary	4 Arkonam.
	5 Tiruppattur.
	6 Vaniyambadi.
	7 Kilpennathur.

The veterinary hospitals were located in Government buildings where as the veterinary dispensaries were located in rented buildings. Refrigerators were supplied to the institutions at Vellore and Tiruppattur.

In these institutions 15,784 cases were treated and 3,295 castration were performed during the year as against 13,954 cases of 2,826 castrations in the previous year.

The veterinary dispensaries at Tiruppattur and Vaniyambadi were run with 50 per cent contribution from the respective municipal councils towards recurring and non-recurring expenditure. The District Board of North Arcot district contributed 25 per cent of the recurring expenditure for the veterinary dispensary at Arkonam.

(iv) *South Arcot district*.—There were five veterinary institutions inclusive of the veterinary dispensary opened at Kattumannarkoil during the year situated at the following centres :—

Kind of institutions.	Place of location.
Veterinary hospital	1 Cuddalore.
	2 Kallakurichi.
Veterinary dispensary	3 Chidambaram.
	4 Tindivanam.
	5 Kattumannarkoil.

Both the hospitals were located in Government buildings whereas all the veterinary dispensaries were located in rented buildings. The Panchayat Board at Kattumannarkoil contributed towards the rent of the building of the veterinary dispensary.

During the year 13,216 cases were treated and 2,262 castrations were done as against 11,635 cases and 2,023 castrations in the previous year.

(v) *Salem district*.—There were five institutions inclusive of one veterinary dispensary opened during the year at Mettur Dam. They were located as shown below :—

Kind of institutions.	Place of location.
Veterinary hospital	1 Salem.
Veterinary dispensaries	2 Krishnagiri.
	3 Namakkal.
	4 Tiruchengode.
	5 Mettur Dam.

All the above institutions were located in rented buildings except the veterinary hospital at Salem for which Government buildings existed. The veterinary hospital at Salem was also equipped with a refrigerator and a microscope.

In these institutions 15,325 cases were treated and 1,066 castrations were done during the year as against 13,229 cases and 856 castrations in the last year.

(vi) *Tirunelveli district*.—There were five veterinary institutions in the district as detailed below :—

Kind of institutions.	Place of location.
Veterinary hospital	1 Tirunelveli.
Veterinary dispensary	2 Sivagiri.
	3 Tenkasi.
	4 Tuticorin.
	5 Kadayanallur.

The above institutions were located in rented buildings except the first two which were housed in Government buildings. The veterinary hospital Tirunelveli was equipped with a refrigerator for cold storage purposes and a microscope for examination of specimens. The District Board, Tirunelveli, contributed 50 per cent of recurring cost for the institutions at Tirunelveli and Tuticorin and the Kadayanallur Panchayat Board contributed rupees 1,500 towards the running cost of the dispensary at Kadayanallur.

In the above institutions, 9,329 cases were treated and 3,206 castrations were done in this year as against 8,490 and 2,973 respectively in the previous year.

(vii) *Madurai district*.—Ten veterinary institutions were in the district as detailed below :—

Kind of institutions.	Place of location.
Veterinary hospital	1 Tallakulam.
	2 Periyakulam.
	3 Kodaikanal.
Veterinary dispensary	4 Madurai City.
	5 Dindigal.
	6 Bodinaickanoor.
	7 Tirumangalam.
	8 Palani.
	9 Cumbum.
	10 Sholavandan.

The institutions Nos. 1 to 4 above were located in Government buildings and the rest were accommodated in rented buildings. The veterinary dispensary, Madurai, was equipped with a microscope and a refrigerator.

During the year 25,361 cases were treated and 6,274 castrations were performed as against 23,179 and 6,619 in the previous year.

(viii) *Ramanathapuram district*.—There were seven veterinary institutions in the district as shown below :—

Kind of institution.	Place of location.
Veterinary hospital	1 Rajapalayam.
	2 Sivaganga.
Veterinary dispensary	3 Virudhunagar.
	4 Karaikudi.
	5 Devakkottai.
	6 Srivilliputhur.
	7 Ramanathapuram.

The Karaikudi Municipality contributes Rs. 1,000 per annum for the local institution. During the year 14,290 cases were treated and 4,403 castrations were performed as against 14,119 cases and 4,285 castrations in the previous year.

(ix) *Tanjore district*.—There were 14 institutions in the district at the beginning of the year. Three more veterinary dispensaries were opened during the year at Thiruvaiyaru, Orathanad and Konerirajapuram. The locations of institutions in the district are shown below :—

Kind of institutions.	Place of location.
Veterinary hospital	1 Tanjore.
	2 Kumbakonam.
	3 Tiruvarur.
	4 Nagapattinam.
	5 Mannargudi.
Veterinary dispensary	6 Mayuram.
	7 Tiruppanandal.
	8 Sirkali.
	9 Pattukkottai.
	10 Arantangi.
	11 Thiruthuraiipoondi.
	12 Papanasam.
	13 Koradacheri.
	14 Nannilam.
	15 Thiruvaiyaru.
	16 Orathanad.
	17 Konerirajapuram.

Eight of these institutions were in Government buildings, 2 in rent-free buildings and the rest in rented buildings. The institutions at Tanjore, Tiruvarur, Kumbakonam and Koradacheri were equipped with microscopes and the veterinary hospital at Tanjore was provided with a refrigerator.

In all these institutions, a total number of 36,454 cases treated and 9,211 castrations were performed as against 31,568 cases and 8,125 castrations in the previous year.

(x) *Tiruchirappalli district*.—There were seven institutions in the district as shown below :—

Kind of institutions.	Place of location.
Veterinary hospital	1 Tiruchirappalli.
	2 Pudukkottah.
Veterinary dispensary	3 Ariyalur.
	4 Musiri.
	5 Karur.
	6 Lalgudi.
	7 Manapparai.

The institutions 1 to 3 above, are in Government buildings and the rest are in rented buildings. The veterinary hospital at Tiruchirappalli was equipped with a refrigerator and microscope. The veterinary hospital at Pudukkottai also was equipped with a microscope.

In all these institutions, 19,249 cases were treated and 3,905 castrations were done as against 17,929 cases and 3,387 in the previous year.

(xi) *Coimbatore West (inclusive of Nilgiri district)*.—There were 13 institutions in the district as shown below :—

Kind of institutions.	Place of location.
Veterinary hospital	1 Coimbatore.
	2 Pollachi.
	3 Vettaikaranpudur.
	4 Udumalpet.
	5 Ootacamund.
	6 Coonoor.
Veterinary dispensary	7 Singanallur.
	8 Ramachandrapuram.
	9 Valparai.
	10 Annur.
	11 Mettupalayam.
	12 Gudalur.
	13 Malayandipatnam.

The institutions at Coimbatore, Pollachi, Vettaikaranpudur, Udumalpet, Ooty, Coonoor, and Ramachandrapuram were located in Government buildings and the rest were in rented buildings.

The institutions at Annur, Ramachandrapuram and Vettaikaranpudur were run with 50 per cent contribution from the Coimbatore District Board and that at Singanallur was run with 25 per cent contributions from each of the Panchayats at Singanallur and Upplipalayam. The Municipal Council at Mettupalayam contributed 50 per cent towards the running cost of the local institution.

The institutions at Ootacamund and Coimbatore were equipped with refrigerators. Microscopes were provided in the institutions at Coonoor, Pollachi, Ootacamund and Coimbatore.

In all these institutions 41,516 cases were treated and 3,757 castrations were done as against 38,358 cases and 3,448 castrations in the previous year.

(xii) *Coimbatore East*.—There were eight institutions in the district inclusive of the Veterinary Dispensary newly opened at Bhavani during the year. They were located as shown below :—

Kind of institutions.	Place of location.
Veterinary hospital	1 Erode.
	2 Tiruppur.
	3 Dharapuram.
Veterinary dispensary	4 Nathakadayur.
	5 Gobichettipalayam.
	6 Sathyamangalam.
	7 Kollegal.
	8 Bhavani.

Institutions Nos. 1 to 3 above, were in Government buildings, No. 4 in rent-free buildings and the rest in rented buildings. The institutions at Kollegal and Sathyamangalam were equipped with refrigerators. The institutions at Erode and Tiruppur were equipped with microscopes.

During the year 17,180 ailing animals were treated at these institutions and 3,582 castrations were done as against 16,275 cases and 3,460 cases in the last year.

(xiii) *Malabar district*.—There were six institutions in the district inclusive of the Veterinary Dispensary opened at Fort Cochin during the year. They were located as shown below :—

Kind of institutions.	Place of location.
Veterinary hospital	1 Kozhikode.
	2 Palghat.
Veterinary dispensary	3 Cannanore.
	4 Tellichery.
	5 Kalpetta.
	6 Fort Cochin.

The institutions 1 and 2 above were in Government buildings the rest in rented buildings. The veterinary hospital at Kozhikode was equipped with a refrigerator. The municipal council at Fort Cochin contributed Rs. 1,000 per annum towards the maintenance cost of the local veterinary institution.

During the year 15,947 cases were treated and 1,232 castrations were done as against 13,365 cases and 959 castrations in previous year.

(xiv) *South Kanara district.*—There were 5 institutions in the district as shown below :—

Kind of institutions.	Place of location.
Veterinary hospital	1 Mangalore.
	2 Puthur.
Veterinary dispensary	3 Kanhangad.
	4 Belthangady.
	5 Karkala.

The institutions 1 and 2 above are in Government buildings and No. 4 is in a rent-free building provided by local Panchayat, whereas 3 and 5 are in rented buildings.

During the year 7,967 cases were treated and 1,367 castrations were done in these institutions as against 4,706 cases and 1,074 castrations in the previous year.

82. *Dispensaries maintained by the Corporation of Madras.*—During the year four free dispensaries were continued to be maintained at the Cattle Depots of the Corporation of Madras. The details of work done at these institutions are given below :—

Place of location.	Number of cases treated.	Number of castrations done.
Vyasarpady	12,470	11
Pudupet	14,097	6
Mylapore	12,554	38
Thyagaroyanagar	6,125	..

83. *Clinical laboratories.*—With a view not only to investigate into diseases peculiar to particular areas but also to avoid the delay, in diagnosis and control of diseases both in hospital and field by laboratory confirmation, caused is sending suspected materials to the Madras Veterinary College and the Veterinary Disease Investigation Officers, 10 regional clinical laboratories were opened during the year at the rate of one for each district. There were 14 clinical laboratories as detailed below :—

Place of location.	Jurisdiction of the laboratories.
1 Madras Veterinary College ..	Madras City.
2 Veterinary Hospital, Tirunelveli.	Tirunelveli district.
3 Veterinary Hospital, Kozhikode.	Malabar district.
4 Veterinary Hospital, Coimbatore.	Coimbatore district.
5 Veterinary Hospital, Salem ..	Salem district.
6 Veterinary Hospital, Vellore..	North Arcot district.
7 Veterinary Hospital, Cuddalore.	South Arcot district.
8 Veterinary Hospital, Kancheepuram.	Chingleput district.
9 Veterinary Hospital, Ramanathapuram.	Ramanathapuram district.
10 Veterinary Hospital, Tallakulam.	Madurai district.

Place of location.	Jurisdiction of the laboratories.
1 Livestock Research Station, Hosur.	Hosur taluk and farm.
2 District Livestock Farm, Koila.	South Kanara district.
3 District Livestock Farm, Orthanad.	Tanjore district.
4 District Livestock Farm, Pudukkottai.	Tiruchirappalli district.

In all the laboratories, at the veterinary institutions a total number of 5,452 specimens were received for examination of which 1,905 were found positive. The details of specimens examined are given below :—

Kind of specimen.	Number received.	Number examined.	Number positive.	Number negative.
(1)	(2)	(3)	(4)	(5)
Faeces	3,377	3,377	1,361	2,016
Blood smears	1,356	1,356	199	1,157
Urine smears	10	10	2	8
Discharges	5	5	1	1
Nasal washings	328	328	248	80
Skin Scrapings	350	350	82	268
Urine	1	1	1	..
Fluid from odema	11	11	2	9
Others	14	14	6	8
Total	5,452	5,452	1,905	3,547

84. *Criminal poisoning.*—Materials from suspected cases of poisoning were sent to the Chemical Examiner, Government of Madras. Thus 132 materials from 54 animals died, suspicious of poisoning, were sent for examination. The details of examination are given below :—

Nature of material examined.	Number examined.	Number detected.	Kind of poison.
(1)	(2)	(3)	(4)
Viscera and contents	52	10	Arsenic (7). Zincphosphide (3).
Tissues other than Viscera	..	..	..
Excreta or stomach contents	65	9	Arsenic (8). Zincphosphide (1).
Miscellaneous articles	15	9	Arsenic (3). Oleander (1). Nitrite (1). Zincphosphide (4).

85. *Post-mortem and wound certificates.*—The staff of the department examined and certified 268 cases of wounds and malicious injuries. They conducted post-mortem on 189 cases and issued certificates during the year.

86. *Society for the Prevention of Cruelty to Animals.*—Under the Act for prevention of cruelty to animals, this department through its Veterinary Assistant Surgeon and veterinary institutions

provided for the examination and for infirmaries for the remand and treatment of animals until trial and after trial, if necessary. Thus during the year 11,011 cases were convicted of which 4,213 were put in the infirmaries for treatment as in-patients.

87. *Glanders inspection.*—The Glanders Inspector and the District Veterinary Officer, Madras, inspected 10 horses that landed at the Madras Port. Fourteen horses were malleined of which 13 belonged to the King Institute, Guindy.

The Veterinary Assistant Surgeon in charge of Glanders Inspection work made periodical visits to cattle sheds, jutka stands and State hospital milking yards for their maintenance under hygienic conditions. Thirteen thousand seven hundred and eighty-four bovines and 1,057 ponies were inspected during the year in various parts of the City.

88. *Veterinary Council.*—Under the existing rules issued by the Ministry of Health, Government of India, the Veterinary practitioners in India are debarred from prescribing certain drugs as sulphanamides, barbiturates and the like as they are not included among the registered practitioners. As there are yet no authorized registers of Veterinary Practitioners as on the medical side, the Indian Council of Agricultural Research had suggested that steps should be taken to remedy the defect, at least partially, by preparing registers in stages which would be deemed as interim authorized registers.

With this object in view the Government of Madras ordered in the previous year the opening of an interim authorized register of Veterinary Practitioners. The Veterinary practitioners thus registered up to the end of year was 403 in this state as published in the *Fort St. George Gazette*, dated 12th October 1955. Six more applications received during the year are pending registration.

89. *Private practitioners.*—Though the veterinary practice was not a lucrative one in the State, there were 36 private Veterinary Practitioners in the State most of them being retired personnel of the Animal Husbandry department.

90. *Livestock in Forest department.*—To assist the Forest department in matters relating to animal husbandry, a team of personnel consisting of an Inspector of Livestock with two Assistant Veterinary Inspectors are working in the forest areas on the western range mountains.

The management and treatment of the entire livestock, mostly elephants, of Forest department were attended to. There were 12 captures of elephants and 5 births during the year. Fourteen elephants were sold in addition to one female elephant calf sent as the gift of Prime Minister of India to the children of Canada.

The strength of livestock of Forest department has been detailed below :—

Kind of animal.	Number remaining 1st April 1955.	Additions.					Deductions.					Number remaining 31st March 1956.
		Captures.	Births.	Transfers.	Purchases.	Total.	Sales.	Destruction.	Lost.	Transfer.	Total.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Elephants ..	95	12	5	..	..	112	14	..	1	1	16	96
Buffaloes ..	4	..	..	..	..	4	..	..	..	..	..	4
Bullocks ..	2	..	..	..	..	2	..	..	..	..	..	2

There was no incidence of contagious disease among elephants during the year. But two buffaloes of Nilambur Division had survived an attack of Foot-and-Mouth disease. Three hundred and thirty-five cases of non-contagious diseases were treated during the year as against 400 in previous year.

CHAPTER VII—ITINERANT STAFF.

91. The department provides for the veterinary aid at village level besides the veterinary hospital and dispensaries, through a complement of touring staff consisting of Veterinary Assistant Surgeons, Veterinary Livestock Inspectors, stockmen and stockmen compounders. The headquarters of these staff are fixed at taluk headquarters or at important towns with a jurisdiction fixed for each of these touring billets comprising of a taluk or even less. To facilitate the treatment of animals whenever these staff are at headquarters, accommodation is provided to run a minor veterinary dispensary in each of their headquarters. These staff not only tour in villages for the control of epidemics, treatment of morbid cases and castration of scrub male animals but also run one or more first aid centres at convenient places where they visit once or twice in a week on fixed days.

Thus there were 78 minor veterinary dispensaries, 17 touring billets and 128 veterinary first-aid centres during the period under report. The minor veterinary dispensary at Vaniambadi was upgraded into a veterinary dispensary during the year. During the year, 7 new minor veterinary dispensaries were opened and 3 touring billets were converted into minor veterinary dispensaries. One new touring billet was opened at Harur in Salem district.

In all these minor veterinary dispensaries and in villages on tour 126,610 cases were treated and 39,665 castrations were done as against 138,252 cases and 37,301 castrations in the last year.

The districtwar details of location of these touring billets and minor veterinary dispensaries are given below :—

(i) *Chingleput district*.—There were five minor veterinary dispensaries and one touring billet in the district inclusive of the minor veterinary dispensary opened at Sathyavedu by closing the touring billet at Tiruvallur, during the year. The details of location are given below :—

(a) Minor veterinary dispensaries at Sriperumbadur, Tiruporur, Tiruvottiur, Cheyyur, and Sathyavedu.

(b) The touring billet at Kancheepuram.

In addition to the above, three veterinary first-aid centres were also run during the year. All the minor veterinary dispensaries are in rented buildings.

During the year, 5,611 cases were treated and 680 castrations were done as against 6,468 cases and 976 castrations in the previous year.

(ii) *North Arcot district*.—There were eight minor veterinary dispensaries and one touring billet at Panapakkam at the beginning of the year and one more was opened at Desur. The minor veterinary dispensary at Vaniambadi was converted into veterinary dispensary during the year. Thus there were 8 minor veterinary dispensaries at the end of the year in the following places :—

Cheyyar, Chengam, Arni, Polur, Gudiyatham, Ambur, Wallajah and Desur.

Four veterinary first-aid centres were also functioning during the year.

The minor veterinary dispensary at Arni was located in a Government building and those in other places were located in either rented or donated buildings.

The panchayat board at Cheyyar donated its choultry, free of rent, for the location of local minor veterinary dispensary.

During the year 11,804 cases were treated and 3,531 castrations were done as against 9,110 cases and 4,244 castrations in the previous year.

(iii) *South Arcot district*.—There were five minor veterinary dispensaries and one touring billet in the following places of the district :—

(a) Minor veterinary dispensaries at Tirunavalur, Vriddhachalam, Villupuram, Gingee and Tirukkoyilur; and

(b) Touring billet at Cuddalore.

There were no first aid centres run the district but 9 centres were functioning under National Extension Service Schemes.

During the year 7,202 cases were treated and 1,562 castrations were done in these institutions as against 10,686 cases and 2,414 castrations in the last year.

(iv) *Salem district*.—There were five minor veterinary dispensaries and one touring billet at the beginning of the year. During the year 2 minor veterinary dispensaries were opened, 1 at Denkanikota by converting the touring billet and another at Velur. One touring billet was also newly opened at Harur. The seven minor veterinary dispensaries were located at the following places :—

Athur, Rasipuram, Dharmapuri, Omalur, Hosur, Denkanikota and Velur.

In addition to these dispensaries veterinary first aid centres were also functioning during the year.

The touring staff of the district rendered treatment both on tour and at the above institutions to 17,255 ailing animals as against 12,357 in the last year. Three thousand two hundred and fifty-seven scrub animals were castrated as against 3,772 in the last year.

(v) *Tirunelveli district*.—Four minor veterinary dispensaries and two touring billets were in existence at the beginning of the year. One more minor veterinary dispensary was opened by converting the touring billet at Tiruchendur. The location of these are given below :—

(i) Minor veterinary dispensaries at Kovilpatti, Srivaikuntam, Valliyoor, Ambasamudram and Tiruchendur.

(ii) Touring billet at Sankarankoil.

The Panchayat Board, Tiruchendur, provided a rent-free building for the dispensary and the rents for the buildings of minor veterinary dispensaries at Kovilpatti and Valliyoor were borne by Sri A. Ramaswamy Doss, M.L.A. and Valliyoor Panchayat Board respectively.

Two veterinary first aid centres were also functioning during the year. Eight thousand one hundred and seventy-three ailing animals were treated and 5,837 castrations were done during the year both at these institutions and on tour as against 7,127 cases of 3,762 castrations in the previous year.

(vi) *Madurai district*.—There were four minor veterinary dispensaries and three touring billets at the beginning of the year. During the year three new minor veterinary dispensaries were opened at Allinagaram by converting and shifting the touring billet at Periyakulam at Natham and at Pannaikkadu. The details of location of these seven minor veterinary dispensaries and two touring billets are given below :—

(i) Minor veterinary dispensaries at Oddanchatram, Nilakkottai, Usilampatty, Chinnamanur, Allinagaram, Pannaikkadu and Natham.

(ii) Touring billets at Vendasandur and Madurai for running the minor veterinary dispensary at Allinagaram and local panchayat board contributes Rs. 1,000 per annum.

A total number of 10,014 cases were treated and 5,789 castrations were done during the year as against 15,861 cases and 3,655 castrations in the last year.

(vii) *Ramanathapuram district*.—There were five minor veterinary dispensaries and one touring billet at the beginning of the year. Two more minor veterinary dispensaries were opened during the year at Sathur and Tiruvadanai. The details of location of all these are given below :—

(i) Minor veterinary dispensaries at Aruppukkottai, Paramakudi, Sivakasi, Madukulathur, Tiruppattur, Sathur, and Tiruvadanai.

(ii) Touring billet at Malli.

In addition to the above, 12 veterinary first aid centres were also functioning during the year.

Ten thousand nine hundred and fifty-nine cases were treated in these institutions and in villages on tour and 2,732 castrations were done during the year as against 12,883 cases and 3,164 castrations.

(viii) *Tanjore district*.—There were six minor veterinary dispensaries and two touring billets in the district including the new minor veterinary dispensary opened at Kodavasal during the year. They were located as shown below :—

(i) Minor veterinary dispensaries at Saliyamangalam, Kivalur, Muthupet, Peravurni, Aduthurai and Kodavasal.

(ii) Touring billets at Kuttalam and Needamangalam.

Eleven veterinary first-aid centres were also functioning during the year. During the year 10,123 cases were treated at these institutions and on tour and 3,118 castrations were done during the year as against 4,589 cases and 1,438 castrations in the last year.

(ix) *Tiruchirappalli district*.—There were eight minor veterinary dispensaries and one touring billet in the district as shown below :—

(i) Minor veterinary dispensaries at Perambalur, Kulitalai, Keeranur, Srirangam, Thuraiyur, Chinnadharapuram, Alangudy, and Jayakondam.

(ii) *Touring billet at Tirumayam*.—In addition to the above, 25 veterinary first-aid centres were also run during the year.

During the year 11,218 cases were treated and 3,208 castrations were done in all these institutions and on tour as against 12,760 cases and 4,036 castrations in the previous year.

(x) *Coimbatore West (inclusive of Nilgiri district)*.—There were five minor veterinary dispensaries and two touring billets in the district as shown below :—

(i) Minor veterinary dispensaries at Perianaickenpalayam, Avanashi, Kurichikottai, Negamam and Kotagiri.

(ii) Touring billets at Kinathukidavu and Ootacamund. Seven veterinary first-aid centres were also run during the year.

Ten thousand eight hundred and ninety-one cases were treated and 1,931 castrations were done at these centres and on tour by the staff as against 19,650 cases and 2,305 castrations in the last year.

(xi) *Coimbatore East*.—There were six minor veterinary dispensaries and one touring billet in the districts as shown below :—

(i) Minor veterinary dispensaries at Andhiyur, Punjaipuliampatti, Kangayam, Palladam, Kodumudi and Perundurai.

(ii) Touring billet at Kollegal.

In addition to the above, there were ten veterinary first-aid centres functioning in the district. A rent-free building was provided at Andhiyur by the local panchayat. The panchayats contributed towards the maintenance of institutions at Kodumudi, Perundurai, Palladam and Punjaipuliampatti.

Eleven thousand two hundred and fifty-five cases were treated and 3,315 castrations were done during the year in these institutions and on tour as against 15,593 cases and 2,863 castrations in the last year.

(xii) *Malabar district*.—There were six minor veterinary dispensaries and two touring billets in the district during the year as shown below :—

(i) Minor veterinary dispensaries at Manantoddy, Chowghat, Alathur, Perintalmanna, Manjeri and Badagara.

(ii) Touring billets at Tirur and Kuthuparamba. The Panchayat Board, Chowghat, contributed Rs. 600 per annum towards the running cost of local minor veterinary dispensary.

In these institutions, 11,272 cases were treated and 3,624 castrations were performed during the year as against 12,448 cases and 4,028 castrations in the previous year.

(xiii) *South Kanara district*.—There were three minor veterinary dispensaries and two touring billets in the district during the year as shown below :—

(i) Minor veterinary dispensaries at Kasargod, Coondapur and Udipi.

(ii) Touring billets at Kota and Uppinangadi.

In addition to the above, three first-aid centres were also run at Bellare, Badiakar and Vittal.

During the year 4,152 cases were treated and 1,327 castrations were done in all these institutions and on tour as against 5,994 cases and 3,393 castrations in the previous year.

92. *Relief work in cyclone-affected areas*.—During the year, the touring staff of the districts of Tanjore, Ramanathapuram, Madurai and Tiruchirappalli were called upon to an unprecedented responsibility of affording relief measures to the livestock of the area immediately after the incidence of the cyclone. With the assistance of special staff drawn to these areas 1,397 villages were visited

where 60 camp dispensaries were organized, carrying over the veterinary aid to the doors of ryots. Three hundred and nineteen thousand four hundred and forty-six heads of cattle were protected against Blackquarter and Hæmorrhagic Septicæmia and over 5,000 morbid cases were rendered treatment within a short period, of about 3 weeks. Though the post-cyclonic conditions were conducive for the flaring up of endemic diseases of this area, there was no death due to contagious diseases in these areas which reflected only the promptness of preventive inoculation carried out.

93. *Pilot scheme for eradication of Rinderpest.*—This scheme was started in the previous year with 20 quarantative stations in the districts of Chingleput, North Arcot, Coimbatore, Salem and South Kanara, with a view to keep the State free from Rinderpest by warding off even the trickling infection from other neighbouring States. The stations were located on the important cattle routes leading to this State as shown below :—

Station number and place of location.					District.
(1)					(2)
1	Thiruvethiyur	..	..	..	Chingleput.
2	Elavur	..	..	..	Do.
3	Varadhapalayam	..	..	..	Do.
4	Ramanjeri	..	..	..	Do.
5	Thiruvalam	..	..	..	North Arcot.
6	Modikhuppam	..	..	..	Do.
7	Pernampet	..	..	..	Do.
8	Tiruppathur	..	..	..	Do.
9	Berigai	..	..	..	Salem.
10	Bagalur	..	..	..	Do.
11	Jeebi (Hosur)	..	..	..	Do.
12	Dinnur Cross Road	..	..	..	Do.
13	Sattegal	..	..	..	Coimbatore.
14	Jagarapuram	..	..	..	Do.
15	Hassanur	..	..	..	Do.
16	Subramanya	..	..	..	South Kanara.
17	Ujirre	..	..	..	Do.
18	Someshwar	..	..	..	Do.
19	Sankaranarayana	..	..	..	Do.
20	Byndoor	..	..	..	Do.

Animals passing through these stations are protected with Freeze Dried Rinderpest vaccine and branded with a standard "0" mark. The animals in the neighbourhood of the stations are also protected so as to create an immune belt in the borders of the State. A total number of 247,609 animals were protected during the year through these quarantine stations.

CHAPTER VIII—DISEASES AMONG LIVESTOCK.

94. Incidence of contagious and infectious diseases among livestock in the rural parts of the State is recorded through reports received by the touring Veterinary Assistant Surgeons from the ryots either direct or through village officials, and detection of these diseases is also done by the staff while they are on routine tour in villages. On receipt of these reports, the staff visit the spot for confirmation of the disease either by clinical examination or from clinical history furnished by ryots, and then to arrange for prophylactic measures.

The reporting on the outbreak of diseases by village officials had improved considerably during the year though there is still scope for improvement. In case of discrepancies between the figures furnished by Revenue department and that of this department, reconciliation was done at taluk offices by the departmental staff once in a month.

During the year under report, 4,058 outbreak reports were received, most of them being of Blackquarter, as against 2,465 outbreaks in the previous year. With a view to avert further spread in affected areas and incidence of outbreaks in free areas, a mass scale protection in the endemic area was launched as a result of which 1,980,583 inoculations and vaccinations were conducted by the staff both in affected and free areas among various species of livestock as against 963,313 done in the previous year. The details of outbreaks and inoculations done, are given in Tables I and II annexed to this report.

95. *Mortality.*—The contagious diseases of frequent occurrence, viz., Blackquarter, Hæmorrhagic Septicæmia, Foot-and-Mouth and Anthrax were responsible for the mortality of 17,641 animals during the year as against 10,516 in the previous year. The mortality figures of livestock would have been still more, due to the conducive post-cyclonic conditions prevailed during the year in the south-east corner of Tamilnad which is endemic for Blackquarter and Hæmorrhagic Septicæmia. But prompt preventive inoculations were done on a mass scale over 3 lakhs of animals in these areas against Blackquarter and Hæmorrhagic Septicæmia. Another noteworthy feature was that there was no incidence of Rinderpest in the State during the year. The average mortality due to these diseases per outbreak was 4.72 as against 3.96 in the

previous year. The diseasewar details of attacks and deaths are given below :—

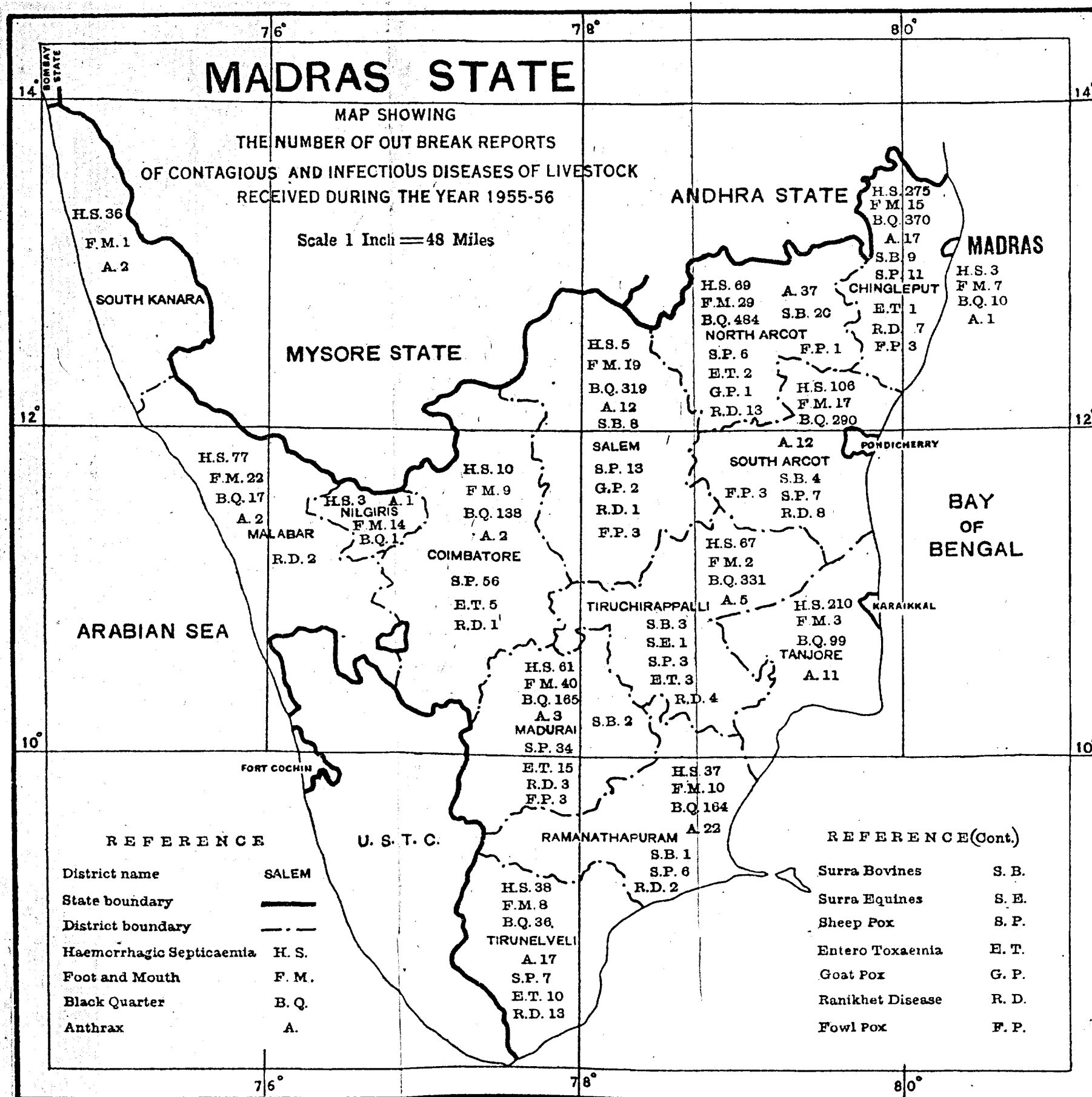
(1)	Number of attacks.	Number of deaths.
(2)	(3)	
Black quarter	11,840	11,154
Haemorrhagic Septicaemia	5,211	4,952
Foot and Mouth	6,343	35
Anthrax	1,525	1,500
	<u>24,919</u>	<u>17,641</u>

96. *Cattle*—(i) *Contagious and infectious diseases*—(a) *Rinderpest*.—It is noteworthy that the State was free from Rinderpest during the year. This is perhaps due to the efficient prophylactic measures enforced during the year through the quarantine stations, creation of immune belt on the borders of the State and mass protection of animals in cattle fairs of the State. A total number of 466,043 animals were protected during the year, as detailed below, as against 137,328 in the previous year.—

Methods of inoculation.	Number of animal protected.
(1)	(2)
1 Serum simultaneous with goat virus	13,432
2 Serum alone	30,700
3 Freeze dried vaccine	4,21,911
	<u>4,66,043</u>

(b) *Haemorrhagic Septicaemia*.—This disease was prevalent during the year throughout the State except in Coimbatore East Circle. The incidence was rather high in the districts of Chingleput, Tanjore and South Arcot of which Chingleput district recorded the maximum number of outbreak reports, viz., 273 with 1,376 deaths. During the year, there were 997 outbreaks with resultant mortality among 4,952 animals as against 698 outbreaks and 3,291 deaths in the previous year. Prompt action was taken to control the outbreaks and to avert the spread in free areas by vaccinating 290,155 animals in affected areas and 140,730 animals in free areas. In the previous year 138,034 animals were protected in affected areas and 28,083 animals in free areas.

(c) *Blackquarter*.—During the year, incidence of this disease was recorded to the extent of 2,424 outbreak reports in all the districts of the State except in South Kanara. The incidence was rather high in the districts of North Arcot Tiruchirappalli, Salem and South Arcot of which the North Arcot district registered the maximum number of outbreaks (viz.), 484 with 3,013 deaths. Preventive inoculations were undertaken in both affected and free areas and thus 662,993 inoculations in affected areas and 134,030 inoculations in free areas were done, as against only 363,312 animals in the affected areas and 61,445 animals in the free areas during the previous year.



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(d) Anthrax.—This disease was prevalent in all the districts except Tiruchirappalli, Ramanathapuram, Madurai, and Tirunelveli. The incidence was highest in North Arcot district where 28 outbreaks with 176 deaths were registered during the year. In the State there were 83 outbreaks during the year resulting in 352 deaths as against 72 outbreaks and 262 deaths in the previous year. Twelve thousand and four hundred six Spore vaccinations in affected areas and 567 in free areas were conducted during the year as against 11,027 vaccinations in the affected areas and 3,012 in free areas during the previous year.

(e) Foot-and-Mouth disease.—Though the disease was prevalent in all the districts the incidence was considerably lower and milder than in the previous year. There were 196 outbreaks with 35 deaths only as against 342 outbreaks with 62 deaths, in the previous year. The spread of this disease was extensive in Madurai district where the maximum number of 1,918 animals were effected in 40 outbreaks.

(f) Surra.—This disease was reported from all districts of the State except Tanjore, Tirunelveli, Coimbatore, South Kanara and Malabar. There were 47 outbreaks with 184 deaths as against 247 outbreaks and 906 deaths in the previous year.

(g) Nasal Schistosomiasis.—Seven hundred and thirty-two cases were treated during the year as against 1,458 in the previous year.

(h) Johne's disease.—Four cases were treated during the year as against two during last year.

(i) Tuberculosis.—A survey on the incidence of this disease in Madras City was undertaken during the year by testing the animals with Tuberculin. Two thousand six hundred and seventy bovines were tested in different parts of the City. The percentage of positive reactors was 3.52 and that of doubtful reactors was 3.96.

(j) Brucellosis.—Fourty-three cases were recorded during the year as against 12 in the previous year.

(k) Bovine Lymphopancitis.—Seventeen cases were treated during the year as against 87 cases in the previous year.

(l) Strongylosis.—One thousand eight hundred and seventy-three cases were treated during the year as against 2,101 in the last year. The incidence was highest in Coimbatore West Circle with a record of 875 cases during the year.

(m) Helminthiasis.—Two hundred and seventy-eight cases were recorded during the year.

(n) Mange.—Seventy-eight cases were treated during the year as against 675 in the previous year.

(o) Mastitis.—Three hundred and fifty-three cases were treated for this condition during the year as against 727 in the previous year.

(p) Coccidiosis.—Six hundred and one cases were treated as against 660 in the last year.

(q) *Ephemeral fever*.—One thousand and twenty-six cases were treated as against 779 in the last year.

(r) *Piroplasmosis*.—Two hundred and fourteen cases were treated as against 199 in the last year.

(s) *Theileriasis*.—Twenty-seven cases were treated as against 108 in the last year.

(t) *Rabies*.—Twenty-nine cases were suspected for this disease of which 14 were confirmed. A total number of 740 bovines were given protection against this disease.

(ii) *Non-contagious diseases*—(a) *Rheumatic Arthritis*.—Three hundred and ninety-four cases were treated during the year as against 247 in the previous year.

(b) *Urethral Calculi*.—Six cases were met with during the year as against four in the last year.

(c) *Haematuris*.—One hundred and twenty cases were treated during the year as against 115 in last year.

(d) *Sterility*.—One hundred and fifty-nine cases were treated as against 366 cases in the last year.

(e) *Chronic luxation of Patella*.—A total number of 3,684 cases were treated for this condition as against 4,464 in the previous year.

97. *Diseases among sheep and goats—Contagious and infectious diseases*.—The following table gives the details of the outbreak reports received, number of deaths and number of animals protected against various diseases among sheep goats:—

Name of diseases.	(1)	Number of out-break reports received.	(2)	Number of deaths.	(3)	Number protected in affected areas.	(4)	Number protected in free areas.	(5)
Anthrax	..	61	..	1,148	..	15,051	..	6,694	..
Sheep-pox	..	143	..	874	..	32,021	..	2,946	..
Enterotoxaemia	..	36	..	316	..	11,020	..	11,700	..
Goat-pox	..	3	..	39	..	273	..	..	..

98. *Diseases among other animals—Contagious and infectious disease*.—(i) *Surra in equines*.—There was only one outbreak with two attacks in Tiruchirappalli district. Those affected animals were successfully treated with Antrypol.

(ii) *Rabies in Canines*.—One hundred and seventy-two cases were suspected of which 80 were confirmed. Nine hundred and forty-two dogs were given antirabic treatment.

(iii) *Distemper in dogs*.—One hundred and one cases were treated for this disease during the year.

(iv) *Ranikhet disease in fowls*.—There were sixty-four outbreaks with 1,171 deaths during the year. Forty-nine thousand six hundred and ninety-five birds were inoculated in affected areas and 138,498 in free areas as against 17,416 and 142,174 respectively in the previous year.

(v) *Fowl-pox*.—There were 13 outbreaks with 108 deaths during the two thousand three hundred and forty-six birds in affected areas and 3,215 birds in free areas were protected during the year as against 1,408 and 2,906 birds respectively in previous year.

CHAPTER IX—INVESTIGATION AND RESEARCH.

99. The department was focussing on the welfare of the live-stock population of the State from three angles (viz.), disease control, Development and Investigation and Research.

Field investigation into disease problems of livestock was carried on through the disease investigation staff and research work on prophylactic aspect was carried out at the Institute of Veterinary Preventive Medicine, Ranipet and on basic sciences like Anatomy, animal nutrition, parasitology, Bacteriology, Pathology, etc., and on specific diseases at the Madras Veterinary College.

100. *Madras Veterinary College*.—In addition to teaching of students of the B.V.Sc. degree, Stockmen and Flaying courses, supervising and guiding the post-graduate research students and attending to the hospital, diagnostic and animal husbandry work, inspection and advice with regard to the proper maintenance of the City Police horses and dogs, the several departments of the College engaged themselves in research work as shown hereunder:—

(i) *Chemistry department*.—Calculi from kidney, urinary bladder, etc., were analysed qualitatively and similarly rumen or stomach contents and salivary calculi were analysed.

Estimations of male sex-hormones in the urine of bulls was also done. Routine estimation of calcium content in the blood serum of bullocks was being done in connection with the investigations on Nasal Schistosomiasis of cattle.

(ii) *Biology department*.—Work on *Drosophila* was being continued.

(iii) *Physiology department*.—The phenomenon of Heteroagglutination in the blood of animals was under a study.

(iv) *Hygiene department*.—Work on optimum requirement for successful incubation of eggs was being done.

Studies on variations in fertility and hatchability rate of eggs with seasonal variations were being done.

Studies on the incidence and prevention of pullet disease were taken up.

Studies on the cause of death of embryo in eggs and the record of a fungus as a cause of such loss of eggs under incubation were pursued.

Studies on the cause of a nervous disorder in growing chicks were taken up. Designing suitable and cheap poultry housing and equipments was done.

(v.) *Parasitology department*.—The survey of the parasitic fauna of domestic cats in Madras City was completed and this study resulted in collection of valuable information about the prevalence of a number of parasites recorded for the first time in Madras. The collection is under close scrutiny.

Research work on 'The studies of *Trypanosoma evansi*' was pursued for the Ph.D. degree.

Studies on the viability of *Trypanosoma evansi* in Vitro and in Vivo was continued.

Transmission trials with *Trypanosoma evansi* in the embryos as well as in freshly hatched out Turkeys, ducks and pigeons were continued.

A scheme of research on the intensive method of treatment of Nasal Schistosomiasis was in progress.

(vi) *Pathology department—Cirrhosis in dogs*.—Some preliminary work was done to reproduce the disease in puppies. Clinical observation in man and experimental work on laboratory animals have shown that Hepatic Cirrhosis of the type seen in dogs are due to lack of dietary factors chiefly what are called lipotropic factors.

Pullet disease.—An investigation on the etiology of an acute disease in pullets which later turned out to be one of so-called pullet disease was done.

(viii) *Bacteriology department—Mastitis*.—Milk from clinically suspected cases was subject to cultural examination to ascertain the various types of bacteria responsible for this condition. It was found that bacteria of Coliaerogenous was most predominant followed by Straphylo Cocol and Straptococci, the percentage of distribution being 18 per cent, 15.8 per cent and 13.4 per cent respectively.

Bovine Lymphangitis.—The bacteria responsible for this condition was isolated in pure culture from clinical cases and a study of cultural characters was under progress.

Tuberculosis in Giraff.—A strain of mycobacterium tuberculosis was isolated by direct culture from a giraffe that died of tuberculosis in the Madras Zoo. The typing of this organism was under progress.

Fungus infection in eggs.—A fungus was isolated from developing chicks died in shell during incubation. The fungus has been identified as "Dematiaceous fungus" by Dr. Blank while it has been identified as "Helminthosporium demetioideum" by the Government Mycologist of the Agricultural College, Coimbatore. The head of the Division of Mycology, Indian Council of Agricultural Research, New Delhi, identified this as "Curvularia geniculatum". The pathogenicity test is under progress.

(viii) *Animal Nutrition department*.—Study on the suitability of sesbania Speciosa and Glyricidia maculata, two newly introduced green manure crops, was continued with respect to other green manure crops, popular in the agricultural practices of the State.

The nutrient composition and nutritive value of *Glyricidia maculata* were assessed.

The nutritive value of *Phassolus acanitifolius* or Pillipesara, used as a popular fodder and also as the most suitable green manure crop to precede in cotton rotation or to succeed paddy as pure or mixed crop in Madras State was investigated and completed.

Analysis on the nutrient composition of *Leucaena Glauca* pods, a popular fod for cattle in Tanjore district were carried out.

Crotalaria juncea or *Sunhemp*.—The well-known Indian legume, popular as green manure plant and fodder was investigated for its nutritive value by cultivating it in the college garden plots and third successive cuts at monthly intervals from the date of sowing were analysed separately for leaves and stalks.

Investigation into the causes for the occurrence of leg disorders in fastly growing cockrels but not in pullets at the College Poultry Unit was undertaken with success.

Sample of American butter oil distributed by the Corporation of Madras was examined for its palatable nature according to Indian standards and practice and its defects were investigated with a view to improve the quality with respect to acidity and smell for easy acceptance by the public.

(ix) *Animal Genetics department*.—Post-Graduate research students engaged themselves in the study of the following items:—

- (i) Colour inheritance in Kangayam cattle.
- (ii) Experiments with male hormones in Kangayam cattle and the influence on the male hormone in colour expression.
- (iii) The level of 17-ketosteroids in the urine of Kangayam cattle and its relation to development of coat colour.
- (iv) Inheritance of white patch on the face of Kangayam cattle.
- (v) A microscopic study of hair from Kangayam cattle of different ages.
- (vi) A study of the phenomenon of excretion of Homogenetic acid in Kangayam cattle and its bearing on coat colour.
- (vii) A case of arrested expression of maleness in a Leghorn fowl; and
- (viii) A case of creeper condition in a Rhode Island Red hen associated with sterility and anatomical abnormality.
- (ix) Sex-reversal and competitive action of sperms in poultry of different breeds.

(x) *Helminthology department*.—The routine collection of adult amphistomes from the rumen of animals slaughtered in the Madras slaughter-house was continued for assessing the normal

worm-burden. During the year under report 91 collections were made from cattle (including buffaloes), sheep and goats and the number in the *Paramphistomum* group and in the *Gastrothylax* group counted and preserved separately.

Various forms which appeared different to the naked eye were flattened, stained in Eholich's Haematorilinor acetic-alum carmine and mounted. A study of the morphological features of these was being made in a critical manner.

No experimental work on these worms could be undertaken far more than one reason of which the most important was that amphistome cercariae were not available at all or scantily available when looked for. Various places in and around Madras were visited for this purpose.

Since the first investigation on *Tetrameres* of fowls undertaken two years ago, a watch was kept for further cases. A very productive source of fowl viscera was recently located and numerous cases of *Tetrameres* infection among them detected.

101. *Institute of Veterinary Preventive Medicine*.—In addition to the manufacture and supply of various biological products to the field staff of this State and to other States on demand, research work is also carried out in the production of vaccines. The experimental and research work thus carried out are detailed below:—

(a) *Rinderpest*—(i) *Viability tests*.—Spleen from calves injected with virulent Rinderpest virus, when stored in a deep freeze cabinet at -20°C was found viable when tested after a period of four months' storage.

The Freeze Dried Goat Tissue vaccine stored in a deep freeze cabinet at -20°C for a period of 24 months and 28½ months was tested and found to be viable and potent after both the periods, without any loss of titre.

The vaccine was also tested after storing it in the freezing chamber of a household frigidaire for a period of three months and was found to retain its potency and titre.

The vaccine was also tested after storing in a thermos food jar containing ice, by replenishing the ice periodically and was found to be quite potent after a period of 111 days.

The reconstituted vaccine was tested for its potency when kept at room temperature of 91° to 95°F and it was found to be viable only up to six hours after reconstitution.

Experiments to study whether the use of buffered saline in the place of normal saline for reconstituting the vaccine will give a longer period of viability for the vaccine, were conducted during the year. Further studies will have to be made before arriving at a final conclusion.

(b) *Blackquarter vaccine*—(i) *Viability*.—Studies were made to determine the viability of alum precipitated vaccine when stored at room temperature. Buffalo calves protected with 5 c.c. of the vaccine stored at room temperature for a period of three months withstood the challenge dose of 3 m.l.d. of virulent cl. chauvoeii culture.

(ii) *Immunity*.—Experiments were conducted to determine the duration of immunity conferred by alum precipitated vaccine. It was found so far that the immunity conferred by this vaccine lasts for a period of about nine months.

Experiments were carried out to determine the earliest period in which the alum precipitated vaccine will confer immunity in vaccinated calves. It was found that the immunity develops by about the sixth day after vaccination.

Sixteen specimens suspected for Blackquarter were received from field outbreaks of which 12 were found positive for cl. chauvoeii infection.

(c) *Haemorrhagic Septicemia*.—(i) Studies on the potency of alum precipitated vaccine were made and it was found that this vaccine gave adequate protection against a challenge dose of 100 m.l.ds. of virulent Pasteurella culture when tested after three weeks of vaccination.

Similar studies with oil adjuvant vaccine were made and found that it gave protection against a challenge dose of 1,000 m.l.ds. of virulent Pasteurella culture when tested after one month of vaccination. Thus oil adjuvant vaccine confers stronger immunity than the alum precipitated vaccine. Similarly the oil adjuvant vaccine received from Dr. Bain of Australia in doses of 3 c.c. intramuscularly withstood the challenge dose of 1,000 m.l.ds. of virulent pasteurella culture after 136 days of vaccination.

Field trials with Dr. Bain's vaccine were conducted in endemic areas with no untoward reaction.

(ii) Experiments to study the efficacy of sulphamezathine in the treatment of Haemorrhagic Septicemia were conducted. It is found that sulphamezathine 33-1/3 per cent solution is useful when given in doses of 15 c.c. per hundred weight body weight followed by half the dose on subsequent days, provided the treatment is commenced sufficiently early, i.e., before the onset of Septicemia.

(iii) Twenty-three specimens suspected for Haemorrhagic Septicemia were received from field staff of which five proved positive.

(d) *Sheep-pox vaccine*—(i) *Titre*.—Titration experiments conducted to find out the end titre of the vaccine prepared in the freeze dried form showed that the vaccine is infective in a dilution of 1 in 10,000.

(ii) *Site for vaccination*.—Experiments were carried out to select a suitable site for vaccinating the sheep so that the majority of sheep will show visible lesions of vaccination and get immunized. Vaccinating in doses containing 1 milligram of freeze dried vaccine subcutaneously at the base of the ear or intradermally at the flank appears to be safer than dosing it intradermally at the caudal fold.

Experiments to study the efficacy of the vaccine when applied on the inside of the ear by scarification and by stab method on the undersurface of the tail were undertaken. Further studies are in progress to arrive at a final conclusion.

(iii) *Immunity*.—Period of immunity conferred by the vaccine was studied and in the experiments so far conducted it was noted that the immunity lasts for about six months. Further experiments are to be carried out to study after a period of nine months and one year.

(iv) *Viability*.—Freeze-dried vaccine in ampoules stored at room temperature (85°F) for a period of 15 days was found to be viable. Further studies are in progress.

(e) *Ranikhet vaccine*.—Experiments were conducted to study the effect of atmospheric condition on viability of Freeze Dried Ranikhet Disease vaccine during transit. It was found that the vaccine was potent and viable even after 15 days exposure to the atmospheric temperature. Further studies are in progress.

(f) *Fowl-pox vaccine*.—A brew of fowl-pox vaccine manufactured on 27th December 1953 and stored in deep freeze cabinet at -20°C was tested on 27 chicks on 15th November 1955. It was found that the vaccine was viable even after about two years of manufacture when stored at -20°C.

(g) *Anthrax Spore vaccine*—(i) *Route and site*.—Studies were made on the effect of vaccination by the intra-dermal route in sheep and goats to avoid incidence of cellulitis in some of the vaccinated animals when given by S/C route. In batches of sheep and goats vaccinated with half to 1 c.c. of vaccine containing the required number of spores to protect against the disease by intra-dermal route in the caudal fold and also in the flap of the flank, it was found that except for a slight nodular swelling at the seat of vaccination. This method confers satisfactory immunity with no incidence of cellulitis.

(ii) *Immunity*.—The period of immunity conferred in cattle was found to last for more than six months.

(iii) Seven specimens suspected for Anthrax were received from field staff of which three were found positive.

(h) *Brucella Abortus vaccine and Antigens*.—Studies were made on the viability of the Brucella Abortus vaccine when stored in a cold room at 40°F and at room temperature (85° to 90°F). The results of the study show that when stored in the cold room, there is no fall in the viable count for a period of 30 days while by about forty-fifth day, there is a fall of about 5 per cent in the number of viable organisms, and by fifty-second day the fall was about 25 per cent. When stored at room temperature, there was practically no fall up to seventh day while by about tenth day, there has been a fall of about 20 to 25 per cent in the number of viable organisms indicating that the vaccine after removal from the cold room should be used within a period of ten days.

Two samples of sera and two swabs of uterine discharge from aborted goats and stomach contents from an aborted foetus were received from the field and all of them were found to be negative.

(i) *John's Disease Vaccine*.—A batch of experimental vaccine for protecting calves against John's disease was manufactured at the institute with a strain of the organisms obtained from the Veterinary Research Laboratory, Weybridge, England, and tested on batches of calves and lambs at the institute. The vaccine produced satisfactory reaction in these vaccinated animals in the form of fibre-caseous nodule at the site of vaccination and these animals when tested after a period of six weeks showed good sensitivity to the Johnin test. Subsequently a batch of 12 calves, aged one to two months at the Livestock Research Station, Hosur, were protected with the experimental vaccine. When examined after about 1½ months all of them were found to have developed the fibre-caseous nodule at the site of vaccination and on test with Johnin majority of them showed satisfactory sensitivity. These calves are kept under observation and further experimental vaccinations will be taken up shortly.

102. *Research Scheme under Indian Council of Agricultural Research*—(a) *Improvement of Haemorrhagic Septicæmia vaccine and preparing a mixed vaccine for Haemorrhagic Septicæmia and Blackquarter*.—(i) A study was made to find out if the addition of growth promoting factors like yeast extract, glucose, serum, trace elements, etc., added to the routine medium used for the preparation of Haemorrhagic Septicæmia Vaccine (nutrient broth pH 7.2 to 7.4) will produce increased concentration of bacterial cells. The study made so far indicates that serum in 5 per cent concentration, glucose in 0.5 per cent concentration and trace elements in the form of bone meal extract in the concentration of 0.1 per cent when added to nutrient broth produces an increased growth of cells ranging from 25 to 50 per cent. Studies were also made to find out if increased aeration of the medium by shaking the flasks seeded with the organisms periodically will produce any increase in the growth of the organisms. The results obtained so far indicate that there was not much significant difference in the growth in the flasks that were left undisturbed in the incubator and those shaken periodically. Further comparative studies by bubbling sterile air and oxygen into the medium will be taken up.

(ii) *Comparative studies on the immunising value of Haemorrhagic Septicæmia Vaccines*.—The immunising values of routine Broth Bacterin, alum precipitated whole culture-bacterin, alum precipitated concentrated bacterin and oil adjuvant vaccine were studied among batches of buffalo calves. The experiments indicated that the alum precipitated concentrated vaccine and oil adjuvant vaccine were able to confer better protection than the routine broth bacterin with or without the addition of alum. Further studies will be taken up.

(iii) Experiments with four types of mixed vaccines of Hæmorrhagic Septicæmia and Blackquarter were conducted—

(1) Equal quantities of routine Hæmorrhage Septicæmia and Blackquarter broth bacterin mixed together.

(2) Equal quantities of alum precipitated whole bacterins of Hæmorrhagic Septicæmia and Blackquarter.

(3) Equal quantities of concentrated alum precipitated Hæmorrhagic Septicæmia and Blackquarter vaccine.

(4) Equal quantities of oil adjuvant vaccines prepared with Hæmorrhagic Septicæmia and Blackquarter organisms.

The experiments were in progress during the year. Further study and completion of experiments will be taken in the ensuing year.

(b) *Improvement (in the technique and methods used in the manufacture) of virus vaccines*—(i) *Mixed vaccine for Ranikhet diseases and fowl-pox*.—Experiments were carried out to study the effect of a combined vaccine for protecting chicks against fowl-pox and Ranikhet disease freeze dried vaccines of fowl-pox and Ranikhet disease were reconstituted to their original volume of half c.c. and mixed together. This mixed vaccine was used on a batch of exotic chicks of about six weeks old by wing-web puncture. The fowl-pox lesion was found to have produced satisfactory lesions in all the birds. A batch of birds among the protected ones withstood the challenge dose of virulent Ranikhet virus thereby denoting that the mixed vaccine had conferred adequate immunity against Ranikhet disease.

Immunity tests against fowl-pox will be taken up in the ensuing year.

(ii) The possibility of attenuating the fowl-pox virus still further to make it safe for protecting chicks of all ages by adopting the strain of virus to duck's eggs.

(iii) Attempts were also made to grow sheep-pox virus on Chorio Allantoic membranes of developing eggs.

103. *Disease investigation*.—During the year under report the three Veterinary Disease Investigation Officers for Cattle, Sheep and Goats, and Poultry respectively continued their investigations on various diseases both in the field and in their laboratories.

104. *Investigation into diseases of cattle*.—The Veterinary Disease Investigation Officer (Cattle) carried out investigations on the following diseases and conditions:—

(a) Anthrax.

(b) Brucellosis.

(c) Tuberculosis.

(d) Johne's disease.

(e) Calf mortality.

(f) Abortion among cows in District Livestock Farm, Pudukkottai.

(g) Experimental field vaccination against Hæmorrhagic Septicæmia with Dr. Bain's Hæmorrhagic Septicæmia vaccine.

(h) Other obscure diseases.

He also attended the Sixth Annual Meeting of the Disease Investigation Officer and Veterinary Research Workers' Conference at Izatnagar from 5th to 10th March 1956.

(a) *Anthrax*.—(i) Field investigations were carried out in 73 centres in nine districts as against 63 centres in the last year. Out of this 32 were actual scenes of outbreaks, 19 were free areas and 22 were once endemic but now rendered free by repeated spore vaccinations. Among the 32 actual scenes of outbreaks, North Arcot had the highest number of 14 reports, Salem had 7 and Chingleput 6. In other districts, the reports ranged from 1 to 2. The highest mortality in a single village occurred at Maruthambadi of North Arcot district where 19 animals died. Next in order was Sokkarasahalle of Salem district where 13 animals have died. In other villages, the mortality ranged from 1 to 10. The disease was confirmed microscopically in four villages and biologically in ten villages.

In all the above centres a total of 11,696 spore vaccinations (11,083 cattle and 613 buffaloes) were conducted. The product used was manufactured at the Institute of Veterinary Preventive Medicine, Ranipet. In all the actual scenes of outbreaks, the disease was successfully controlled. Among 22 endemic areas, the recurrence was noticed only in 2 places.

(ii) *Laboratory experiments*.—(1) A study in the laboratory, on the virulence of Anthrax strains to Guinea pigs was undertaken. Three virulent field strains were taken of which two were of bovine and one of caprine origin. Spores of these three different strains in varying doses containing known count of spores were injected into three batches of Guinea pigs. It was found that the bovine strain was more virulent to Guinea pigs than the caprine strain.

(2) *Experiments on strain variation of Anthrax bacilli*.—It is observed under field conditions that when Anthrax occurs among cattle and buffaloes, the disease does not spread to sheep and goats. Similarly when there is an outbreak among sheep and goats, cattle and buffaloes of the same locality are free, even though all these animals are grazing in the same locality. It is also seen, that while bovine outbreaks mainly occur in areas of wet cultivation, bovine and caprine outbreaks appear to be more common in dry areas. While certain specific factors regarding the epizootology of the disease such as grazing habits, housing conditions, method of disposal of carcasses are peculiar to different species, yet this also could not be taken as the sole cause of the above phenomena. Hence an attempt was made to find out whether there is any strain variation between the organisms affecting the different species of animals.

Experiments to find out the lethal dose of cattle strain to cattle were also conducted. But further experiments are to be carried out to arrive at definite conclusions.

(b) *Brucellosis*.—(i) A scheme for the control and eradication of Brucellosis sanctioned in March 1954 was implemented in Coimbatore district during the year with a Veterinary Assistant Surgeon assisted by a Veterinary Livestock Inspector. One hundred and sixty-four villages in the district of Coimbatore were covered where the epizootology of the disease was studied and the disease was confirmed by agglutination test with serum and synovial fluid. Six hundred and forty samples of sera and 150 samples of synovial fluid from cattle, sheep and goats were tested of which 170 in the former and 16 in the latter were proved positive. The incidence of this disease was detected in 25 fresh centres and the infection rate was found to be 5 to 10 per cent warranting vaccination.

Vaccination with cotton strain No. 19 was undertaken and a total of 8,216 animals were vaccinated against a targetted figure of 6,000. The vaccine was supplied from the Institute of Veterinary Preventive Medicine, Ranipet.

(ii) This disease was investigated by the Veterinary Disease Investigation Officer (Cattle) in 9 centres in the districts of Tiruchirappalli, Coimbatore, Tirunelveli, South Arcot and Madras of which 6 were in village herds. Of the 6 field centres 2 were old centres where vaccinations were in progress for a long time. Ninety-three samples of sera were tested by quick method of which 10 proved positive. A total number of 489 animals were vaccinated.

(iii) *Results of vaccination*.—Enquiries made in endemic areas where vaccination has been in progress for the past eight years have revealed considerable reduction in abortion and synovitis and the herds are increasing day by day with healthy and vigorous male and female stock to the great satisfaction of the owners who are thoroughly convinced of the benefits of calf-hood vaccination.

(c) *Tuberculosis*.—The disease was investigated in eight centres in the districts of North Arcot, Madras, Salem, Coimbatore, Malabar, Tiruchirappalli and Tirunelveli. A total of 125 animals (22 white cattle and 103 buffaloes) were tested by the double intradermal test of which one white cattle proved positive. This positive animal was destroyed and materials were collected. No naked eye lesions were present. Smears taken from suspected areas were negative for acid fast organisms. Pooled emulsion of lung, mediastinal lymph gland and liver has been injected into three guinea pigs and they are being watched. This is one of the very rare occasions where the double intradermal test has so far not given positive post-mortem findings.

(d) *John's disease*.—This was investigated in eight centres of the same districts as that of Tuberculosis. A total of 125 animals (22 cattle and 103 buffaloes) were tested by the double intradermal method. All the animals proved negative. Of the above animals one Murrah buffalo bull tested at the Veterinary Hospital, Palghat, which gave negative reaction to the test, proved positive by bowel washings examination.

(e) *Survey on calf mortality*.—This was conducted in nine milk unions in the districts of North Arcot and South Arcot, Ramanathapuram and Madurai. A total of 570 cows and 471 buffaloes were studied. It was observed that the mortality among cow calves was 3.7 per cent and among buffalo calves was 7.8 per cent. These figures relate only to mufassal centres where co-operative milk unions are located either in district or taluk headquarters. The survey was also conducted in two big milk unions in the City of Madras (viz.), Ayyanavaram and Kosapet. In these unions, the mortality was about 80 per cent among buffaloes and 60 per cent among cow calves. The heavy mortality in the City is purely due to want of proper nourishment and care than due to any specific cause as helminthic or bacterial.

(f) *Abortion among cows in District Livestock Farm, Pudukkottai*.—During the year, there were a number of abortions among the animals in the District Livestock Farm, Pudukkottai, which warranted immediate investigation. The total number of abortions during the year was 22. Most of the abortions were in early pregnancy, the age of the fetuses being three to four months. Agglutination tests conducted with the sera of all the above animals had proved negative for Brucellosis. Microscopical examination of materials for Trichomonas and Vibrio fetus were also negative. Biological and cultural tests conducted with materials from nine aborted fetuses proved negative for Brucellosis.

In this connexion it was interesting to note that trypanosomes were recovered from the heart blood of one aborted fetus and from the auricular vein of two aborted cows. A mass examination of 195 animals conducted in the farm revealed the presence of tryps in four animals including the two aborters. This gives an indication of this lurking protozoan infection in the farm. Hence, it could reasonably be suspected that the abortion mentioned above may be due to trypanosomes. Steps have already been taken to protect the farm animals in general and pregnant cows in particular with Antrycide prosalt and it is giving some encouraging results.

(g) *Experimental field vaccinations against Hemorrhagic Septicæmia with Dr. Bain's Hemorrhagic Septicæmia vaccine*.—Since the present broth vaccine does not give long duration of immunity, the new adjuvant vaccine prepared by Dr. Bains of Australia was tried in the field in areas where the disease was endemic and also in actual outbreaks. Field trials were undertaken in 23 centres (four actual outbreaks and 19 endemic areas). Two thousand six hundred and fifty-six animals (both white cattle and buffaloes) were inoculated with this vaccine. All the animals were tattooed serially on the left ear for each village for verification at a later date. It was noted that the vaccine was well tolerated by the animals in general, there being no systemic disturbance in most of the animals vaccinated. Out of such huge number vaccinated, only three animals showed some shock which passed off in

one to three hours. In one instance in a highly Blackquarter area, one animal developed a huge edema typical of Blackquarter and died. Except in this, there was no adverse effect of any kind in the rest of the animals.

Immunity.—It is too early to judge the period of immunity conferred by this vaccine. During the year the disease broke out after two months of vaccination in one of the villages, protected with Bain's vaccine and mortality occurred among the animals protected with broth vaccine, whereas the animals of the same cattle yard protected with Bain's vaccine did not contract the infection. This will serve as an indication of the solid immunity conferred by this vaccine.

(h) **Other obscure diseases.**—(i) Investigation was carried out in an obscure disease occurred in five villages of Madurai district with 13 attacks and 10 deaths. The disease was suspected to be of Rinderpest but was found negative both for Rinderpest and Hæmorrhagic Septicæmia clinically, as well as on post-mortem examination. There were no indications of helminthiasis or vegetable or chemical poisoning. Further investigations are to be carried out to arrive at a final diagnosis.

(ii) There was a sudden attack of 20 animals of which four died in Livestock Research Station, Hosur, showing the symptoms of diarrhoea and loss of appetite, and all the deaths occurring in the course of four days. Since the microscopical and biological examinations were negative for any of the contagious diseases, Chenopodium plants found in the grazing area were fed to cattle which showed to toxic effects. Another plant locally called "Karuppu Uthrani" was sent to Systematic Botanist, Coimbatore, for analysis and the plant was identified and reported as poisonous for cattle. So the conclusion arrived at was that the animals might have taken these plants in large quantities and died.

(iii) Incidence of contagious abortion was suspected in a private herd at Kayapakkam of Chingleput district as all the seven cows in the herd conceived and gave birth either to still-born calves or weak or under-sized ones which also died in one to three days after birth. The herd was inspected and the cause is being investigated into by examining for Brucellosis, Trichomoniasis and Vibrio fetus.

(iv) Investigation into the outbreak of cattle diseases at Kilkalathur in Tanjore district was carried out and it was found that mortality was occurring since 1949 in monsoon season only. Further from the symptoms narrated, it was diagnostic of mixed outbreaks of Anthrax and Hæmorrhagic Septicæmia. The present outbreak was suggestive of sub-acute form of Anthrax and immediate protection was given with Anthrax spore vaccine.

Examination of specimens in the field and laboratory.—Nature of specimens examined both in the field and at the laboratory during the year are detailed below :—

Kind of specimens examined.	Number examined		Number positive	
	in the field.	at the laboratory.	in the field.	at the laboratory.
(1)	(2)	(3)	(4)	(5)
Dung	65	22	9	7
Blood smears	327	257	12	6
Skin scrapings	7	..	3	..
Samples of Sera tested	82	83	10	12
Bowl washings	..	25	..	2
Pus smears	..	7	..	2
Lung smears	..	5	..	..
Smears of stomach contents	..	10	..	..
Smears from conjunctiva	..	5	..	..
Vaginal smears	..	5	..	..
Specimen of synovial fluid	..	153	..	18
Biological tests	..	54	..	12

105. **Investigation into diseases of sheep and goats.**—During the year, the Veterinary Disease Investigation Officer (Sheep and Goats) investigated into the following diseases among sheep and goats :—

- (a) Anthrax.
- (b) Sheep-pox.
- (c) Enterotoxæmia.
- (d) Other obscure diseases.

(a) **Anthrax.**—This disease was prevalent in a super acute form in 22 centres of the districts of Ramanathapuram, Tirunelveli, Madurai, Chingleput and Tiruchirappalli. The disease was endemic in Ramanathapuram district where six centres were recorded during the year. The highest mortality of 113 deaths among all 113 animals attacked by this disease occurred in Tirunelveli district. In the outbreak at Elampaloor village of Tiruchirappalli district, 45 animals were attacked and all of them died. In the rest of the outbreaks the mortality ranged from 6 to 30.

As deaths occurred at varying intervals in endemic areas, the control of this disease in these areas was done by protecting all the animals in these areas with spore vaccine. During the year 24,569 doses of spore vaccine were supplied from Institute of Veterinary Preventive Medicine for use in the field.

The vaccine when used sub-cutaneously was producing a local sedematous swelling and in many instances, the swelling was so big and it even caused death. This reaction was noted more in goats than in sheep. In seven centres, where vaccinations were conducted by the sub-cutaneous route on 181 animals it was noticed that 53 animals developed swelling and died. When such a swelling occurred the only way of controlling the same was to inject penicillin in doses of 10,000 to 20,000 units or even more into the local swelling.

Different routes of inoculation was therefore tried and it was found that the intradermal route was quite satisfactory. The vaccine was injected by this route in the caudal fold in doses of 0.5 c.c. to 0.25 c.c. depending upon the age of the animal. Eight hundred and by sheep and 620 goats were inoculated in one centre by the intradermal route in the caudal fold and no adverse reactions were noted. There was only a small hard nodular swelling left at the site of injection. It was also found that animals protected by this route also developed a strong immunity.

(b) *Sheep-pox*.—This disease was prevalent in Tirunelveli, Madurai, Coimbatore, Salem, North Arcot and Chingleput districts. The disease was found to affect sheep only and goats though in contact with affected sheep remained unaffected. Sheep of all ages were found affected by this disease which prevailed throughout the year, but the period from November to March was found to be favourable. The lesions exhibited by affected animals were hard nodules with Erythema around and the mortality rate was from five to ten per cent and sometimes more even.

The control of this disease was undertaken by vaccination with the vaccine manufactured at Institute of Veterinary Preventive Medicine from field virus. The scarification method on the inner side of the external conch or on the under surface of the tail with live vaccine was not satisfactory nor the intradermal route at caudal fold with live vaccine proved useful. Therefore the heat killed vaccine was tried followed by live vaccine after 12 to 15 days by intradermal route at the caudal fold in doses of 0.5 c.c. and the same was found to be safe and satisfactory in respect of local reaction and strong immunity conferred. However further extensive trials will be continued on this aspect.

Experiments were in progress during the year to adopt the sheep-pox virus.

(c) *Enterotoxaemia*.—This disease was prevalent throughout Madras State except in Malabar and South Kanara districts where sheep population is meagre.

This disease occurred among sheep affecting five to ten per cent of the flock generally with cent percent mortality of affected animals. The course of the disease was few minutes to few hours only. The symptoms in ailing animals observed were indifferent grazing, swaying movement of the head falling on the ground followed by convulsions and death. The post-mortem lesions were mainly confined to the intestines showing diffuse, streaky patches of congestion.

The diagnosis on the causative factor of this disease was mainly based on the presence of toxin in the intestinal filtrates. The suspected toxin was found to be that of Cl. Welchii type 'A'.

The control of the disease was carried out by the use of Cl. Welchii ana-culture vaccine in endemic areas, well in advance of the season. During the year 28,800 doses of this vaccine were supplied for use in the field.

(d) *Other Obscure diseases*.—(i) An outbreak report with eight deaths in Punnambakkam village of South Arcot district was investigated into. The only symptom narrated was indifferent grazing for a number of days before death. Examination of blood smears from few sheep were negative and that of dung revealed stray ova of amphistomes. The disease was diagnosed as Amphistomiasis and periodical de-worming was advised.

(ii) Another case of amphistomiasis in goat was confirmed on post-mortem at Junior Certified School, Ranipet. The other goats in the institution were treated with hexachlorethane.

(iii) An outbreak suspected for goat-pox was reported from District Livestock Farm, Malabar. On investigation it was found to be Contagious Pustular Dermatitis. It was confined to almost all kids in a mild form with lesions of crustaceous scabs on the lips. No other symptoms of serious illness were observed.

Microscopical and laboratory examinations.—The specimens examined both in the field and at the laboratory are detailed below :—

Kind of specimens examined.	Number examined		Number positive	
	in the field.	at the laboratory.	in the field.	at the laboratory.
(1)	(2)	(3)	(4)	(5)
Dung	36	56	7	14
Blood smears	25	27	1	4
Heart blood swabs	1	14	..	..
Skin pieces	1	6	1	2
Pieces of liver, spleen and intestinal contents.	..	16	..	1
Cutaneous scabs	..	6	..	2
Intestinal filtrates	14	..	4	..

Experiments undertaken in the laboratory—(i) *Safe and effective methods of protecting sheep against sheep-pox*.—Extensive experiments as detailed below to find out a safe and effective method with a suitable form of vaccine against sheep-pox were undertaken as the scarification method hitherto was found to be erratic in its reaction and conferring immunity.

(a) Formalinized vaccine, Heat-killed vaccine and live vaccine were tried to have a comparative study of their values.

(b) Live vaccine in different dilutions ranging from one in hundred thousand million to one in ten were tried.

(c) Heat-killed vaccine by sub-cutaneous route was tried.

(d) Intradermal route with heat killed vaccine followed by live vaccine was tried.

The final conclusion drawn of these experiments was that the heat killed vaccine followed by live vaccine after 12 to 15 days in dose of 0.5 c.c. each gives satisfactory reaction and immunity.

(ii) An experiment to find out the immunological relationship between vaccinia virus and sheep-pox virus was undertaken.

It was seen that vaccinia virus was not able to confer protection to sheep against sheep-pox.

106. *Investigation into poultry diseases.*—The Veterinary Disease Investigation Officer, poultry, investigated into the following diseases of poultry during the year for their diagnosis, treatment and control :—

- (i) Ranikhet disease.
- (ii) Fowl-pox.
- (iii) Contagious coryza.
- (iv) Coccidiosis.
- (v) Avian Leucosis complex.
- (vi) Parasitic infection.

(i) *Ranikhet disease.*—The incidence of the disease has been recorded in all the districts of Madras State, affecting all ages and breeds of birds both indigenous and exotic and no seasonal variation has been noticed with reference to the incidence of the disease during the period under report.

Vaccinations against this disease were carried out in all the districts and the reactions observed are detailed below :—

Districtwise Reaction Statement of Ranikhet disease vaccinations done by the field staff during the period from 1st April 1955 to 31st March 1956 in free areas.

District.	Number of birds vaccinated.	Exotic birds.					
		Reaction noticed.					
(1)	(2)	Drowsiness per cent.	Diarrhoea per cent.	Paralysis per cent.	Stoppage of egg production.	Mortality per cent.	Reaction mild or severe.
Chingleput	1,900	2	..	0.3	0.3	0.1	Mild.
Coimbatore	1,445	10	1	6	4	0.6	Do.
Madurai	1,522	0.2	..	0.5	..	0.7	Do.
Malabar	2,071	5	5	1	4	0.9	Do.
Nilgiris	1,330	..	..	0.6	..	1	Do.
North Arcot	1,422	12	1	3	17	2	Do.
Ramanathapuram ..	557	..	..	18	..	4	Do.
Salem	387	..	..	..	..	..	Do.
South Arcot	293	..	..	..	..	..	Do.
South Kanara	1,700	3	3	1	3	4	Do.
Tanjore	1,214	..	0.1	2	..	..	Do.
Tiruchirappalli ..	321	..	..	10	..	..	Do.
Tirunelveli	1,042	..	..	..	..	..	Do.
Total	15,124	33.2	10.1	42.9	28.3	13.3	..
Average	..	2.6	0.77	3.3	2.17	1.1	..

District.	Number of birds vaccinated.	Indigenous birds.					
		Reaction noticed.					
(9)	(10)	Drowsiness per cent.	Diarrhoea per cent.	Paralysis per cent.	Stoppage of egg production.	Mortality per cent.	Reaction mild or severe.
Chingleput	6,181	1.1	..	4	0.1	0.1	Mild.
Coimbatore	3,440	10	1	1	4	0.6	Do.
Madurai	6,580	0.6	0.9	1.1	0.4	..	Do.
Malabar	2,931	4	1	2.1	9	1.1	Do.
Nilgiris	733	..	..	2.8	..	2.1	Do.
North Arcot	4,160	7.3	0.1	2.2	7.7	0.9	Do.
Ramanathapuram ..	2,670	..	..	1	..	2	Do.
Salem	634	..	..	..	..	..	Do.
South Arcot	410	..	..	..	..	..	Do.
South Kanara	2,255	3	1	1.1	3	2.4	Do.
Tanjore	1,734	..	0.1	1.5	..	1	Do.
Tiruchirappalli ..	567	..	..	1.6	..	1.5	Do.
Tirunelveli	1,330	0.9	..	2.4	0.4	1.4	Do.
Total	33,635	29.2	4.1	20.8	24.6	13.1	..
Average	..	2.24	0.32	1.4	1.88	1	..

Immunity tests.—The period of immunity conferred by komorove strain of vaccine was studied during the year and it was so far found that vaccine confers immunity to a period of about two years.

Age of vaccination.—To determine the minimum age level at which the chicks can safely be vaccinated and the optimum age when lasting immunity is conferred, experiments were carried out during the year with batches of birds of age groups of 12 days, 15 days, 18 days and 21 days.

The conclusion drawn of these experiments is that the chicks of abovementioned ages cannot be vaccinated with safety against Ranikhet disease since the reaction produced was severe causing 100 per cent mortality in all age groups.

Immunisation with a mixture of Ranikhet and Fowl-Pox vaccine.—With a view to study the effect of protecting the birds with a mixture of reconstituted chick embryo fowl-pox and Ranikhet disease vaccines, 50 chicks of eight weeks old were vaccinated by stab method in the web without disturbing the feathers. Satisfactory 'takes' appeared at the seat of vaccination on tenth day and no chick developed pox and withstood a challenging dose of Fowl-Pox virus after 3½ months of vaccination. These chicks were also found to be immune by Haemoagglutination inhibition tests conducted with the sera collected from six of these chicks. Thus it was found that chicks of eight weeks old and above can be safely immunised both against Ranikhet and fowl-pox with mixture of reconstituted fowl-pox and Ranikhet vaccine.

(ii) *Fowl-Pox—Vaccination with freeze dried chick embryo fowl-pox vaccine.*—During the period under report, 1,082 chicks of six weeks and above were vaccinated by Veterinary Disease Investigation Officer with the freeze dried chick embryo fowl-pox vaccine in absolutely free areas and out of the flaring season for fowl-pox (viz.), December to February. Sufficient care was also taken to note that the chicks were free from coccidial or heavy helminthic infection.

As a result of these vaccinations, it was found that freeze dried chick embryo fowl-pox vaccine can be used in chicks of six weeks and above in absolutely free areas provided sufficient care is taken prior to vaccination to see that chicks are free from coccidial or heavy helminthic infection. It is not desirable also to use the vaccine in favourable season for Fowl-Pox (viz.), December to February.

Vaccination with Pigeon-Pox vaccine.—Three thousand three hundred and sixty-eight chicks of two to four weeks old in free areas were vaccinated with freeze dried chick embryo pigeon-pox vaccine during the favourable season for fowl-pox (viz.), in December, January and February.

One thousand nine hundred and sixty-four chicks of 20 days to 12 weeks old were vaccinated in actual outbreaks. In only one instance when birds of three to five weeks old were protected in the face of an outbreak, 5 per cent of them developed stray lesions of pox with no mortality. Otherwise, the reaction to vaccination was satisfactory.

Thus it could be seen that chick embryo pigeon pox vaccine could be used for vaccinating chicks of two to five weeks old in free areas as a routine during seasons of fowl-pox and in birds of all ages including baby chicks in actual outbreaks of pox.

(iii) *Contagious coryza.*—The incidence of the disease was noticed in Poultry Research Station, Teynampet, the D'Velois Poultry Farm, Katpadi, the poultry farm owned by Sri Ramaswamy Gounder at Mallur of Salem district, the poultry unit attached to the Veterinary Hospital, Tallakulam, Madurai district and the Poultry Production Centre, Malli, Ramanathapuram district. The affected adult birds manifested thick foetid muco-purulent discharge in the nostrils which later became hardened rendering respiration difficult with a wheezing sound heard at a distance.

The eyelids became swollen containing membranous deposits. The affected chicks manifested the following symptoms:—

Closure of one or both the eyes with lachrymal discharge initially followed by swelling of eyes with membranous deposits; thick purulent discharge in the nasal cavities visible on pressure to nostrils.

Four hundred and seventy-six affected birds were treated with Dihydrostreptomycin sulphate in 0.2 gram dose each intramuscularly twice at the interval of 72 hours. In affected chicks the same drug

could not be used as they were highly susceptible to it. Nine hundred and seventy-eight affected chicks of four to eight weeks old were treated with Pencillin in doses of 10,000 units intramuscularly twice a week.

The other preventive measures like relieving congestion, keeping them warm at nights and disinfection of poultry houses and exposing them to sunlight were also adopted.

(iv) *Coccidiosis.*—The disease was noticed in D'Velois Poultry Farm, Katpadi, in chicks of three to four weeks old. The coccidia was found on microscopical examination to be of *Eimeria Tenella* species. The outbreak was controlled by culling out the badly affected ones, thorough disinfection of the premises and treatment with Sulphamezathine (16 per cent solution) for four days consecutively.

(v) *Avian Leucosis Complex.*—The incidence of the disease was noticed in the poultry unit attached to the Agricultural College, Coimbatore, Veterinary Hospitals, Periakulam and Tallakulam, Poultry Research Station, Teynampet; Livestock Research Station, Hosur Cattle Farm; District Livestock Farm, Orathanad; Poultry Production Centre, Malli, Ramanathapuram district and in Arcot Mission Poultry Unit, Narasingapuram, North Arcot district. Species affected was entirely exotic and the age at which birds manifested symptoms of the disease has been from six months to one year. The affected birds manifested poor weight and light in weight when handled. They besides manifested general weakness, emaciation and abnormal paleness of combs and wattles resulting from anaemia.

Control measures adopted.—Since 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 was to systematically weigh birds and conduct haematological examination for spotting and culling out for table the affected birds.

Thus during the period under report 500 birds have been actually weighed of which 77 weighed far below the average weight. Culling of the birds was advised.

Six hundred and twenty-six birds have haematologically examined of which 63 revealed in their blood pictures, numerous lymphoid cells suggestive of the disease. Culling of such affected birds was advised.

During the period under report 39 specimens containing the suspected viscera have been sent to the Indian Veterinary Research Institute, Mukteswar, of which 19 proved positive for the disease.

(vi) *Parasite infestation.*—With a view to maintain the parasitic infestation in poultry at the lowest level, the following measures were prescribed to be adopted in the poultry farms:—

(a) Burning the whole poultry yard or run with dried leaves or straw once a fortnight so that the ova of round worms and the intermediary host of tape worms may be destroyed.

(b) Dosing of birds with vermifuges for both tape and round worms.

(c) External application of Sodium flouride or Gamma-xene.

Specimens examined.—One hundred and forty-nine specimens of blood smears, faeces, heart blood smears, internal organs, etc., received from the field staff have been examined and reported upon.

One thousand and fifty-nine specimens of blood smears, faeces, parasites, etc., have been collected and examined in the course of tours during the period.

One hundred and eight specimens of internal organs received from the field staff and suspected for Ranikhet disease have been tested biologically on fowls of which five proved positive for Ranikhet disease.

CHAPTER X—ANIMAL HUSBANDRY WORK IN COMMUNITY PROJECTS AND NATIONAL EXTENSION SERVICE AREAS.

107. *Community Projects*—(i) *Madurai district.*—The scheme was in operation in Periyar Project area comprising of Madurai, Melur and Nilakottai blocks.

There were 26 breeding bulls and 39 rams at stud distributed all over the area. Two hundred and seven exotic birds and 7,371 eggs were distributed in villages during the year. Fifteen graded woolly rams were distributed in Chettiapatti village of Nilakottai Block. Eight rams were transferred from Chettiapatti to the Youth Farmers' Club at Kalladipatti.

Poultry units were opened at Melur, Pallapatti, Alanganallur, Vellalore and Vadipatti. One thousand six hundred and sixty-eight eggs were produced in these units, out of which 1,384 eggs were distributed for hatching. Sixty cockerels were distributed for grading up local stock at Kalladipatti village.

One artificial insemination centre was sanctioned for location at Vadipatti for which construction of building was taken up during the year. Nine breeding associations were formed. Six hundred and sixty-five village meetings were conducted to educate the ryots on Animal Husbandry. One cattle show was conducted during the year.

There were six dispensaries and six first-aid centres in the area. A total number of 99,114 ailing animals were treated and 12,865 scrub animals were castrated at these institutions as well as in villages by the staff while on tour. A total number of 170,549 inoculations among cattle, sheep and poultry were carried out in the area.

(ii) *Coimbatore district.*—This scheme was in operation in the Lower Bhavani Project area comprising of Bhavani, Gobichettipalayam and Kodumudi blocks.

There were 52 breeding bulls and 34 rams for stud purposes at various centres within the area.

Two artificial insemination centres at Kavundapadi and Malayampalayam were opened under the scheme. Two poultry units, one at Kavundapadi with Rhode Island Red breed and another at Malayampalayam with White Leghorn breed were opened during the year. Two cattle shows were conducted. Sixty village meetings were organised for educating the ryots on livestock improvement.

Two veterinary dispensaries were opened at Malayampalayam and Chennimalai and in addition to the veterinary dispensary at Kavundapadi and 6 first-aid centres opened in previous years. A total number of 7,925 cases were treated and 2,474 castrations were done by the staff at these institutions as well as during their tours. Forty-two thousand four hundred and seven inoculations were done among cattle, sheep and poultry.

(iii) *South Kanara district.*—This scheme was in operation in the area comprising of Bajpe, Moodabidri and Hebri blocks.

There were 12 breeding bulls and 2 rams at stud in these areas. Two hundred and six exotic birds and 213 eggs were distributed for raising backyard poultry units in villages. Three poultry units were started at each of the 3 veterinary dispensaries under this scheme. One artificial insemination centre was opened at Mangalore. One and a half acres were brought under cultivation with exotic fodder grasses and 6 silo pits were filled during the year. One hundred and two meetings were arranged in villages for educating the ryots on the improved techniques of Animal Husbandry. Two cattle shows were conducted in this scheme area.

One veterinary dispensary at Karkala was upgraded during the year besides the 6 first-aid centres functioning in this area. A total number of 14,355 morbid cases were treated and 5,750 castrations were done at these institutions and villages during the course of the tours by the staff. Eighteen thousand three hundred and eighty-nine animals were protected against epidemics.

(iv) *Malabar district.*—This scheme extends over the whole of Palghat taluk. It comprises of two blocks at Parli and Coyal-manna.

There were 16 breeding bulls at the beginning of the year. During the year 10 bulls were located and one was removed leaving a total of 25 bulls at the end of the year. There is an artificial insemination centre also opened during the year at Palghat and 757 inseminations were done so far. Two cattle shows were conducted in the area. Five hundred and fifty-five meetings were conducted in villages to educate ryots in Animal Husbandry.

Nine hundred and ninety-seven exotic eggs and 116 exotic birds were distributed to the public at nominal cost, for hatching and rearing. The private poultry farm of Rhode Island Red birds started in the previous year continued to function during the year for the benefit of the public in the area.

There were 6 veterinary institutions in the area inclusive of first-aid centres. Six thousand four hundred and ninety-two of ailing animals were treated and 2,470 scrub animals were castrated both in these institutions and by the staff on tour. Forty thousand two hundred and eighty-seven animals in the area were protected against epidemic diseases.

108. *National Extension Service (inclusive of Community Development Blocks)*—(i) *Chingleput district*.—During the year there were five blocks at Kadambuthur, Tiruvallur, Uthukottai, Sriperumbudur and Tirukalikundram.

There were 24 breeding bulls and 231 rams distributed all over these areas for stud purposes. One hundred exotic birds and 4,055 eggs were distributed all over the area to raise poultry units in rural parts. An artificial insemination centre was functioning in the Veterinary Institution of Tirukalikundram block area. Three breeding units with one Sindhi and one Murrah bull in each centre were also located.

Ninety-six village meetings were conducted to educate villagers on Animal Husbandry matters on modern and economic lines. Six one-day cattle shows were conducted during the year. One hundred ninety-two and a half acres of land were brought under cultivation of fodder crops and grasses.

There were one veterinary dispensary and three first-aid centres in the area. One thousand six hundred and seventy-four cases were treated and 216 castrations were done in these institutions. The staff during the course of their tours rendered treatment to 15,092 ailing animals and castrated 4,496 scrub bulls and rams in these areas. Besides prophylactic inoculations done in areas affected with epidemics of livestock, advance inoculations in free areas to ward off the incidence of diseases were also undertaken and thus 85,125 inoculations and vaccinations were conducted among cattle, sheep and poultry during the year. Eighteen thousand two hundred and sixty sheep were dewormed for eradication of worm infestation.

(ii) *South Arcot district*.—There were five blocks during the year at Valathi, Kurinjipadi, Chinnasalem, Chidambaram and Panruti. There were 17 breeding bulls and 22 rams located in these areas for stud purposes. Three hundred and sixty-seven exotic birds and 297 eggs were distributed for raising poultry units in rural parts. Seventy-one thousand slips of exotic grasses and 40½ lb. of grass seeds were distributed. Two cumbly weavers co-operative societies were organized.

The staff during the course of their tours conducted 413 village meetings for advising ryots on matters relating to Animal Husbandry and to solve their problems at the village level. Four first-aid centres were opened in these areas. A total number of 22,049 ailing animals were treated and 3,896 castrations were done in villages by the staff during the course of their tours. Thirty-five thousand nine hundred and six inoculations and vaccinations were done among livestock of these areas against epidemics. Eight thousand five hundred and thirty-eight sheep were dewormed for eradication of worm infestation.

(iii) *Madurai district*.—There were 4 blocks in the district at T. Kallupatti, Tirumangalam, Usilampatti and Athoor. There were 33 breeding bulls and 112 rams distributed all over the area for stud purposes. Seven hundred and nineteen exotic birds and 4,793 eggs were distributed in villages.

The sheep-breeding centres, each consisting of 20 cows and one ram were started in Thidiyan village of Usilampatti block. A goat-breeding centre with 3 bucks and 14 milch goats of Tellicherry breed was started in M. Podhanadhi village of Tirumangalam block. One Jamnabari buck and another buck of local breed were distributed in T. Kallupatti Block. Four village poultry units in Usilampatti Block, two units in T. Kallupatti Block and six units in Tirumangalam Block were opened during the year. Sixteen Backyard Poultry units were opened in T. Kallupatti Block.

Thirty-four breeding associations were formed. Four hundred and forty-seven village meetings were conducted to educate the ryots in livestock development. One thousand and two hundred slips of guinea grass were distributed, and 240.6 acres were brought under improved methods of fodder crops and grasses cultivation. Three cattle shows were organized.

A total number of 45,836 morbid cases were treated and 4,150 scrub animals were castrated at the first-aid centres in the area as well as in rural parts by the staff during the course of their tours. Ninety-four thousand six hundred and two animals were protected against epidemic diseases of livestock. Twenty-nine thousand seven hundred and thirty sheep were given prophylactic treatment for eradication of worm infestation.

(iv) *Coimbatore district*.—There were four blocks during the year at Tiruppur, Palladam, Kangayam and Kundadam.

There were 40 breeding bulls and 35 rams at stud during the year. One thousand one hundred and thirty-one birds and 1,476 eggs were distributed in villages. Four poultry units were opened in Palladam Block. Three thousand two hundred and seventy-six fingerlings were distributed in Kundadam Block. Pasture improvement was carried out in 60 acres.

One cattle show was organized. One hundred and thirty-eight village meetings were conducted to educate ryots in Animal Husbandry.

During the course of tours and at the first-aid centres in the area, a total number of 7,162 cases were treated and 1,505 castrations were performed. Fifty-three thousand three hundred and sixteen inoculations and vaccinations among cattle, sheep and poultry were done. Fifteen thousand one hundred and sixteen sheep were dewormed for eradication of worm infestation.

(v) *South Kanara district*.—There were four blocks in this district at Manjeshwar, Byndoor, Nileshwar and Sullia.

There were 35 breeding bulls and 2 rams for stud purposes in villages. Three hundred and ninety exotic birds and 1,128 eggs were distributed in rural parts for raising poultry units.

Nine hundred and eighty-four meetings were arranged in villages for educating the ryots in Animal Husbandry. Six breeding associations were formed. Six and a half acres of pasture was brought under improved methods. Two cattle shows were held in these areas.

First-aid centres were run in all the blocks besides treating ailing animals during the course of tours by the staff. Four thousand and forty-seven animals were treated and 1,727 castrations were done during the year. Forty-four thousand six hundred and eighty inoculations were done as a control measure against epidemics.

(vi) *Nilgiri district*.—This scheme covers the entire district consisting of two blocks at Ootacamund and Coonoor.

There were 24 breeding bulls and 20 rams for stud purposes distributed all over the area. One hundred and fifty-two exotic birds and 36 eggs were distributed. The cross-breeding scheme through artificial inseminations was in operation during the year in Ootacamund area. Thirty-four meetings were conducted in villages, for educating ryots in livestock improvement.

Two thousand and seventy-six cases were treated and 428 castrations were done during the year at the first-aid centres as well as in rural parts during the course of tours by the staff.

(vii) *Salem district*.—There were four blocks at Krishnagiri, Athoor, Kaveripatnam and Peddanaickenpalayam.

There were 32 breeding bulls and 15 rams for stud purposes distributed all over the area. Three hundred and seventy-seven exotic birds and 7,853 eggs were distributed for raising backyard poultry units in villages.

Eighty-nine meetings were conducted in villages for purpose of advising ryots on Animal Husbandry. Two acres were brought under cultivation of exotic grasses.

There were 2 minor veterinary dispensaries and 4 first-aid centres functioning in these areas. Four thousand one hundred and seven cases were treated and 610 castrations were done. Twelve thousand seventy-nine animals were protected against epidemics.

(viii) *North Arcot district*.—There were four blocks at Mandakalathur, K.V. Kuppam, Tiruvannamalai and Kalasapakkam.

There were 23 breeding bulls and 37 rams for stud purposes distributed all over the area. One hundred and twenty-five exotic birds and 816 eggs were distributed in the area.

One hundred eighty-nine meetings were organized in villages to educate ryots on matters relating to livestock development. Two cattle shows were conducted in these areas.

There were 44 poultry units functioning with a strength of 73 cocks, 239 hens and 192 chicks of exotic breed. Thirteen thousand one hundred and thirty eggs were produced at these units, out of which 3,816 eggs were sold for hatching in these units. Twenty birds were distributed in Tiruvannamalai Block under the scheme of Indian Council of Agricultural Research.

Two thousand nine hundred and twenty-six ailing animals were treated and 1,238 castrations were done during the year. So far, 145,901 animals were protected against epidemics in these areas. Six hundred and sixty-one sheep were dewormed.

(ix) *Ramanathapuram district*.—There were four blocks at Srivilliputhur, Sivakasi, Rajapalayam and Singampuneri.

There were 31 breeding bulls and 35 rams for stud purposes distributed all over the area. One hundred and eighty-nine exotic birds and 1,207 eggs were distributed in villages for raising poultry units. Poultry Production Centre at Malli is also situated in the National Extension Scheme area of this district. One thousand slips of guinea grass were distributed for cultivation. Four cattle shows were organized in these blocks. Three hundred and eighty-one meetings in villages were organized for propaganda on livestock improvement.

Ailing animals were treated and scrub animals were castrated at the first-aid centres of these areas and in villages by the staff on tour and thus 7,399 morbid cases were rendered treatment and 2,214 castrations were done. Twenty-three thousand four hundred and sixty-four animals were protected against epidemics. Two thousand eight hundred and fifty-six sheeps were dewormed for eradication of worminous infestation.

(x) *Tanjore district*.—There were eight blocks covering the whole of Tanjore district at Kumbakonam, Mayuram (East and West), Papanasam (South and North), Sirkazhi, Vedaranyam and Thiruthuraiipoondi.

There were 49 bulls all over the area under this scheme and 11 bucks in Kumbakonam and Thiruthuraiipoondi blocks for stud purposes. There were two Artificial Insemination Centres at Kumbakonam and Mayuram with four sub-centres attached to each. One hundred and twenty-three exotic birds and 388 eggs

were distributed in villages. The poultry production centre at Saliangalam is situated within this area with White Leghorn breed. One hundred and twenty birds and 1,567 eggs were sold to the public from this centre for rearing and hatching respectively.

One livestock improvement centre with three Umbalacheri bulls and one Murrah buffalo bull was started at Alathambody, during the year. A poultry unit with White Leghorn breed was also started at this centre.

Twenty-two thousand six hundred and ninety-nine ailing animals were treated and 5,698 castrations were done in villages by the staff while on tour and at the first-aid centres and Veterinary Institutions under this scheme. Eighty-nine thousand eight hundred and seventy-two animals were protected against epidemics.

(xi) *Malabar district*.—There were four blocks in the district at Taliparamba, Tellicherry, Payyanur and Kuthuparamba.

There were eight breeding bulls and two bucks in the area during the year. Five cattle shows were conducted in these areas. One hundred and ninety-eight exotic birds and 1,630 eggs were distributed for rearing in villages. Seven poultry units were established during the year. Poultry Breeding Co-operative Society was organized. Fifty-four meetings were organized in villages for educating the ryots in livestock development.

There is a minor veterinary dispensary at Taliparamba. Three thousand nine hundred and ninety-six ailing animals were treated and 983 scrub animals were castrated by the staff on tour and in the above institution. Seven thousand three hundred and eighty animals were protected against epidemics.

(xii) *Tirunelveli district*.—There were five blocks in the district at Kovilpatti, Valliyoor, Sankarankoil, Kuruvikulam and Cheranmahadevi.

There were 9 breeding bulls and 21 rams for stud purposes in these areas. One artificial insemination centre was functioning at Cheranmahadevi. One hundred and eighty-two exotic birds and 893 eggs were distributed for rearing in the villages. One poultry breeding association and four livestock breeding associations were organized. Two hundred and seventy-six meetings were arranged in villages for educating the ryots on livestock development. Two cattle shows were conducted.

There were two dispensaries and four first-aid centres in these areas. Fifteen thousand nine hundred and fifty-two ailing animals were treated and 5,362 scrub animals were castrated both in these institutions and by the staff on tour in villages. Fifty-six thousand, six hundred and twenty-one inoculations were done during the year against epidemics.

(xiii) *Tiruchirappalli district*.—There were five blocks in the district at Veilani, Pudukkottai, Musiri, Perambalur and Karur.

There were 77 breeding bulls and 29 rams at stud, located at various centres of these areas. Two hundred and sixty-seven exotic birds and 660 eggs were distributed in villages for raising poultry units. One breeding association and one co-operative milk-supply society were started in Musiri block. Five cattle shows were conducted in these blocks. Eight demonstration plots planted with exotic grasses were raised. Eighty-seven meetings were organized in villages for educating ryots on Livestock Improvement.

In addition to the veterinary institutions of the department in these areas, first-aid centres were also run in these blocks under this scheme. Three thousand four hundred and thirty-seven ailing animals were treated and 1,249 scrub animals were castrated at these centres as well as in villages by the staff on tour. Eleven thousand five hundred and thirteen animals were protected against epidemics during the year.

CHAPTER XI—VETERINARY PUBLIC HEALTH.

109. The Public Health activities on veterinary aspect were under the purview of this department which consisted of inspection of milking yards and milch animals belonging to public institutions, inspection of meat at abattoirs and inspection of lethal chambers maintained by municipalities. These activities were carried on through the Veterinary Assistant Surgeons of this department.

(a) *Inspection of milch animals*.—The general health of milch animals belonging to 51 co-operative milk-supply unions and societies were examined by the staff during the year. The owners of these animals were also given advice on proper maintenance with judicious feeding and breeding.

The milking yards in the Government human hospitals and the animals brought there for milking were also inspected for their hygienic maintenance and general health. Thus 47 institutions were inspected during the year by the staff.

(b) *Inspection of meat*.—With a view to ensure the supply of good and hygienic meat for consumption, inspection of animals prior to slaughter and carcasses after slaughter, by the qualified veterinary personnel is insisted upon with the local boards and municipalities which maintained public abattoirs. Thus on a part-time basis, slaughter-houses maintained by 40 panchayats and 49 municipalities were under the supervision of Veterinary Assistant Surgeons.

The animals were examined ante-mortem for their fitness for slaughter. Thus, 40,348 cattle 667,946 sheep, 513,535 goats and 896 pigs were inspected and 3,141 cattle, 14,228 sheep, 11,632 goats and 2 pigs were condemned as unfit for slaughter.

After the slaughter of animals the carcasses were examined before passing the same as fit for consumption. As a result of these examination, 4,880 carcasses (whole) and 20,449 in parts were condemned as unfit for consumption during the year.

(c) *Lethal chambers.*—The various municipalities in the state maintain lethal chambers for the destruction of stray dogs, and thereby controlling the incidence of rabies in dogs and the risk of spread of this disease to human beings. This department through its staff provides for the technical advice and inspection, for the proper working and maintenance of these chambers. Thus during the year 47 lethal chambers in which 2,128 dogs were destroyed, were inspected and necessary advice and suggestions were given on the proper destruction of dogs and the upkeep of those lethal chambers.

CHAPTER XII—PROPAGANDA.

110. Propaganda paves the way for progress and its importance is more so in this 'Planning Era' of fixing targets and achieving progress in the plan period. The expansion of the department year after year in all angles was considerable and likewise much had been done on the side of educating the illiterate and conservative ryots of the rural parts to take up readily the modern methods in development, care and management of livestock. Besides attending to the various aspects like veterinary education, disease control and treatment, investigation and research, development of livestock, etc., attention was also focussed well upon the propaganda aspect with a view to impress upon the ryots on the advantages and the need for adopting scientific and modern method in Animal Husbandry, in the interest of the prosperity of the nation.

This aspect of work was carried on (i) in almost all the villages of the State through mass contact in village meetings or personal contacts with distribution of printed leaflets in regional languages during the course of routine tours by the technical personnel in this department and in National Extension Service and Community Projects schemes as well, (ii) through organizing exhibitions on the eve of all departmental functions like cattle shows. Annual Day celebrations, various conferences and in the leading Swadeshi and industrial exhibitions organized in different parts of the State, (iii) through Audio-Visual Medium and (iv) through the conduct of livestock shows and calf rallies.

For this purpose, a propaganda section consisting of a Veterinary Assistant Surgeon and two artists, with the equipment for photography and Audio-Visual Education was functioning during the year. The main functions of this unit were (i) to participate in leading exhibitions of the State, (ii) to prepare leaflets, charts, posters, maps, models, etc., for exhibitions and supply to district staff and (iii) to screen educational films on Animal Husbandry in various parts of the State.

Thus during the year, the following leaflets, posters, maps and photographs were prepared :—

(a) *Leaflets.*—The revised departmental leaflets were got reprinted to the tune of about 50,000 copies in each, in different languages (viz.), in English, Tamil, Malayalam and Kannada and distributed to the district staff.

(b) *Posters, charts and maps.*—The following posters and charts were got printed in colours, 500 copies in each, for distribution to the districts :—

- (1) Scindhi bull.
- (2) Scindhi cow.
- (3) Kangayam bull.
- (4) Kangayam cow.
- (5) Ongole bull.
- (6) Ongole cow.
- (7) Hallikar bull.
- (8) Hallikar cow.
- (9) Murrah buffalo bull.
- (10) Murrah she-buffalo.
- (11) Bellary sheep.
- (12) Tellichery goats.
- (13) Nellore ram.
- (14) Rhode-Island Red fowls.
- (15) White Leghorn fowls.
- (16) Light Sussex fowls.
- (17) Black Minorca fowls.
- (18) Activities of Animal Husbandry department in Madras

State.

- (19) Castration of bulls.
- (20) Artificial insemination.
- (21) Artificial insemination of farm animals.
- (22) Advantages of artificial insemination.
- (23) Calendar for sheep breeding in Hosur.
- (24) Ring Ready-Reckoner.
- (25) Location of different breed of sheep in India.
- (26) Location of different breed of goats in India.
- (27) Rinderpest disease.
- (28) Foot and Mouth diseases.
- (29) Chronic luxation of Patella.
- (30) If there is an out-break of disease in a village.
- (31) Success.

The following charts, posters and maps were prepared during the year :—

- (1) Calendar for deworming.
- (2) Work done in quarantine stations.
- (3) Sign board for 'Gosamvardhana Day'.
- (4) 'Milk Day' posters.
- (5) 'Milk Day' slogans.
- (6) Map showing livestock farms in Madras State.
- (7) Map showing quarantine stations in Madras State.
- (8) Map showing Hemorrhagic Septicæmia.
- (9) Map showing endemic areas and seasonal occurrence of Anthrax.
- (10) Map showing endemic areas and Seasonal Hemorrhagic Septicæmia.
- (11) Map showing endemic areas and Seasonal Black-quarter.
- (12) Map showing activities of Animal Husbandry department in Madras State.
- (13) Graphs on lactation.
- (14) Graphs on milk yield of Kangayam and Scindhi cows.
- (15) On artificial insemination.
- (16) Appearance of semen.
- (17) Advantages of artificial insemination.
- (18) Kambakkam Salvage farm for dry cows.

(c) *Photographs*.—Photographs of the following were taken and more than 1,000 enlarged prints were made for distribution to the district staff :—

- (1) District Livestock Farm, Malabar.
- (2) Poultry Research Station, Teynampet.
- (3) Governor's visit to Livestock Research Station, Hosur.
- (4) Visit of Minister for Agriculture to Institute of Veterinary Preventive Medicine, Ranipet.
- (5) Golden Jubilee celebrations of Madras Veterinary College.
- (6) Southern Regional Cattle and Poultry Shows, Coimbatore.
- (7) Cattle shows at Saidapet.
- (8) Exhibition at All-India Radio.
- (9) 'More Milk Day' celebrations.
- (10) Breeding of cattle.
- (11) Artificial insemination.

111. *Livestock shows*.—The progress of propaganda was supplemented with the conduct of livestock shows and calf rallies at all levels (viz.) village, district and state with a view to inculcate a competitive spirit among ryots, in rearing different species of domesticated livestock.

During the year under report, Southern Regional All-India Cattle and Poultry Shows, First State Annual Poultry Shows 74 one-day cattle shows, 13 calf rallies and 10 sheep shows were also organized on a grand scale.

(i) *Southern Regional All-India Cattle and Poultry Shows*.—For the benefit of the breeders of livestock in the Southern Region of the country consisting of Madras, Mysore, Hyderabad, Andhra, Travancore, Cochin, Coorg and southern part of Bombay State, Regional Cattle and Poultry shows were held at Coimbatore from 1st June to 5th June by the All-India Cattle Show Committee with the co-operation of the State Government. The following breeds of cattle, sheep and poultry were scheduled for exhibition at the show.

(1) *Cattle*.—Amrit Mahal, Bargur, Dangi, Deeni, Hallikar, Kangyam, Khillari, Krishna Valley, Umblacherry, Ongole, Red Scindhi, Red Scindhi graded, Sahiwal, Punganur and Alamabady.

(2) *Buffaloes*.—Murrah, Murrah graded, Dharwar, Parlakimedi.

(3) *Sheep*.—Bellary, Deccani, Hassan, Mandya, Nellore, Mecheri or Mylambody, Nilgris, Kalharin or Karuvai, Coimbatore and Bikanir.

(4) *Goats*.—Malabar or Tellicherry.

(5) *Poultry*.—Foreign and Desi breeds.

The State Government was pleased to sanction a sum of Rs. 4,000 towards these shows besides rendering full technical help through its Animal Husbandry Department. Encouragement for participation in the shows was given to breeders by affording railway concession to the transport of show animals. These shows were declared open by Sri Prakasa, Governor of Madras, on 1st June 1956 and the prizes were distributed by Sri M. Bhaktavatsalam, Minister of Agriculture. Leading breeders of the States of Southern Region exhibited their animals in the shows while the leading elites of the State participated during the shows extending full co-operation and enthusiasm by way of donating valuable rolling cups or otherwise.

The leading officials of the State of Animal Husbandry Department along with the officials of the All-India Cattle Show Committee conducted the shows successfully. The services of leading Animal Husbandry experts from all over the country were requisitioned, who readily obliged by acting as judges for various breeds and classes of animals during the shows.

A total number of 172 prizes were awarded to the worth of Rs. 8,160 for the various species of livestock exhibited in the show. The young Kangayam bull of Sri N. Nallasenapathi Sarakurai Manradiar, M.L.C., Pattagar of Palayakkottai, Erode, was adjudged the best animal of the show and was awarded the championship prizes (viz.), cash prize offered by the Central Council of Gosamvardhana and the Gopal Krishnan Challenge Cup.

(ii) *One-day cattle shows*.—These shows were arranged all over the State in various places at the time of local fairs and festivals or during the Gosamvardhana Week or Pongal Week or More Milk Day Celebrations. Seventy-four cattle shows were held of which 12 were conducted by private bodies.

Though called a cattle show, other species of livestock were also allowed for competition as usual to create enthusiasm at village level to rear all species of livestock in sound condition. Thus, 63,055 animals participated in all these shows. A total number of 3,090 prizes were awarded towards the cost of which a sum of Rs. 7,500 was sanctioned by Government.

(iii) *Calf rallies*.—In the Key Village Scheme areas and areas where the artificial insemination work is in operation, these calf shows were arranged during the year with a view to overcome the general aversion among public against the artificial insemination and to create an enthusiasm for raising better calves to-day and thereby paving the way for the better cattle of the future.

A total number of 2,981 animals participated in 13 calf rallies conducted during the year. One thousand seven hundred and sixty-seven prizes were awarded for which a sum of Rs. 4,050 was sanctioned by the Government.

(iv) *Sheep shows*.—During the year ten sheep shows were conducted with the sanction of the Government and contribution of Rs. 2,000 from Government. These shows were organized in different sheep rearing tracts of the State as detailed below :—

Name of place. where the show was held.	Name of district.
1 A. Ammapatti	Madurai.
2 Soundararajapuram	
3 Chinnasalem	
4 Sular	Coimbatore.
5 Vettakaranpudur	
6 Mecheri	
7 Pedda Belagondapall	Salem.
8 M. Reddipatti	
9 Kosavampalayam	
10 Thuraiyur	Tiruchirappalli.

These shows are becoming popular, which would be seen from the fact that exhibits numbering over 1,000 in most of these shows and in some over 2,000 were brought to these shows. Four hundred and ninety-nine prizes were awarded in all these shows to the worth of Rs. 1,638-10-9.

(v) *Poultry shows*.—Besides the Southern Regional All-India Poultry Show conducted at Coimbatore, the first Annual Madras State Poultry Show was held on 19th March 1956 in Madras with a view to help the Poultry Industry in the State. Exhibits from all over the State (viz.), Coimbatore, Salem, North Arcot, Madurai districts were brought for the show. To encourage poultry breeders from all over the State in taking advantage of the show

railway concession for transport of birds was also provided. A total number of 414 exhibits of various breeds excluding those from Government Farms, participated in the show. A good number of birds from areas under National Extension Service Schemes were brought to the show. A total number of 88 prizes comprising of silver cups and medals were awarded besides the 4 special silver cups donated by high elites and leading firms of the city. The Government was pleased to sanction a sum of Rs. 1,000 towards this show.

112. '*More Milk Day*'.—Besides stepping up production through schemes under First and Second Five-Year Plans, it was thought useful to quicken the effect of these, by rousing the "Milk consciousness" among people in general and those in rural parts in particular. For this purpose, festival-like features as "More Milk Day" on a State-wide scale was considered fit to be organized every year on a fixed day and the same was inaugurated during the year on the Tamil New Year's Day (14th April 1955) to stress on the importance of milk, as more or less a cheap wholesome food and on the need for increased consumption, thereby providing a fillip to augment the production of milk.

The day was celebrated in Madras City and in the rural and urban parts of districts through the active co-operation of Revenue and Co-operative departments, the various social organizations and the public of the same.

The celebration was inaugurated by Sri K. Kamaraj Nadar, Chief Minister of Madras, in Madras City and thousands of poor folk and children were given milk free, by various organizations. In the districts also, free distribution of milk to the poor folk and children, rallies of school children carrying placards on milk and of animals, meetings and cattle shows were organized both in urban and rural parts.

Articles relating to "Milk Production and Consumption" both in Tamil and English were issued for publication in newspapers. A Government publication titled as "Milk—A symposium" was prepared for issue on sale to the benefit of the public containing articles on milk, written by various departmental officers.

113. '*Gosamvardhana Week*'.—The Gosamvardhana Week which was organized for the first time in 1952 by the Central Council of Gosamvardhana in connexion with Gopashtami had since become an annual feature, and thus during the year under report, this week was celebrated between 15th to 20th November 1955 all over the State. Throughout the State the celebration was gone through by holding cattle shows, exhibitions of cattle feed, dairy equipment, fodder preservation, meetings for educative propaganda on proper management of cattle, breeding, feeding, prevention of epidemics. During the year a special emphasis was made on "Grow More Fodder" and "Produce More Milk". This week was inaugurated on 16th November 1955 with a broadcast-talk by Sri M. Bhaktavatsalam, Minister for Agriculture. During

the week 19 cattle shows were conducted by this department one in each of the Government Livestock Farms at a total expenditure of Rs. 9,298-3-0 realized through Government contribution and public donations. A total sum of Rs. 5,000 was sanctioned by the Government for the purpose of the celebrations all over the State, of which 50 per cent was met by the Central Council of Gosamvardhana. A total number of 6,546 exhibits took part in these cattle shows, of which 1,177 were awarded prizes to the worth of Rs. 5,389-9-6. Along with cattle shows, public meetings and film shows were conducted at the various places besides the free distribution of milk to the poor folk and children on these days.

114. *Exhibitions.*—(a) Holding of exhibitions was one of the media utilized during the year for propagating the ideas on Animal Husbandry on modern economic lines and the activities of the Department and no function of the department was missed to be made use of, for this purpose at all levels, viz., village, taluk, district and State level. Exhibitions with posters, photos, models, museum specimens, samples, and living specimens like poultry were arranged during the one-day cattle shows, calf rallies, sheep shows, and Gosamvardhana, More Milk Day and Pongal Week Celebrations. In addition to the departmental functions, the fairs and functions of public interest were also well utilized. Thus the departmental exhibitions were held at the following places:—

- (1) The Park Fair Exhibition, Madras.
- (2) All-India Mahamakam Exhibition, Kumbakonam.
- (3) Health, Education and Industrial Exhibition at Kozhikode.
- (4) All-India Industrial Exhibition, Virudhunagar.
- (5) All-India Swedeshi and Art Exhibition, Coimbatore.
- (6) Village Leaders' Training Camp, Thirukalikundram.
- (7) Indian Industrial Exhibition, Tuticorin.
- (8) Rural Exhibition, Periyapalayam.
- (9) Village Leaders' Training Camp, Porur.
- (10) Exhibition to inaugurate the Sriperampudur National Extension Service Block.
- (11) Exhibition during Block Advisory Committee, Tiruvellur.
- (12) Tenth Anniversary Celebration of Food and Agriculture Organization at Kancheepuram.
- (13) Five-Year Plan Exhibition by All-India Radio, Tiruchirappalli.
- (14) All-India Southern Regional Cattle and Poultry Shows at Coimbatore.
- (15) Annual Flower Show, Ootacamund.
- (16) Bharat Scouts and Guides Carnival, Ootacamund.
- (17) Regional Health Conference, Gudalur.
- (18) First Annual Madras State Poultry Show, Madras.

(b) A gold medal was awarded to this department, in appreciation, by the exhibition committee of All-India Mahamakam Exhibition, Kumbakonam.

(c) *Film shows.*—Audio-visual method of propaganda was also adopted during the year with the kind co-operation of the United States Information Service, Madras, who were good enough to loan a cine projector and educative films on Animal Husbandry, besides training one of the Veterinary Assistant Surgeons in this projector-operator technique. These shows were conducted in the city of Madras and the districts of North Arcot, South Arcot, Tanjore and Chingleput. Film shows on livestock development were also shown during the conduct of Southern Regional All-India Cattle and Poultry Shows at Coimbatore.

CHAPTER XIII—STATISTICS.

115. The Statistical Section continued to function during the year under report.

As a normal feature, particulars of birth, mortality, lactation yield, etc., from the calf history sheets and monthly reports of the livestock farms of this State were entered in the concerned Herd Registers maintained in this office. Schemes relating to the Second Five-Year Plan were statistically scrutinized for the planning and development work. Statistical data of the estimate of the annual production of livestock products in Madras State, and the livestock slaughtered during 1954 were compiled.

116. The evaluation report pertaining to the livestock farms of this State, since their inception was prepared. The data pertaining to the years from 1924-25 to 1954-55 were compiled and classified for Livestock Research Station, Hosur and for other farms from the date of inception.

Livestock Research Station, Hosur.—The following is the classification:—

- (a) Total stock.
- (b) Milk yield of the completed lactations.
- (c) Annual production of milk.
- (d) Dry cows.
- (e) Details of bulls.
- (f) Young stock.
- (g) Mortality (young stock).
- (h) Birth weight of calves.
- (i) Disease position.
- (j) Milk and its products.
- (k) Fodder production.

(a) *Stock position at the farm.*—Strength of the farm relating to the annual changes:—

At the end of.	Sindhi.	Kangayam.	Hallikar.	Gir.	Total.
(1)	(2)	(3)	(4)	(5)	(6)
1924-25 ..	10	54	..	..	64
1937-38 ..	176	326	63	..	565
1947-48 ..	320	478	223	..	1,021
1954-55 ..	456	384	..	117	957

The figures for each of the first three breeds show a considerable increase in strength from 1937-38 to 1947-48.

(b) *Annual milk yield of completed lactation—Sindhi.*—The detailed particulars of milk yield of cows that completed lactation in each year for the different breeds were analysed. The average milk yield and daily average milk yield during the period 1926-27 to 1937-38 were 3,152.7 lb. and 10.9 lb. respectively. The same have gone up to 3,716.1 lb. and 12.1 lb. respectively during the period 1938-39 to 1953-54.

Kangayam.—The average milk yield and daily average milk yield were 1,561.3 lb. and 6.0 lb. respectively during 1926-27 to 1937-38. The same have slightly gone down to 1,518 lb. and 5.5 lb. respectively during 1938-39 to 1953-54.

Cross-breed.—The average milk yield and daily average milk yield during the period 1926-27 to 1937-38 were 2,584.7 lb. and 10.5 lb. respectively. The same have gone up to 3,943.1 lb. and 12.1 lb. respectively during the period 1938-39 to 1953-54.

Hallikar.—During the period of its maintenance at Livestock Research Station, Hosur, from 1935-36 to 1950-51, the average milk yield and daily average milk yield was 925.0 lb. and 3.8 lb. respectively.

Ongole.—The average milk yield and the daily average milk yield for the period 1926-27 to 1933-34 were 2,092.5 lb. and 8.8 lb. respectively.

Gir.—The average milk yield and daily average milk yield for the period 1950-51 to 1953-54 were 3,183.2 lb. and 11.8 lb. respectively.

(c) *Annual production of milk—Sindhi.*—A comparative study of the average at the end of 1937-38 and 1954-55 indicates that the daily average production of milk yield has increased from 12.3 to 12.9 and the yearly average production has also increased from 3,969.9 lb. to 4,663.6 lb.

Kangayam.—Taking the overall average it is seen that for six years in the period prior to 1938-39 the average annual production is 2,303.0 lb. while that in respect of the latter period it is only 2,140.1 lb. A perusal of the daily average production also shows that the position corresponds to that of total milk yield, the overall average being 6.7 lb. and 5.8 lb. for the two periods.

Gir.—The annual average production is 4,532.9 lb. and the daily individual average is 12.8 lb.

Hallikar.—During the period 1939-40 to 1949-50 the annual average production was 1,449.6 lb. and the daily average was 4.4 lb.

Cross-breed.—The average annual production of milk is 4,331.7 lb. and the daily average is 12.3 lb.

(d) *Dry cows.*—A study of the wet and dry cows at the farm since its inception for all the breeds has been undertaken and the percentage of cows in milk and dry cows for each breed are furnished.

Breed.	Year.	Ratio of cows in milk to dry.
(1)	(2)	(3)
Sindhi ..	1924-25 to 1936-37	67.34 : 32.66
	1937-38 to 1954-55	56.41 : 43.59
Kangayam.	1924-25 to 1936-37	64.74 : 35.26
	1937-38 to 1954-55	50.13 : 49.87
Hallikar ..	1939-40 to 1949-50	55.27 : 44.73
Ongole ..	1926-27 to 1928-29	53.56 : 46.44
Gir ..	1949-50 to 1954-55	53.07 : 46.93
Cross-breed.	1938-39 to 1954-55	49.85 : 50.15

(e) *Bulls—Sindhi.*—In the Sindhi breed from 1925-26 to 1954-55, 559 bulls were issued from this farm to outside areas for breeding purposes. On an average during the period of 30 years, 18.6 bulls have been issued normally. During the first part ending with 1937-38, 109 bulls were issued with an average of 8.4 whereas from 1938-39 to 1954-55, 450 bulls were issued with an annual average of 26.5 bulls issued for breeding purposes.

Kangayam.—From 1926-27 to 1954-55, 580 bulls were issued from this station for breeding purposes. The average number during 1938-39 to 1954-55 is 23.1 as compared with 14.1 during the previous half.

Hallikar.—In the Hallikar herd during the period 1938-39 to 1950-51, 191 Hallikar bulls were distributed from the station to outside areas.

Ongole.—Thirty-six bulls were issued from 1926-27 to 1934-35 from this station for breeding purposes.

Gir.—During the period from 1951-52 till 1954-55, 10 gir bulls have been issued for breeding purposes to outside areas.

(f) *Young stock—Births—Sindhi.*—During the period from 1924-25 to 1953-54 a total number of 1,661 calves were born in this breed at this station of which 848 were bull calves and 813 heifer calves. The sex ratio works out to 51.1 per cent for bull calves and 48.9 per cent for heifer calves. The increase in the number of born is very marked from 1948-49 onwards.

Kangayam.—A total number of 2,442 calves were born in this breed since the inception of the farm up to 1953-54 of which 1,248 were bull calves and 1,194 were heifers. The sex ratio in

this case also is 51.1 per cent for bull calves and 48.9 per cent for heifer calves. There has been a steady increase in the birth of calves since 1948-49.

Ongole.—During the period of stay of Ongole breed at this farm from 1924-25 to 1935-36 there were a total of 219 calves born of which 102 were heifer calves and 117 were bull calves.

Cross breed.—The cross breeds which are maintained since the inception of the farm have produced a total of 484 calves of which 243 are male and 241 female calves.

Hallikar.—The Hallikar breed remained in the farm from 1934-35 to 1949-50. During the period 601 calves were born. Of these, 316 were bull calves and 288 were heifer calves. The sex ratio in this case works out to 52.3 per cent for bull calves and 47.7 per cent for heifer.

Gir.—The breed was introduced at this farm in 1949-50 and so far 102 calves have been born of which 46 are males and 56 females.

(g) *Young stock mortality.*—The mortality among calves at this farm is considerably low covering an overall percentage of 9.3, for a total of 5512 calves born during the period of 1924-25 to 1953-54 there have been only 511 deaths among calves.

(h) *Birth weight of calves.*—(a) *Sindhi.*—The weighted average birth weight of 952 calves born, is 45.7 lb. The weighted average birth weight of the heifer calves was 44.8 lb. and that of bull calves 46.5 lb. showing an increase of 1.7 lb. in the case of bull calves.

(b) *Kangayam.*—The weighted average birth weight of 1,397 calves born is 44.9 lb. The weighted average of the heifer calves was 43.5 lb. and that of bull calves 46.3 showing an increase of 2.8 lb. in the case of bull calves.

(i) *Disease position.*—During the years 1924-25 to 1954-55 there were outbreaks of Rinderpest, Blackquarter, Foot and Mouth disease and occurrence of Johne's disease and Brucellosis in the farm. On the whole there were 332 deaths from the above diseases. All possible preventive measures such as prophylactic vaccinations, isolation, disinfection, treating the sick were adopted and the disease had been brought under control.

(j) *Milk and milk products.*—The total quantity of the milk sold to the public from the farm and converted into milk products from the years 1938-39 to 1954-55 was 2,873,394 lb. with an annual average of 113,735 lb. of milk sold and 77,825 lb. of milk converted into milk products.

(k) *Fodder position.*—The total area available for cultivation of fodder and use as pasture is 1,193 acres. Of these an area of a little over 100 acres is utilized for the cultivation of fodder both under irrigated and non-irrigated condition and the rest for pasture, green grass and hay making. The average production of cultivated fodder per year is 1,765,745 lb. with an average of 16,244 lb. per acre. The average area under pasture is 951 acres.

117. A statistical study on the different generations for the different breeds was done taking the following factors for different lactations :—

- (1) Milk yield.
- (2) Lactation period.
- (3) Dry period.
- (4) Calving interval.
- (5) Daily average milk yield (lactation period).
- (6) Daily average milk yield (calving interval).
- (7) Age at first calving.
- (8) Production life expressed in lactations.

(i) *Sindhi.*—Records of 1,317 cows were analysed for arriving at the following results :—

Generationwise particulars—Sindhi.

Number of generations*	Milk yield.		Lactation period.		Dry period.		Calving interval.	
	Number of indivi- duals.	Weighted average in lb.	Number of indivi- duals.	Weighted average in days.	Number of indivi- duals.	Weighted average in days.	Number of indivi- duals.	Weighted average in days.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Foundation stock.	162	3,538.8	162	309	136	196	136	500
First generation.	205	3,942.1	205	317	178	189	178	509
Second generation.	278	4,257.2	278	317	232	203	232	522
Third generation.	339	4,010.4	339	312	234	225	234	538
Fourth generation.	255	3,763.9	255	300	194	185	194	489
Fifth generation.	70	3,509.6	70	307	48	170	48	480
Sixth generation.	8	3,492.9	8	292	6	226	6	531
Total	1,317		1,317		1,078		1,078	
Weighted average.		3,922.2		310		201		513

	Daily average lactation period.		Daily average (C.I.)		Number of animals.	Average age at first calving in days.
	Number of indivi- duals.	Weighted average in lb.	Number of indivi- duals.	Weighted average in lb.		
	(10)	(11)	(12)	(13)	(14)	(15)
Foundation stock ..	162	11.5	136	7.3	6	1,315
First generation ..	205	12.3	178	8.3	46	1,201
Second generation ..	278	13.2	232	8.8	76	1,251
Third generation ..	339	12.8	284	8.1	88	1,293
Fourth generation ..	255	12.3	194	8.1	83	1,304
Fifth generation ..	70	11.7	48	7.8	32	1,354
Sixth generation ..	8	12.0	6	7.1	3	1,165
Total ..	1,317		1,078		334	1,275
Weighted average ..		12.5		8.2		

Lactation wise particulars—Sindhi.

Number of lactation.	Milk yield.		Lactation period.		Dry period.	
	Number of indivi- duals.	Weighted average in lb.	Number of indivi- duals.	Weighted average in days.	Number of indivi- duals.	Weighted average in days.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
I Lactation ..	353	3,629.9	353	319	310	226
II Do. ..	794	3,842.3	294	308	249	199
III Do. ..	223	4,102.1	223	306	188	185
IV Do. ..	166	4,185.8	166	306	132	194
V Do. ..	123	4,005.5	123	296	83	193
VI Do. ..	71	4,305.4	71	319	56	176
VII Do. ..	46	4,295.0	46	316	34	191
VIII Do. ..	25	3,905.8	25	298	16	171
XI Do. ..	11	3,418.1	11	224	7	146
X Do. ..	5	2,752.4	5	237	3	144
Total ..	1,317		1,317		1,078	
Weighted average ..		3,922.2		310		201

	Calving interval.		Daily average lactation period.		Daily average dry period.	
	Number of indivi- duals.	Weighted average in days.	Number of indivi- duals.	Weighted average in lb.	Number of indivi- duals.	Weighted average in lb.
	(8)	(9)	(10)	(11)	(12)	(13)
I Lactation ..	310	547	353	11.3	310	7.1
II Do. ..	249	510	294	12.2	249	8.0
III Do. ..	188	492	223	13.1	188	8.8
IV Do. ..	132	503	166	13.6	132	9.0
V Do. ..	83	503	123	13.2	83	9.2
VI Do. ..	56	490	71	13.7	56	8.9
VII Do. ..	34	504	46	13.7	54	8.3
VIII Do. ..	16	456	25	13.9	16	8.3
IX Do. ..	7	474	11	10.6	7	7.0
X Do. ..	3	435	5	9.5	3	7.1
Total ..	1,078		1,317		1,078	
Weighted average ..		513		12.5		8.2

(ii) *Sire index and progeny testing.*—The following table gives at a glance the findings as assessed in the main report:—

Sindhi bulls' sire index and progeny testing.

Bull number.	Increase or decrease in the yield of daughters as compared to the dams (adjusted yields).		Sire index.	Remarks.
	Decrease. (-)	Increase. (+)		
(1)	(2)	(3)	(4)	(5)
			LB.	
43 (old) ..	..	+ 1,011.0	4,351.4 + - 553.6	Progeny testing signifi- cant. Sire index high; daughters superior to dams as regards milk yield.
8 ..	..	+ 549.3	4,357.3 + - 549.3	Progeny testing reveals that the increase in milk of the daughters is not significant.
98 ..	..	+ 53.6	3,589.9 + - 513.2	Progeny testing shows that result is not significant indicating that there is no differ- ence in the milk yields of dams and daughters.
124 ..	..	- 74.1	3,189.4 + 655.6	Fall in milk yield. Sire index also low.
129 ..	..	- 748.1	2,051.2 + - 888.8	Sire index low; perfor- mance of bull poor as regards milk yield of daughters.
136 ..	..	+ 65.3	3,026.7 + - 672.6	Increase not significant; bull below average.
236 ..	..	+ 563.0	4,137.1 + - 503.9	Good bull; milk yield of progenies better than that of dams.
38 ..	..	+ 689.5	4,261.4 + - 290.7	A good bull.
65 ..	..	- 1,127.4	1,684.3 + - 380.0	Bull of poor capacity.
333 ..	..	+ 121.3	3,009.1 + - 312.8	Increase in milk yield not significant; sire index also not high.
102 ..	..	- 417.3	2,622.6 + - 609.0	Low sire index; bull considered poor regard- ing milk qualities.

Bull number.	Increase or decrease in the yield of daughters as compared to the dams (adjusted yields).		Sire index.	Remarks.
	Decrease. (-)	Increase. (+)		
(1)	(2)	(3)	(4)	(5)
56	..	+ 5.2	3,877.3 + - 399.3	Though the increase is not significant there is wide variation between the performance of dams and daughters : One daughter gave 10,081 lb. in a lactation while one gave only 1,257 lb. The adjusted average milk yield of the daughters was 781.81 lb. more than that of the dams. The performance of this bull was very good.
144	- 41.8	..	3,359.3 + - 507.4	Sire index low ; bull considered to be poor quality.
139	- 998.1	..	2,113.0	Dams mated were of superior quality as such the sire index is an underestimate of the bull. Real capacity of the bull cannot be judged.
233	..	+ 314.3	4,045.8 + - 879.8	This bull was able to transmit milk qualities to the daughter.
282	..	..	3,035.2 + - 613.9	The estimate of this bull cannot be judged, since the dams mated are of high milk yielding cows.
255	- 51.5	..	3,497.9 + - 401.1	This bull was at stud for a very long time but did not bring about any appreciable improvement. Sire index is also poor.

(iii) *Seasons of calving.*—(a) A study of the distribution of calving in the different months was made which revealed that the proportion of calving in different months remain similar for different generations.

(b) With a view to find out whether the months of calving have any effect on the total milk yield for the lactation, an analysis of 292 first lactation records was made. It revealed that the months of calving have no effect on the milk yield.

(iv) *Heavy milk yielders*—

Serial number.	Cow number.	Generation.	Highest milk yield in a lactation in lb.
(1)	(2)	(3)	(4)
1	143	Second.	10,081.0
	132	Do.	11,443.0
	298	Third.	10,738.0
	309	Do.	11,480.0
	291	Fourth.	10,450.0

(v) *Average number of calvings of Sindhi cows.*—A study of 306 animals which had completed 1,388 lactation records were considered with a view to find out the average number of lactations that the Sindhi cows could give at the farm. The animals which had completed full period of their stay with normal lactations were considered. It is seen that on an average the Sindhi cows have given 4.5 calvings.

(vi) *Correlation of different milk characters of Sindhi*—

Serial number and factors correlation.	Correlation co-efficient.	Remarks.
1 Milk yield and lactation period ..	0.81	Highly significant. Association of milk yield with lactation period well pronounced.
2 Dry period and calving interval ..	0.92	Highly significant. Dry period is well associated with calving interval. Hence dry period should be controlled and calving interval regulated.
3 Age at first calving and average production life.	0.32	Not significant. There is no association between the two factors.
4 Age at first calving and milk yield in first lactation.	Varies from 0.13 to 0.42	Not significant. Generally there is no association between the two factors.

(vii) *Productive life of Scindhi cattle.*—The average productive life of 355 Scindhi cows with 942 lactation records has been studied to find out the productive capacity of Scindhi animals at Hosur. The average productive life is calculated by the formula.

$$\text{Average productive life} = 1 + \frac{\text{Average age at calvings.}}{\text{Average age at first calving.}} \times \frac{\text{Average calving interval.}}{\text{Average age at first calving.}}$$

The results for the different generations are extracted below :—

Generation.	Average productive life in terms of lactation.
First generation	2.8
Second generation	2.5
Third generation	2.5

118 (i) *Kangayam*.—A statistical study of 2,065 cows was made and the results are tabulated below :—

Generationwise particulars—Kangayam.

Number of generation.	Milk yield.		Lactation period.		Dry period.		Calving interval.	
	Number of individuals.	Weighted average in lb.	Number of individuals.	Weighted average in days.	Number of individuals.	Weighted average in days.	Number of individuals.	Weighted average in days.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Foundation stock ..	310	1,833.2	310	263	274	188	274	448
I Generation ..	422	1,848.2	422	277	357	176	357	455
II Do. ..	565	1,609.8	565	271	466	216	466	461
III Do. ..	492	1,442.6	492	253	383	218	383	482
IV Do. ..	224	1,317.6	224	253	155	229	155	486
V Do. ..	44	1,009.8	44	223	20	203	20	464
VI Do. ..	7	1,182.7	7	258	5	221	5	491
VII Do. ..	1	823.5	1	232	..	..	..	..
Total and weighted average.	2,065	1,605.9	2,065	264	1,660	204	1,660	471

Number of generation.	Daily average (lactation period).		Daily average (calving interval).		Number of animals.	Average age at first calving (in days).
	Number of individuals.	Weighted average in lb.	Number of individuals.	Weighted average in lb.		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Foundation stock ..	310	6.8	274	4.3	36	1,399
I Generation ..	422	6.8	357	4.4	98	1,254
II Do. ..	565	5.9	466	3.7	138	1,268
III Do. ..	492	5.4	383	3.3	155	1,432
IV Do. ..	224	5.1	155	3.0	99	1,501
V Do. ..	44	4.5	20	2.2	29	1,465
VI Do. ..	7	4.6	5	2.6	4	1,428
VII Do. ..	1	3.5	..	..	..	..
Total and weighted average.	2,065	5.9	1,660	3.8	559	1,372

Lactationwise particulars.—Kangayam.

Number of lactations.	Milk yield.		Lactation period.		Dry period.	
	Number of individuals.	Weighted average.	Number of individuals.	Weighted average.	Number of individuals.	Weighted average.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
I Lactation ..	515	1,403.1	515	256	391	241
II Do. ..	364	1,547.5	364	265	306	193
III Do. ..	293	1,676.6	293	266	254	204
IV Do. ..	241	1,685.9	241	266	205	179
V Do. ..	202	1,750.2	202	268	162	196
VI Do. ..	146	1,807.9	146	267	121	200
VII Do. ..	109	1,763.9	109	267	92	181
VIII Do. ..	85	1,758.5	85	273	63	170
IX Do. ..	51	1,586.8	51	260	31	226
X Do. ..	26	1,740.7	26	270	18	188
XI Do. ..	20	1,454.9	20	270	11	193
XII Do. ..	10	1,351.8	10	257	6	225
XIII Do. ..	3	1,530.8	3	228	..	..
Weighted average ..	2,065	1,605.9	2,065	264	1,660	204

Number of lactations.	Calving interval.		Daily average lactation period.		Daily average calving interval.	
	Number of individuals.	Weighted average.	Number of individuals.	Weighted average.	Number of individuals.	Weighted average.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
I Lactation ..	391	5.13	515	5.2	391	3.2
II Do. ..	306	4.61	364	5.8	306	3.6
III Do. ..	254	4.35	293	6.3	254	4.0
IV Do. ..	205	4.46	241	6.3	205	4.1
V Do. ..	162	4.68	202	6.4	162	4.0
VI Do. ..	121	4.66	146	6.7	121	4.1
VII Do. ..	92	4.49	109	6.5	92	4.2
VIII Do. ..	63	4.45	85	6.4	63	4.3
IX Do. ..	31	4.92	51	5.9	31	4.0
X Do. ..	18	4.65	26	6.0	18	3.8
XI Do. ..	11	4.60	20	5.4	11	3.0
XII Do. ..	6	4.77	10	5.3	6	3.1
XIII Do. ..	..	..	6	6.4	..	..
Weighted average ..	1,660	471	2,065	5.9	1,660	3.8

(ii) *Sire Index and Progeny testing—Kangayam.*—

Bull number	Increase or decrease in the yield of daughters as compared to the dams.		Sire index lb.	Remarks
	Decrease. (—)	Increase. (×)		
(1)	(2)	(3)	(4)	(5)
33	— 21·8	..	1,513·4 ± 174·9	Sire index low.
35	— 107·0	..	1,373·4 ± 134·5	Sire index low; no capacity to produce good milk yielding daughters.
47	— 205·1	..	1,309·1 ± 285·5	Bull of poor ability.
50	..	+ 75·4	1,799·2 ± 188·4	Bull is good.
90	— 130·0	..	1,430·8 ± 113·9	Bull's capacity to produce better milk yielding daughters is low.
231	— 159·8	..	1,046·8 ± 155·5	Sire index is very low; bull is of poor quality.
306	— 397·0	..	811·7 ± 174·1	Sire index is the lowest. The bull is of very poor quality.
307	— 189·0	..	1,170·8 ± 123·5	The bull is of low capacity.
554	— 224·4	..	1,048·5 ± 163·8	Sire index is low. The bull is of poor quality.
85	..	+ 201·4	1,795·6 ± 134·7	By applying the test of significance it is seen that the increase in the daughter's average milk yield over the yields of the corresponding dams is significant at 95 per cent level indicating this bull is good as far as milk qualities are concerned.
104	— 61·7	..	1,483·4 ± 119·2	Sire index is low. The bull was not able to increase the milk of the daughters.
269	— 264·6	..	1,003·0 ± 127·8	Sire index low. The bull is of poor quality.
531	..	+ 238·1	1,919·2 ± 309·9	Sire index is a little over estimated. The test of significance shows that the increase in the yield of daughters is not significant.
391	..	+ 235·4	1,685·6 ± 109·6	By applying the test of significance it is seen that the increase in the milk of daughters over the dams is highly significant. The increase can well be attributed to the bull. This is superior to all Kangayam bulls used in the farm.
506	— 245·5	..	856·2 ± 113·3	Sire index is very low.

(iii) *Average calvings of Kangayam cows.*—A study of 262 Kangayam cows which had the normal period of stay at the farm was considered, and these animals on an average gave 6·4 calvings.

(iv) *Kangayam—Correlation between different milk yield factors.*—

Serial number and factor milk yield and lactation period.	Correlation co-efficient.	Remarks.
(1)	(2)	(3)
1 Milk yield and lactation period	.. 0·98	Highly significant.
2 Milk yield and daily average milk yield.	0·83	Highly significant. The association of milk yield with lactation period is well pronounced.
3 Milk yield and calving interval	.. 0·99	Highly significant.
4 Dry period and calving interval	.. 0·92	Do.
5 Dry period and milk yield	.. 0·68	Do.
6 Dry period and lactation period	.. 0·90	Do.

(v) *Heavy milk yielders.*—Though this breed is not noted for high yields of milk there have been cows which has yielded over 5,000 lb. of milk in a single lactation.

Number of the cow.	Number of lb.
163	5,470·9
398	5,074·0
593	5,163·0
598	6,254·0

(vi) *Productive life of Kangayam cows.*—The above aspect has been worked out with reference to the formula based on (1) the age at first calving, (2) average age of calving and (3) calving interval. The average productive life of the first three generations are as given below :—

Generation.	Production life in terms of lactation.
First generation	2·7
Second generation	2·6
Third generation	2·3

119. *Hallikar.*—A statistical study of 525 animals was undertaken and the following statement gives the particulars :—

Number of generation.	Milk yield.		Lactation period.		Dry period.	
	Number of Individuals.	Weighted average in lb.	Number of Individuals.	Weighted average in days.	Number of Individuals.	Weighted average in days.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Foundation stock ..	117	1,232·2	116	250	107	156
First generation ..	275	791·9	275	242	252	217
Second generation	120	815·6	120	224	100	260

Number of generation.	Calving interval.		D.A. (lactation period).		D.A. (C.I.)		of Number animals.	Average age at first calving.
	Number of Inds.	Wt. A in days.	Number of Inds.	Wt. A in lb.	Number of Inds.	Wt. A in lb.		
	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Foundation stock ..	107	408	117	4.8	107	3.2	Not available.	
First generation ..	252	461	275	3.8	252	2.1	61	1,269 days.
Second generation ..	100	495	120	3.8	100	1.7	51	1,345 days.

120. *Gir*.—(i) A statistical study of 98 animals was undertaken and the following are the particulars tabulated:—

Number of generation.	Milk yield.		Lactation period.		Dry period.	
	Number of Inds.	Wt. A in lb.	Number of Inds.	Wt. A in days.	Number of Inds.	Wt. A in days.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Foundation stock ..	77	3,795.2	77	281	57	148
First generation ..	21	3,874.5	21	326	9	112

	Calving interval.		D.A. (lactation period).		D.A. (C.I.).	
	Number of Inds.	Wt. A in days.	Number of Inds.	Wt. A in lb.	Number of Inds.	Wt. A in lb.
	(8)	(9)	(10)	(11)	(12)	(13)
Foundation stock ..	57	430	77	12.9	57	7.6
First generation ..	9	446	21	12.2	9	8.3

Heavy yielders—

Serial number.	Cows number.	Generation.	Highest milk yield in a lactation in lb.
(1) ..	21	Foundation stock	9,832.8
(2) ..	33	Do.	6,077.8
(3) ..	23	Do.	7,399.8
(4) ..	39	First generation	6,031.0

Inds. = Individuals.
Wt. A = Weighted average.
D.A. = Daily average.
C.I. = Calving interval.

(ii) *Gir bulls—Dam daughter performance—Bull No. 1.*—Four pairs of records are available in respect of this bull. The average milk yield of the four dams mated with this bull is 3,055.9 lb. while the average milk yield of the four daughters born to this bull through the four dams comes to 3,213.5 lb. showing an increase of 157.6 lb. for the daughters.

Bull No. 2.—In respect of this bull, only three pairs with normal lactations are available. The average milk yield for the three dams comes to 3,342.0 lb. while that for the three daughters is 4,012.5 lb. showing a considerable increase amounting to 670.5 lb. for the daughters. The performance of this bull appears to be better than that of Bull No. 1.

121. *Wool yield—Sheep—Bellary sheep.*—The average wool yield per sheep was 2.54 lb. from 1924-25 to 1937-38. The minimum average yield was 1.8 lb. in 1934-35 and the maximum 3.3 lb. in 1935-36.

Bikanir Bellary cross.—The average wool yield of this breed during the three years 1952-53 to 1954-55 was 3.3 lb.

Bikanir.—For this breed, the average ranged from 2.11 lb. to 3.5 lb.

122. *Poultry Livestock Research Station, Hosur*—(i) *Production and distribution of eggs and chickens.*—The total number of chicks and eggs produced were 31,096 and 345,995 with the yearly average of 1,152 and 12,815, respectively. The sale of chicks and eggs totalled was 13,986 and 70,864 with an yearly average of 518 and 2,625, respectively.

(ii) *Egg yield.*—It is seen that the average egg yield was 143.1 during the period 1924-25 to 1954-55.

(iii) *Production and disposal of eggs.*—The number of eggs set for hatching during the period 1930-31 to 1954-55 was 135,233 representing 39.4 per cent of the total production.

(iv) *Percentage of hatchability.*—From 1929-30 to 1936-37 there is a general rise from 35.8 per cent in 1929-30 to 57.1 per cent in 1936-37. In 1937-38 there was a fall to 49.8 per cent. Again there was a progressive rise to 67.8 per cent in 1940-41, which was the maximum for the entire period. From 1940-41 to 1950-51 the percentage fell gradually from 67.8 to 25.8 and again from 1950-51 to 1954-55 it rose gradually to 42.3.

123. *District Livestock Farm, Malabar*—(i) *Strength and Breed-war changes—Murrah.*—The foundation stock consisted of 24 she-buffaloes, 2 bulls and 22 calves, totalling 48. One of the calves died and strength at the close of the year 1950-51 was 47. This strength has been increasing progressively, the total number of animals in 1954-55 being 70, made up of 40 she-buffaloes, 13 stud and young bulls and 17 calves.

Dharwar.—This breed was introduced in the farm towards the close of 1951-52. The foundation stock consisted of 6 she-buffaloes and heifers, 1 bull and 5 calves. The strength at the close of the year 1953-54 was 11 made up for 7 she-buffaloes and heifers, 1 bull and 3 calves.

Sindhi.—The foundation stock of this breed in 1951-52 consisted of 5 cows and heifers, 4 stud and young bulls and 2 calves. The strength has been progressively increasing with the number of animals at the close of the year 1953-54 being 17 made up of 7 cows and heifers, 5 stud and young bulls and 5 calves.

(ii) *Milk yield—Murrah.*—Taking the figures of average annual milk production per she-buffaloe it is seen that there was an increase from 3,934.0 lb. in 1951-52 to 4,946.6 lb. in 1952-53 and that in 1953-54 the improvement was maintained.

Dharwar.—The figures show that there was a distinct improvement in milk yield from 2,821.5 lb. in 1952-53 to 3,768.4 lb. in 1953-54.

(iii) *Lactation-wise performance of all cows in milk in each breed—Murrah she-buffaloes—First lactation.*—Out of a total of 34 she-buffaloes 27 or 80 per cent yielded over 3,000 lb. in a lactation.

Second lactation.—Out of a total of 21 animals, 15 or 67 per cent yielded over 3,000 lb. in a lactation.

Third lactation.—Out of 18 animals, 17 or 94 per cent yielded more than 3,000 lb. in a lactation.

Dharwar she-buffaloes.—The average milk yield has increased from 1,299.4 lb. in the first lactation to 2,658.3 lb. in the third lactation.

There is a progressive increase in the lactation period. In the dry period as well as calving interval also there is an increase which has to be reduced. The daily average yield over the lactation period shows a slight improvement from the first lactation to the second. The maximum yield of a cow in a lactation was 3,045.5 lb. in a lactation period of 365 days with a daily average of 8.3 lb.

The performance of this breed is 15 to 20 lb. a day.

Sindhi.—In the first lactation the maximum yield of a cow did not exceed 5,000 lb. In the second lactation, one cow yielded 6,383.8 lb. which shows good improvement.

(iv) *Bulls at stud.*—There have been only 5 bulls at stud in the farm, 2 Murrah, 2 Sindhi and 1 Dharwar. Only one of the bulls, Murrah buffalo bull No. 31 has produced 49 calves.

(v) *Bulls issued.*—Eight Murrah buffalo bulls and 4 Sindhi bulls have been issued from this farm for stud purposes.

(vi) *Production and disposal of milk.*—The figures show a steady, progressive increase in the production as well as disposal of milk from year to year.

124. *Tellicherry goats.*—(i) The foundation stock in 1950-51 consisted of nine she-goats and goatlings, nine bucks and bucklings and three kids. The strength increased to 37 in 1951-52 to 1954 in 1952-53 and 67 in 1953-54.

(ii) Milk yield and disposal of milk—

Year.	Average milk yield per goat.	Daily average yield per goat (lb.).	Total quantity of milk produced (lb.).	Sold to public in (lb.).
1951-52 ..	458.7	1.5	2,661.0	2,489.8
1952-53 ..	639.0	2.1	4,601.3	2,980.0
1953-54 ..	803.0	2.1	10,523.5	5,638.0

There is a progressive increase from year to year.

(iii) *Bucks issued.*—During the years 1951-52 to 1953-54 more farm bred bucks were issued for breeding purposes.

(iv) *Fodder production, pasture, etc.—Area under cultivation.*—In 1950-51 the area under pasture was 50 acres. It was increased to 74.0 acres in 1952-53 and 81.0 acres in 1953-54.

(a) *Fodder cultivated under irrigated condition.*—The area under cultivation was 9.25 acres in 1951-52, 5.99 acres in 1952-53 and 3.9 acres in 1953-54. The quantities of fodder produced during the years were 66,650 lb., 231,819 lb. and 193,054 lb. with an average of 11,108 lb., 44,667 lb. and 49,248 lb. respectively.

(b) *Fodder cultivated under non-irrigated condition.*—The particulars are given below :—

Year.	Area under cultivation in acres.	Total production (lb.).	Average production per acre in.
1950-51 ..	47.0	112,192	2,578.6
1951-52 ..	60.0	225,633	3,760.9
1952-53 ..	62.92	396,828	6,322.9
1953-54 ..	45.71	810,174	17,698.0

125. *District Livestock Farm, South Kanara.*—The farm started with a foundation stock of 67 Murrahs and 7 Sindhis in 1950-51. Gir, Dharwar and local breeds were introduced in 1951-52, at the close of the year the total strength of cattle was 192. The strength increased to 245 in 1952-53 and 267 in 1953-54.

Murrah.—This herd has been built up steadily from 67 in 1950-51 to 112 in 1953-54.

Sindhi.—From a foundation stock of 7 in 1950-51 this herd has been built up to a strength of 67 at the close of 1953-54.

Gir.—This breed started with a nucleus of 13 in 1951-52 and has been built up to 21.

Dharwar.—This herd started with 11 animals in 1951-52. It increased to 17 in 1952-53. During 1953-54, 7 bulls were disposed. At the close of 1953-54 the strength remained at 11.

Local cows.—A herd of 34 animals was purchased in 1951-52 and 3 were purchased in 1952-53. The strength at the close of the year 1953-54 was 56.

(a) Total milk production of all cows in each year—

Milk yield—Murrah.

Year.	Average number of animals in milk.	Total milk production in lb.	Average production per animal in lb.	Daily average production per animal in lb.
1951-52 ..	28.2	114,385	4,056.2	10.6
1952-53 ..	41.2	174,813	4,243.0	11.9
1953-54 ..	37.7	178,998	4,947.0	13.0

Dharwar.—In 1952-53 and 1953-54 the average number of animals in milk was 4.2 and 4.1, respectively. The average yield which was 2,985.0 lb. in 1952-53 increased to 3,030.2 lb. in 1953-54. Similarly there was a slight increase in the daily average yield from 7.7 lb. in 1952-53 to 8.0 lb. in 1953-54.

Sindhi—Particulars of milk production.

Year.	Average number of cows in milk.	Total milk production in lb.	Average production per cow in lb.	Daily average production per cow in lb.
1951-52 ..	7.9	31,293.5	3,961.2	10.6
1952-53 ..	14.7	60,871.0	4,140.9	11.9
1953-54 ..	7.0	34,565.0	4,937.9	12.8
Gir.				
1951-52 ..	4.6	14,700.5	3,195.8	14.6
1952-53 ..	4.0	18,902.0	4,725.5	13.3
1953-54 ..	4.3	20,047.0	4,664.1	13.1

(b) Milk yield of cows which completed lactation each year—

Year.	Number of cows or she buffaloes which completed lactation.	Total yield in lb.	Average yield per animal in lb.	Daily average yield per animal in lb.
Murrah she-buffaloes—				
1951-52 ..	35	114,103.5	3,260.0	10.9
1952-53 ..	35	105,241.0	3,007.0	10.8
1953-54 ..	47	169,353.0	3,603.0	12.6
Dharwar she-buffaloes—				
1953-53 ..	6	9,603.0	1,600.5	7.1
1953-54 ..	6	15,372.5	2,562.1	8.7
Sindhi—				
1951-52 ..	4	13,025.5	3,255.9	8.6
1952-53 ..	19	70,496.5	3,710.0	10.5
1953-54 ..	17	67,367.0	3,962.8	13.0
Gir—				
1952-53 ..	6	26,896.5	4,482.8	13.8
1953-54 ..	5	17,014.0	3,402.8	14.4
Local cows—				
1951-52 ..	1	220.0	220.0	2.5
1952-53 ..	14	5,699.5	407.1	1.9
1953-54 ..	19	11,184.5	588.7	2.4

(c) Lactationwise milk yield of all cows in milk—

Lactation number.	Number of individuals.	Average milk yield per animal in (lb.)	Average lactation period per animal in (days).	Average dry period per animal in (days).	Average calving interval per animal in days.	Daily yield per animal (lb.)	Average over calving interval (lb.)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Murrah she-buffaloes—							
1	60	2,965.8	287.8	154.5	454.4	10.4	7.3
2	55	3,858.2	308.3	113.9	421.6	12.5	9.8
3	42	3,931.7	299.8	99.5	397.4	13.1	9.9
4	11	3,960.1	288.3	..	..	13.6	..
Dharwar she-buffaloes—							
1	6	1,481.3	209.8	97.0	308.3	7.2	4.8
2	6	2,551.8	293.0	114.3	411.3	8.9	6.2
3	4	2,438.5	289.3	..	..	8.4	..
Sindhi cows—							
1	19	3,787.8	317.9	120.8	447.5	11.7	9.7
2	13	4,844.4	317.8	73.8	370.8	15.2	11.8
3	4	4,081.5	288.0	53.0	319.0	14.3	13.6

Lactation number.	Number of individuals.	Average milk yield per animal in (lb.)	Average lactation period per animal in (days).	Average dry period per animal in (days).	Average calving interval per animal in days.	Daily yield per animal (lb.)	Average over calving interval (lb.)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Gir cows—							
1	4	3,826.7	355.5	155.8	511.8	10.5	7.3
2	4	4,375.9	334.0	123.8	457.8	13.5	8.7
3	4	4,420.2	324.0	97.3	421.3	13.5	10.3
4	2	4,386.7	324.0	..	..	13.5	..
Local cows—							
1	23	416.6	222.8	201.5	421.6	1.8	1.0
2	18	631.5	251.0	102.0	347.0	2.5	1.7
3	14	502.4	238.7	97.3	344.0	2.1	1.1
4	2	231.5	138.5	..	..	2.2	..

(d) Bulls at stud.—Three Murrah buffaloe bulls, five Sindhi bulls, one Gir and one Dharwar buffaloe bull have been used in this farm for stud purposes. The three Murrah buffaloe bulls have produced 84 calves, the three Sindhi bulls (out of five) have produced 39 calves and the Gir bull has produced nine calves and the Dharwar buffaloe bull has produced seven calves.

(e) Poultry—Performance of birds—

Breed.		Average yield per hen.		
		1951-52.	1952-53.	1953-54.
Rhode Island Red	.. ..	45	106	115
White Leghorn	.. ..	48	109	109
Desi	.. ..	52	89	91
Rhode Island Red Desi	.. ..	..	137	120
Cross.				

During the years 1951-52 to 1953-54 a total number of 482 birds were issued for breeding purposes and 3,556 eggs sold for setting.

Hatchability of eggs.

Year.	Percentage of hatchability.
1951-52	22.8
1952-53	43.5
1953-54	40.2
1954-55	45.7
ACS.	

(f) Fodder production—

Total area of the farm	.. ..	760
Area under pasture	.. ..	500
Area under cultivation in 1951-52	.. ..	39
Area under cultivation in 1953-54	.. ..	22
LB.		
Total production of fodder in 1951-52	.. ..	91,960
Do. 1952-53	.. ..	196,284
Do. 1953-54	.. ..	174,983
Average annual production in 1951-52	.. ..	2,407
Do. 1952-53	.. ..	5,052
Do. 1953-54	.. ..	7,811

Silage was also made during the three years as shown below :—

Year.					Quantity of bulky fodder made into silage in lb.
1951-52	..	..	..	..	953,870
1952-53	..	..	..	..	1,292,835
1953-54	..	..	..	..	1,607,960

126. District Livestock Farm, Pudukkottai.—(a) Milk yield.—The particulars of the annual average milk production of cows in milk of the different breeds are given below :—

Breed.	1951-52.		1952-53.		1953-54.		1954-55.	
	Annual average production in lb.	Daily average yield in lb.	Annual average production in lb.	Daily average yield in lb.	Annual average production in lb.	Daily average yield in lb.	Annual average production in lb.	Daily average yield in lb.
Sindhi ..	1,948.9	5.3	3,685.1	10.0	3,910.6	10.9	4,114.5	11.3
Kangayam ..	1,341.1	3.1	2,007.6	5.5	2,352.5	6.7	2,407.4	6.6
Cross breed ..	2,445.2	6.7	4,556.9	12.5	4,527.7	12.4	4,140.3	11.3
Sahiwal ..	1,690.3	4.6	3,115.6	8.5	3,831.3	11.9	3,767.1	10.3

(b) Cultivation of fodder crops—

Area available for cultivation.		Total fodder cultivated in			Average yield per acre in		
1952-53.	1953-54 and 1954-55.	1952-53 (lb.)	1953-54 (lb.)	1954-55 (lb.)	1952-53 (lb.)	1953-54 (lb.)	1954-55 (lb.)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ACS.	ACS.						
6	6.28	210,000	340,000	405,000	35,355	54,747	64,516

127. District Livestock Farm, Orathanad.—(a) The strength at the close of the year 1954-55 was 160 as detailed below :—

Sindhi	...	...	...	...	...	31
Umblacherry	...	...	...	...	...	67
Murrah	...	...	...	...	...	49
Kangayam (work cattle)	...	...	...	...	...	12
Sahiwal (bull)	...	...	...	...	...	1
Total	...	...	...	...	...	160

(b) Milk yield.—During 1954-55 the daily average yield of all cows in milk were as follows :—

Sindhi	...	...	...	...	...	10.3
Umblacherry	...	...	...	...	...	3.8
Murrah	...	...	...	...	...	16.2

Records of completed lactations are available only for five Sindhi cows. The individual yields varied from 3,526.0 lb. to 5,402.5 lb. and the average yield for completed lactation of all the five cows was 4,266.7 lb. The daily average yield per cow varied from 10.0 lb. to 13.6 lb.

128. Sheep farm, Dunsandle, Ootacamund.—(a) Strength and year-wise changes—

	1949-50.	1950-51.	1951-52.	1952-53.	1953-54.	1954-55.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Rams ..	6	22	24	39	83	75
Ram lambs ..	..	45	36	67	61	59
Ewes ..	48	182	198	205	217	257
Ewe lambs ..	28	28	34	48	63	84
Total ..	82	277	292	359	394	475

(b) Wool yield.—The following statement gives the wool yields of rams and ewes separately for each of the years 1950-51. to 1953-54 :—

Year.	Purchased stock.			I. Generation.			II. Generation.		
	Number of animals shorn.	Total yield	Average yield lb.	Number of animals shorn.	Total yield.	Average yield.	Number of animals shorn.	Total yield.	Average yield.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		LB.	OZ.		LB.	OZ.		LB.	OZ.
Rams—									
1950-51 ..	7	12 3	1 12	17	23 0	1 6	..	..	..
1951-52 ..	6	13 1	2 3	20	35 1	1 12	..	..	..
1952-53 ..	2	4 1	2 1	75	81 6	1 1	..	..	..
1953-54 ..	2	3 9	1 13	63	85 2	1 7	..	..	..
Ewes—									
1950-51 ..	180	256 6	1 7	7	13 4	1 14	..	..	..
1951-52 ..	164	226 0	1 6	34	41 4	1 3	..	..	..
1952-53 ..	141	164 10	1 3	79	84 12	1 1	..	..	..
1953-54 ..	141	146 13	1 1	74	83 4	1 2	4 0	15 0	0 4

Rams at stud, lambs born and rams issued for breeding purposes—

Year.	Number of rams at stud.	Number of lamb born.	Number of rams issued.
(1)	(2)	(3)	(4)
1951-52	5	75	7
1952-53	5	132	1
1953-54	5	122	1
1954-55	10	153	8

(c) Fodder production—

Year.	Total area of the farm.	Area under pasture.	Area under cultivation.	Quantity of fodder purchased.
(1)	(2)	(3)	(4)	(5)
			ACS.	BL.
1950-51	600	600	No large scale production of fodder was undertaken. Only trial grasses were cultivated in small areas. All the sheep were allowed to graze throughout the year.	
1952-53	600	550	6.47	39,142
1953-54	600	550	3.83	18,693
1954-55	600	550	7.28	34,881

129. Poultry Research Station, Teynampet—(a) Strength.—The following statement shows the strength of poultry in the farm 1941-42 to 1954-55 and the year-wise changes:—

Year.	Opening balance.	Number of chicks hatched.	Number of birds received or chased.	Disposals.	Total.	Closing balance.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1941-42	90	168	30	55	40	95
1942-43	193	390	126	59	259	110
1943-44	281	548	23	101	163	388
1944-45	200	631	37	292	65	394
1945-46	437	669	63	48	331	292
1946-47	498	774	93	6	343	252
1947-48	764	1,197	90	155	758	596
1948-49	542	1,404	341	347	626	887
1949-50	527	1,707	145	192	521	1,011
1950-51	655	2,662	296	397	489	2,066
1951-52	661	1,882	7	312	844	674
1952-53	720	1,616	94	77	1,254	318
1953-54	781	1,811	79	1,227	332	1,638
1954-55	754	1,050	1,748	2,039	369	2,408

(b) Egg production.—A statement showing the year-wise particulars of laying hens, total egg yield and average yield per hen is given:—

Years.	Number of laying hens.	Total egg yield.	Average yield per hen.
(1)	(2)	(3)	(4)
1941-42	22	2,552	116.0
1942-43	88	5,794	65.8
1943-44	29	4,293	148.0
1944-45	39	6,310	161.8
1945-46	180	9,594	53.3

Year.	Number of laying hens.	Total egg yield.	Average yield per hen.
(1)	(2)	(3)	(4)
1946-47	70	6,602	94.3
1947-48	85	6,824	80.3
1948-49	47	7,430	158.1
1949-50	76	11,700	153.9
1950-51	116	14,941	128.8
1951-52	155	15,115	97.5
1952-53	123	14,672	119.2
1953-54	130	8,009	61.6
1954-55	70	4,760	68.0
Average	87.9	8,471.1	107.6
Weighted average	..	..	96.4

(c) Hatchability of eggs.—The following statement shows the details of the number of eggs set for hatching, the number of hatchings and the percentage of hatchability:—

Year.	Number of eggs set for hatching.	Number hatched.	Percentage of hatchability.
(1)	(2)	(3)	(4)
1941-42	351	168	47.9
1942-43	987	390	39.5
1943-44	1,369	548	40.0
1944-45	1,690	631	37.3
1945-46	2,160	669	31.0
1946-47	2,929	846	28.9
1947-48	3,020	1,197	39.6
1948-49	3,155	1,404	44.5
1949-50	5,605	1,707	30.5
1950-51	8,532	2,664	31.2
1951-52	5,745	1,882	32.8
1952-53	3,083	1,616	52.4
1953-54	4,778	1,611	33.7
1954-55	3,037	1,050	34.6
Average	3,317.2	1,170.2	37.4
Weighted average.	..	..	35.3

130. District Poultry Farm, Cannanore.—(a) The following statement shows the strength of poultry and changes therein from 1948-49, the year of inception to 1954-55:—

Year.	Opening balance.	Number of chicks hatched.	Number of birds received or chased.	Disposals.	Total.	Closing balance.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1948-49	12	41	..	3	3	50
1949-50	50	614	7	237	229	205
1950-51	205	477	24	96	335	275
1951-52	275	485	8	261	227	264
1952-53	264	644	2	238	73	516
1953-54	516	661	211	337	54	602
1954-55	575	634	54	363	266	638

(b) *Laying hens and egg production* —

Year.	Number of laying hens.	Total egg yield.	Average yield per hen.
(1)	(2)	(3)	(4)
1948-49	14	243	17.4
1949-50	35	2,792	79.8
1950-51	48	3,195	66.8
1951-52	49	3,494	71.3
1952-53	60	6,037	100.6
1953-54	95	11,758	123.8
1954-55	91	8,619	94.7
Average	..	..	92.2

(c) *Hatchability of eggs*.—The particulars of the number of eggs set for hatching, the number hatched and the percentage of hatchability are given in the following statement :—

Year.	Number of eggs set for hatching.	Number hatched.	Percentage of hatchability.
(1)	(2)	(3)	(4)
1948-49	160	12	7.5
1949-50	1,388	614	44.2
1950-51	1,181	477	40.4
1951-52	1,808	485	26.8
1952-53	2,345	644	27.5
1953-54	2,336	661	28.3
1954-55	2,636	634	24.1
Average	..	..	29.8

CHAPTER XIV—FINANCE.

131. The total receipts and expenditure of the department during the year are given below :—

	RS.
Receipts	6,85,705
Expenditure	41,95,154

The details of expenditure are given in Table VIII annexed to this report.

CHAPTER XV.—PROGRAMME OF WORK.

132. The progress achieved in respect of programme outlined in the Administration Report of 1954-55 for the year under report has been detailed below :—

(a) *Education*.—(i) Higher start was granted to most of the gazetted teaching staff of the Madras Veterinary College in the existing scale of pay by upgrading the posts of Lecturers as Professors.

(ii) The Surgery Section of the Madras Veterinary College was equipped on modern lines with a sanctioned amount of Rs. 34,200.

(iii) A new bus was purchased for the use of the Madras Veterinary College students.

(iv) An up-to-date X-ray plant was purchased for the Radiology Department of the College.

(v) An Open Air Theatre was constructed during the year.

(vi) A Post-Graduate Diploma Course in Veterinary Parasitology was started during the year.

(xii) The number of admissions to the B.V.Sc. Degree Course was increased from 80 to 100 during the year.

(viii) The number of admission to Stockmen Course was increased from 55 to 100 during the year.

(b) *Livestock Section*.—(i) Concentration of Scindhi herd was continued at Livestock Research Station, Hosur. Fodder crops and grasses were continued to be grown and soil conservation measures were undertaken.

(ii) Grading up local cattle was continued at District Livestock Farm, Koila, South Kanara.

(iii) Pedigree breeding of Scindhi and Murrah breeds was continued at District Livestock Farm, Thiruvazhamkundu, Malabar.

(iv) Pedigree breeding of Kangayam and Scindhi breeds at District Livestock Farm, Pudukkottai, was continued and more lands were acquired for the use of the farm.

(v) A poultry farm was started at District Livestock Farm, Orathanad, Tanjore, during the year.

(vi) The work on woolly sheep, fodder and pastures was continued at the Sheep Farm, Dansandale, Ootacamund. A herd of ten Romney Marsh rams were received from Australia for cross breeding.

(vii) Chicks from abroad were imported and supply of birds to National Extension Service areas was continued at Poultry Research Station, Teynampet. A shed was constructed for rearing chicks at Poultry Research Station, Teynampet.

(viii) More number of breeding bulls were included under various schemes.

(ix) Three artificial insemination centres were opened at Salem, Erode and Malabar.

(x) Two stallions were supplied to breeders.

(xi) Preliminary steps were taken to open a sheep farm at Chingleput.

(c) *Veterinary Aid*.—(i) Ten veterinary institutions were newly opened during the year.

(ii) Ten minor veterinary dispensaries and one touring billet were opened during the year.

(iii) Ten clinical laboratories at headquarter institutions and livestock farms were opened.

(iv) A second House Surgeon was appointed to the Madras Veterinary College.

(v) Proposals were submitted to Government for bifurcation of Tanjore, Coimbatore, Tiruchirappalli and Madurai districts.

(vi) Schemes under Second Five-Year Plan were drawn up.

133. Outlines of programmes of work proposed or expected to be undertaken during the ensuing year are given below :—

(a) *Education*.—(i) To increase the number of admissions to Stockmen Course.

(ii) To increase the admissions to the B.V.Sc. Degree Course.

(iii) To strengthen the animal nutrition and animal genetics departments in the Madras Veterinary College.

(iv) Construction of additional building to the College Hostel.

(b) *Livestock*.—(i) Improvement to the existing livestock farms with a view to have intensive cultivation of fodder crops.

(ii) Undertaking of soil conservation work in 1,500 acres at Livestock Research Station, Hosur, in next two years.

(iii) Soil conservation work to increase soil fertility and fodder production in farms situated in hilly regions (viz.) South Kanara, Malabar and Ootacamund.

(iv) Construction of buildings such as dairy stalls, stalls for animals, bore-wells, electrification of building in Orathanad farm.

(v) Establishment of new cattle farm for Kangayam breed.

(vi) Opening of one sheep farm.

(vii) Opening of four key village centres with twenty-four key villages and thirty more key villages to the existing fifteen key village centres under All-India Key Village Scheme.

(viii) Opening of five artificial insemination centres in urban areas of the State.

(ix) Organizing rural herd and milk recording units in five places.

(x) Establishment of eight supplementary extension centres for the utilization of bulls produced in key villages of the State.

(xi) Opening of poultry units in key village areas.

(xii) Establishment of five poultry units in National Extension Service block areas to form nuclei for poultry extension

(xiii) Encouragement to private poultry breeders by payment of subsidy up to Rs. 1,000 each.

(xiv) Organization of one Goshala.

(xv) Encouraging two private cattle breeders to establish one Goshala each through financial assistance.

(xvi) Organizing a district cattle show in each district and State show finally.

(xvii) Establishing a cattle colony at Erukancheri.

(xviii) Installation of a new additional plant for manufacture of toned milk at the Government Milk Factory with a view to augment the milk-supply to the city.

(c) *Veterinary aid*.—(i) Provision of one mobile unit to each of the districts for carrying out advance preventive inoculations.

(ii) Opening of new veterinary institutions.

(iii) Supply of microscopes to veterinary institutions.

(iv) Increase in the production of Rinderpest Freeze Dried vaccine.

(v) Appointment of additional Stockmen to assist touring Veterinary Assistant Surgeons in their field works.

(vi) Acquisition of land for construction of permanent buildings for veterinary institutions.

(vii) Construction of quarters for the staff in veterinary institutions.

(viii) Electrification of the veterinary institutions.

CHAPTER XVI.—FIVE-YEAR PLAN.

134. During the year under report the department completed almost all the schemes proposed under the First Five-Year Plan and drew up more schemes for implementations under the Second Five-Year Plan.

135. *First Five-Year Plan*.—Schemes were initiated for the development of Animal Husbandry during the First Five-Year Plan with a schematic provision of Rs. 56.28 lakhs. Of this an expenditure of Rs. 51.15 lakhs was incurred during the year 1951-56 on the several schemes which have been implemented successfully. The First Five-Year Plan, which commenced in 1951-52, included some of the schemes already started under the Post-War Development Schemes. The progress and achievements of the various schemes in the First Five-Year Plan are briefly narrated below :—

(1) *Appointment of Deputy Directors of Animal Husbandry*.—The activities of the Animal Husbandry department have been on the rapid increase in the recent past and to cope up with the increased work and the demands of the time it became necessary to strengthen the administrative machinery. Accordingly two Deputy Directors of Animal Husbandry were appointed in the Animal Husbandry department in 1951 to assist the Director of Animal Husbandry in Veterinary and Animal Husbandry matters. The appointment of Deputy Directors has improved the efficiency of the department. It has also facilitated the guidance of the departmental subordinate officers in the matter of execution of the details of the departmental schemes during the plan period. This scheme was completed with the appointment of two Deputy Directors one to look after the veterinary side and the other the livestock side, there being no other physical targets.

(2) *Appointment of District Veterinary Officers to each district.*—Before 1945-46, there were only nine District Veterinary Officers for the thirteen districts and Madras City comprising the present Madras State. Some District Veterinary Officers had jurisdiction over two districts, while for the Coimbatore and Nilgiris districts, there were two District Veterinary Officers one in charge of the eastern half and the other in charge of the western half and Nilgiris district. To cope up with the increased activities of this department in the districts, it became necessary to curtail the jurisdiction of the District Veterinary Officer by appointing a separate District Veterinary Officer for each district. Accordingly a District Veterinary Officer was appointed for each of the districts of Ramanathapuram, South Arcot, South Kanara and Madras City during 1945-46 while the Nilgiris district is continued under the control of the District Veterinary Officer, Coimbatore West, as before. The scheme was originally started under the Post-War Development Scheme and then brought under the First Five-Year Plan. The appointment of a District Veterinary Officer for each district has resulted in the efficient working of the development schemes in the field.

(3) *Taking over of Pudukottai Farm.*—Prior to 1951-52 there was no livestock farm in Tiruchirappalli district. After the merger of Pudukkottai State with Tiruchirappalli district of the State, the Agricultural Research Station at Pudukkottai was taken over by this department with a view to developing it as a District Livestock Farm. When the farm was taken over by this department, the stock on the farm included various breeds of cattle and a considerable number of animals did not conform to the breed characteristics of the breed under which they were classified. All the non-descript animals were culled out and disposed off and fresh stock of known pedigrees obtained. The breeds maintained now in the farm are (1) Scindhi, (2) Kangayam, (3) Murrah, (4) Sahiwal and (5) Cross-breed. The strength of the farm which was 64 in 1951-52 increased to 168 in 1955-56. Sixteen bulls were issued from the Farm to other places for stud purposes. During the five-year period, a total quantity of 295,229 lb. of milk was produced in the farm out of which 231,233 lb. were sold to the public thus solving the problem of milk supply to the town of Pudukkottai to an appreciable extent.

(4) *Training abroad.*—Five officers of this department were got trained abroad under this scheme in certain specialized subjects of Animal Husbandry with a view to increase their usefulness to the department. With the partition of Andhra State one of the trained officers went to the Andhra State and the remaining four officers were employed in the residuary State. The knowledge gained by these officers in their specialized training was usefully utilized by the department in the Madras Veterinary College, Madras, and the Institute of Veterinary Preventive Medicine, Ranipet.

(5) *Purchase of laboratory equipment and furniture to the Institute of Veterinary Preventive Medicine, Ranipet.*—Under this scheme reference books and other equipment, furniture, etc., required for the Institute of Veterinary Preventive Medicine, Ranipet, were purchased with a view to equipping the laboratory and the library of the institute for research on modern lines.

(6) *Research in diseases of sheep and goats.*—The scheme for research in diseases of sheep and goats was originally started under the Indian Council of Agricultural Research and was subsequently brought under the First Five-Year Plan. Several diseases affecting sheep and goats were taken up and investigated into and appreciable results obtained in respect of certain diseases. The scheme will continue even after the Plan period.

(7) *Opening of a touring billet for each taluk.*—The object of the scheme was to provide a touring billet for each of the taluks which had none previously. Under the scheme 22 touring billets were sanctioned and the target as originally fixed had been achieved.

(8) *Opening of a veterinary institution for each taluk.*—The scheme for the opening of a veterinary dispensary for each taluk where there was none, was implemented satisfactorily. During the period under report, 21 veterinary institutions were sanctioned and the target fixed was achieved. These veterinary institutions have been doing very good work in the treatment of non-contagious diseases.

(9) *District Livestock Farms, South Kanara and Malabar.*—A District Livestock Farm was started at Koila in the Malnad area of South Kanara district in February 1950. The objects of the farm are to maintain pure-bred stocks of cattle and poultry so that seed bulls, poultry, etc., of acclimatised strain may be distributed to other places for breeding purposes and to popularize scientific management of cattle and poultry. The farm started with a strength of 218 cattle and 347 poultry and at the end of 1955-56, there were 399 heads of cattle and 1,660 poultry. During the Plan period, 1,240,519 lb. of milk were produced in the farm. Forty-three bulls were issued from the farm for breeding purposes. One thousand eight hundred and seventy birds and 5,667 eggs were issued from the farm for breeding and hatching purposes. One thousand one hundred and two birds and 19,117 eggs were issued for table purposes.

A District Livestock Farm for Malabar was started in April 1950 with the same object as that of District Livestock Farm, South Kanara, and the scheme was brought under the First Five-Year Plan during 1951-52. The farm covers an area of about 321 acres, and is situated at the foot of the Western Ghats. The strength of the farm when started was 76, which was made up of breeding stock of Murrah, Scindi and Kangayam breeds as well as work cattle. Subsequently, a flock of Malabar goats and a few Dharwar she-buffaloes were purchased and added to the stock. The strength of the Livestock farm at the close of 1955-56 was 161 cattle and 108 goats. During the period under review, 28 cattle

and 35 goats were issued for breeding purposes. A total quantity of 492,146 lb. of milk from cattle and 40,719 lb. of milk from goats were produced in the farm and a good proportion of the milk was made available for the use of the public in the towns near the farm. All fodder requirements of the farm excepting concentrates were produced in the farm pasture lands as well as irrigated lands.

Government have sanctioned the construction of residential and non-residential quarters in the above farm and they are awaiting execution of the Public Works Department.

(10) *Clinical laboratories in the headquarters veterinary hospitals and livestock farms.*—Thirteen clinical laboratories have been opened under this scheme, 4 in livestock farms and 9 in the headquarters veterinary hospitals.

The clinical laboratories are of great help in prompt diagnosis and confirmation of diseased conditions both for chemotherapy and prophylactic treatment, and are aiding the veterinary institutions and touring billets in the concerned districts in the diagnosis, treatment and control of diseases.

(11) *Increase in the number of sheep and goat demonstration units.*—Three sheep and goat demonstration units originally started under the post-war development schemes and located at Madurai, Coimbatore and Cuddalore were continued under the First Five-Year Plan. Demonstrations on the improved methods of shearing, washing, grading of wool, etc., were conducted and propaganda regarding scientific management and breeding of sheep and goats was carried out; demonstrations on deworming and deticking were done in selected centres and by recording the weights of treated and control groups. The fact that there is gain in weight through deworming and deticking operations was brought home to the flock owners.

(12) *Distribution of male breeding stock.*—Under this scheme, 273 breeding bulls were purchased and distributed for the improvement of local stock. The scheme was implemented satisfactorily with reference to Plan provision.

(13) *Artificial insemination of cattle.*—There are seven artificial insemination centres functioning in this State under the Plan and of these some were originally started under the post-war development schemes and subsequently brought under the Plan.

The artificial insemination method is getting popular in the State and the production of improved progeny through this method would greatly increase the cattle wealth of the State.

(14) *Scheme to maintain a flock of Mandya rams.*—Under the Five-Year Plan, a scheme for the maintenance of flock of Mandya sheep was sanctioned and implemented. The object of the scheme is to supply pedigree Mandya rams to breeders in order to improve the mutton qualities of the local sheep. This scheme which is functioning at the Livestock Research Station, Hosur Cattle Farm, is working satisfactorily.

(15) *Key Village Scheme for livestock development and key farm centres in private institutions.*—The Key Village Scheme was started during 1951-52 and the key farm centres were started in 1952-53. At the end of the First Five-Year Plan period, there were nine key village centres and six key farm centres also functioning in the same way as the key village centres and there are now in all 15 artificial insemination centres under the Key Village Scheme with 60 key villages. The scheme has been progressing satisfactorily.

(16) *Scheme for the control of Brucellosis.*—The scheme for the investigation, control and eradication of Brucellosis was started in Coimbatore district towards the end of 1954-55. Though the target fixed under the scheme is the conduct of 6,000 Brucella vaccination per year, 8,216 vaccinations have already been done during 1955-56.

(17) *Starting of the Stockmen Course.*—A short course of 11 months' duration called "Stockmen Course" was started during 1954-55 with 50 admissions, with a view to make available sufficient number of personnel required for the implementation of the schemes in the Community Development programme and the Second Five-Year Plan. The admissions to the course were increased to 100 during 1955-56 and a further increase by 100 students is under consideration.

(18) *Opening of a Statistical Section in the Animal Husbandry department.*—This section was formed in the office of the Director of Animal Husbandry, Madras, in 1954-55 and this section is collecting all statistics relating to livestock and disease control for being compiled and analysed statistically for scientific work.

(19) *Salvage of dry cows in Madras City.*—A farm for the salvage of dry cows was opened at the Kambakkam Karcha in 1944-45 under the Post-war Development Scheme. Subsequently, the scheme was brought under the First Five-Year Plan. The object of the scheme is to prevent the neglect and slaughter of useful cows of the City when they go dry, as the owners, mostly milkmen find it difficult to maintain them during their dry period owing to the higher cost of maintenance. Under this scheme, such dry cows are admitted and taken to the salvage farm when they become dry and are properly cared for at the farm for a nominal fee Rs. 10 per animal per month. Good pedigree bulls are maintained in the farm for the service of the cows. The cows are maintained in the farm, till they calve or till they are taken back by the owners in advanced pregnancy. Till the end of 1955-56, the total number of cows admitted to the scheme was 2,556.

(20) *The District Poultry Farm, Cannanore.*—The District Poultry Farm, Cannanore, was started in 1948 and was brought under the First Five-Year Plan subsequently. During the period 1951-56, 37,041 eggs were collected of which 14,804 eggs were sold for hatching purposes. One thousand five hundred and fifty-three birds were issued from this farm for breeding purposes.

(21) *Poultry demonstration units in veterinary institutions.*—At the end of 1955-56, there were 19 poultry demonstration units functioning in the various veterinary institutions of the State. Eggs and birds are issued from these units both for breeding and table purposes. These units also serve as demonstration centres for educating the public on the scientific breeding, feeding and management of poultry.

(22) *Import of day-old chicks.*—During 1954-55, 950 day-old chicks were imported from United Kingdom and they are reared at the Poultry Research Station, Teynampet, for being distributed in the field after they are acclimatized to the new conditions.

Summary of expenditure on various schemes during the Plan period is furnished in the following statement:—

Statement of expenditure during First Five-Year Plan period, 1951-56.

Head of development.	Provision in the Plan.	Actuals, 1951-52.	Actuals, 1952-53.	Actuals, 1953-54.	Actuals, 1954-55.	Revised estimate 1955-56.	Total 1951-56.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
RUPEES IN LAKHS.							
1 Appointment of Deputy Directors of Animal Husbandry.	1.55	0.26	0.31	0.35	0.34	0.36	1.62
2 Appointment of District Veterinary Officers.	2.66	0.53	0.63	0.50	0.52	0.52	2.75
3 Taking over of Pudukkottai Farm.	6.10	0.23	0.43	0.63	0.70	0.79	2.88
4 Training Scheme ..	0.09	0.08	0.01	0.01	0.01	0.01	0.09
5 Purchase of laboratory equipment and furniture to the Institute of Veterinary Preventive Medicine, Banipet.	0.41	0.17	0.12	0.01	0.04	0.04	0.33
6 Research in diseases of sheep and goats.	0.56	0.06	0.06	0.11	0.11	0.12	0.46
7 Opening of touring billets ..	7.87	0.83	1.03	1.25	0.82	0.87	4.83
8 Opening of veterinary institutions for each taluk.	1.86	0.17	0.17	0.24	0.34	0.30	1.82
9 District Livestock Farms, South Kanara and Malabar.	12.22	1.97	1.97	1.54	2.54	6.45	14.47
10 Establishment of clinical laboratories in headquarters veterinary hospitals and livestock farms.	2.27	..	..	..	0.34	2.32	2.66
11 Increase in the number of sheep and goat demonstration units.	0.73	..	0.19	0.18	0.12	0.16	0.65
12 Distribution of male breeding stock.	1.97	0.65	..	..	1.80	0.03	2.53
13 Artificial insemination of cattle ..	2.87	0.26	0.39	0.48	0.61	1.14	2.83
14 Scheme for the maintenance of a flock of Mandya rams.	0.25	0.06	0.02	0.03	0.01	0.01	0.13
15 Key Village Scheme for livestock improvement.	8.82	0.29	0.44	2.01	1.79	1.76	6.29
16 Key farm centres in private institutions.	2.54	..	0.63	0.62	0.63	0.70	2.63
17 Scheme for the control of Brucellosis.	0.18	..	..	..	..	0.03	0.03
18 Starting of the Stockmen Course ..	0.47	..	..	..	0.13	0.38	0.51
19 Opening of a Statistical Section for the Animal Husbandry department.	0.24	..	..	..	0.07	0.10	0.17
20 Salvage of dry cows in Madras City.	1.70	0.55	0.42	0.31	0.73	0.46	2.47
21 District Poultry Farm, Cannanore.	0.55	0.11	0.11	0.11	0.10	0.16	0.59
22 Poultry demonstration units in veterinary institutions.	0.21	..	..	..	0.11	0.10	0.21
23 Import of day-old chicks ..	0.10	..	..	..	0.05	..	0.05
24 Grading up village poultry ..	0.06	..	..	..	..	..	..
	56.23	6.32	7.01	8.42	11.90	17.50	51.15

136. *Second Five-Year Plan.*—In view of this year being the final year of the First Five-Year Plan period, the schemes were drawn up during the year for implementation under the Second Five-Year Plan of the Nation. The schemes were drawn up taking into account all the problems relating to animals in health and disease and the experience gained in the First Five-Year Plan and also keeping in view the recommendations made by the Animal Husbandry Wing of Board of Agriculture and Animal Husbandry of India.

The provision made for the Animal Husbandry and Dairy Schemes was Rs. 383.63 lakhs as against 56.28 lakhs in the First Five-Year Plan. The schemes as suggested to Government are detailed below:—

(1) *Livestock Improvement and Development.*—(i) *All-India Key Village Scheme for cattle development.*—In addition to the existing 15 key village artificial insemination centres, 20 more such centres with 120 key villages contemplated in the plan period. The existing centres are also to be strengthened with 30 additional key villages.

(ii) *Establishment of artificial insemination centres in towns of Madras State.*—Thirteen artificial insemination centres are to be opened in the Plan period excluding the seven artificial insemination centres opened during the First Five-Year Plan Period.

(iii) *Development of feeds and fodder resources in key villages.*—To augment the fodder production in rural areas, by utilizing the land resources available it is proposed to pay a subsidy of Rs. 10 per acre of irrigated land and Rs. 5 per acre of non-irrigated land, for those who raise fodder and preserve them by approved methods. Thus an acreage of 7,460 is contemplated to be brought under cultivation.

(iv) *Organization of rural herd milk recording for rural dairy development.*—Thirteen milk recording units are to be established for recording of milk yield at intervals and conducting of progeny tests, etc., with a view to study and select the proper breeding stock for future use at village level.

(v) *Establishment of supplementary extension centres for the utilization of bulls produced in key villages of the State.*—Provision has been made for the establishment of 42 supplementary centres for grading up of local stock, at the rate of 20 bulls in each centre, with the bulls that will be available in considerable number from key village areas.

(vi) *Calf subsidy in key village area.*—In order to give an incentive to the cattle owners to rear the calves up to maturity, it is proposed to pay a subsidy of Rs. 10 per calf per mensem from the date of weaning to the date of maturity, but limited to a maximum period of 18 months. Calves of both sexes in breeding tracts and female calves only in non-breeding tracts are eligible for subsidy and thus a total number of 10,000 calves are to be subsidized.

(vii) *Development of goshalas.*—Four goshalas are proposed for development during the plan period. Only goshalas which agree to maintain productive animals will be aided by a donation of 10 cows and one pedigree bull.

(viii) *Special scheme for the development of Goshalas in the State.*—It is proposed to give assistance to 10 private cattle breeders who own 25 acres of irrigated lands and are willing to maintain 20 productive cows and set apart a suitable portion of their holding for raising fodder crops to meet in full, fodder requirements of their cattle will be registered. They are eligible for a subsidy of Rs. 5,000 towards buildings, sheds and equipment, an annual premium of Rs. 300 for the maintenance of the bull and an annual subsidy of Rs. 2,000 for maintenance of the herd. Calves born in these Goshalas will also be eligible for a subsidy of Rs. 10 per month for a period of two years.

(ix) *State and district cattle and poultry shows.*—Provision has been made for the conduct of a District Show in each of the 14 districts and one State show, every year during the plan period.

(x) *Mixed farming at Livestock Research Station, Hosur.*—Provision has been made for augmenting the irrigational facilities in the Livestock Research Station, Hosur, bringing an additional area of 325 acres under intensive cultivation.

(xi) *Soil conservation in Livestock Research Station, Hosur.*—It is proposed to introduce soil conservation measures in 1,500 acres in the Livestock Research Station, Hosur, with a view to arrest the soil erosion and thereby increase the fertility of the soil.

(xii) *Soil conservation in livestock farms situated in hilly regions.*—Soil conservation measures are proposed to be enforced in Sheep Farm, Dunsandale, Nilgiris district, District Livestock Farm, Koila, South Kanara district and District Livestock Farm, Thiruvazhamkunnu, Malabar district, which are situated in hilly tracts. Total acreage to be covered under this scheme is 1,500.

(xiii) *Improvement to buildings, roads, construction of staff, quarters and electrification in livestock farms.*

(xiv) *Improvement to District Livestock Farm, Orothanad, Tanjore district.*

(xv) *Establishment of a cattle farm.*—One farm is proposed to be opened in Ramanathapuram district for Kangayam breed.

(xvi) *Distribution of breeding bulls for stud in the rural areas of the State.*—Provision has been made for the distribution of 300 bulls at the rate of 60 per year during the plan period.

(xvii) *Opening of a sheep farm.*—It is proposed to open a sheep farm in Chingleput district.

(xviii) *Poultry improvement in key villages.*—This scheme provides for the development of poultry in key village areas by the establishment of 20 poultry improvement centres in the Plan period.

(xix) *Poultry development in National Extension Service Areas.*—As per this scheme a regional poultry farm is proposed to be started at Coimbatore with 25 extension centres in National Extension Service blocks. Imported baby chicks are to be reared up to five months of age and then distributed in development areas.

(xx) *Subsidy to private poultry breeders and associations.*—To popularize the poultry husbandry among ryots, either individually or collectively, 50 private breeders or associations will be paid a subsidy of Rs. 1,000 each as an aid to improve their poultry units.

(2) *Control of livestock diseases*—(i) *Control of cattle diseases.*—It is proposed to provide in each of the districts a mobile unit to carry out advance inoculations against diseases in endemic areas.

(ii) *Increased production of Rinderpest freeze dried vaccines at Institute of Veterinary Preventive Medicine, Ranipet.*—It is proposed to increase the production at this institute to 3,700,000 doses every year to meet the demands from other States of Southern Region.

(iii) *Opening of new veterinary institutions.*—With the aim of having one veterinary institution for each taluk, 97 veterinary institutions are proposed to be opened during the Plan period.

(iv) *Supply of microscopes to institutions.*—It is proposed to equip 50 institutions with a microscope each.

(v) *Acquisition of lands and provision of Government buildings for veterinary institutions.*

(vi) *Quarters for staff in veterinary institutions.*—It is proposed to construct 13 quarters for staff in veterinary institutions during the plan period.

(vii) *Electrification of veterinary institutions.*—Provision has been made for electrifying 30 veterinary institutions during the Plan period.

(viii) *Assistance of a Stockman to Touring Veterinary Assistant Surgeons.*—It is proposed to appoint 50 more Stockmen during the Plan period for assisting Touring Veterinary Assistant Surgeons in field work.

(3) *Education and Research*—(i) *Emergency Short Course in Veterinary Science.*—It is proposed to start the Veterinary and Livestock Inspector's Course in a livestock farm of the State with 60 admissions per year.

(ii) *Increased admission to B.V.Sc. Course.*—It is proposed to increase the admissions to B.V.Sc. Course in Madras.

Veterinary College from 100 to 120 and to construct a three-floored building for additional class room and laboratory facilities.

(iii) *Increased admissions to Stockmen Course.*—The strength of the Stockmen Course is proposed to be increased from 100 to 200.

(iv) Strengthening of Animal Nutrition and Animal Genetics departments.

(v) Creation of a chair in Therapeutics and Toxicology in Madras Veterinary College.

(vi) Creation of a chair for gynaecology in Madras Veterinary College.

(vii) Construction of additional blocks to the Madras Veterinary College.

(viii) *Establishment of a livestock research station at the Institute of Veterinary Preventive Medicine, Ranipet.*—It is proposed to appoint a Pathologist, Bacteriologist, etc., with necessary equipment at the Institute of Veterinary Preventive Medicine.

(4) *Dairying and milk supply*—(i) *Cattle Colonization Scheme*.—It is proposed to establish a cattle colony near Madras City to accommodate 4,000 animals at first instance with the scope for expanding the same to accommodate 7,000 cattle ultimately with a view to meet the demand for milk in the city.

(ii) Installation of new plant for increasing the manufacture of toned milk in Madras City.

TABLE I.—*Statistics of mortality from contagious diseases and other causes among livestock in the Madras State during the period from 1st April 1955 to 31st March 1956.*

[illegible]

TABLE II.—Summary of results of preventive inoculations in the Madras State during the year 1955-56—cont.

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 undertaken.			Number of villages affected in these outbreaks.			Population of the affected villages.			Number of animals which died uninoculated in the course of outbreaks.			Number of animals inoculated.			Number of inoculated animals which died of the disease.		
			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
3 Black-Quarter	..	Vaccine alone (in affected areas).	2,424	2,431	720,619	11,154	..	..	662,993	..	..	..	..	..	40	..	..	..	..	..
	..	Vaccine alone (in free areas).	..	..	..	..	..	..	134,030	..	..	..	..	..	..	..	..	..	..	..
	..	Spore vaccine (in affected areas).	126	144	47,462	352	..	..	12,406	..	..	..	..	..	..	..	..	..	..	..
	..	Spore vaccine (in free areas).	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4 Anthrax	..	Institute of Veterinary Preventive Medicine, Ranipet.	126	144	47,462	352	..	..	12,406	..	..	..	..	..	..	..	..	..	..	..
	..	Do.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	..	Spore vaccine (in affected areas).	126	144	47,462	352	..	..	12,406	..	..	..	..	..	..	..	..	..	..	..
	..	Spore vaccine (in free areas).	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5 Sheep-pox	..	Institute of Veterinary Preventive Medicine, Ranipet.	143	143	37,074	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	..	Do.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	..	Vaccine alone (in affected areas).	143	143	37,074	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	..	Vaccine alone (in free areas).	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total			143	143	37,074	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

6 Enterotoxaemia	..	Clostridium welchii Anaculture (affected areas).	36	36	12,124	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	..	Do.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	..	Clostridium welchii Anaculture (in free areas).	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	..	Total	36	36	12,124	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
7 Goat Pox	..	Vaccine alone (in affected areas).	3	3	400	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	..	Do.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	..	Vaccine alone (in free areas).	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	..	Total	3	3	400	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
8 Kanikhat Disease	..	Institute of Veterinary Preventive Medicine, Ranipet.	54	54	238,854	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	..	Do.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	..	Vaccine alone (in affected areas).	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	..	Vaccine alone (in free areas).	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total			54	54	238,854	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Fowl-pox	..	Pigeon-pox vaccine (in affected areas).	12	12	13,150	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	..	Do.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	..	Fowl-pox vaccine (in affected areas).	1	1	100	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	..	Pigeon-pox vaccine (in free area).	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total			13	13	13,250	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Grand total for 1955-56			3,796	3,821	1,593,858	16,458	..	..	3,027	17,06,924	..	..	..	..	273,659	41	..	..	83	..
Grand total for 1954-55			2,465	2,492	1,943,504	9,733	..	..	3,222	737,353	..	..	..	..	226,262	5	..	..	21	..

TABLE V (a).—Statement showing the number of approved breeding bulls at stud in the State of Madras during the period from 1st April 1955 to 31st March 1956.

Districts.	Present on 1st April 1955.				Obtained during the period.				Average price.				Casualties, transfers, removals, etc., during the period.			
	Number.				Number.				Average price.				Number.			
	G	LB	O	(2)	G	LB	O	(7)	G	LB	O	(10)	G	LB	O	(13)
(1)																
1 Madras ..	18	..	11	..	1	..	..	4	..	..	..	..	6	..	2	2
2 Chingleput ..	10	..	3	..	11	..	..	3	..	..	..	..	3	..	1	1
3 North Arcot ..	16	..	6	..	6	..	..	11	..	..	..	..	6	..	2	2
4 South Arcot ..	16	4	2	..	7	..	..	6	800	..	..	500	11	1	..	..
5 Tanjore ..	17	8	66	..	29	8	..	39	1,000	..	..	450	16	7	24	24
6 Tiruchirappalli ..	33	1	55	..	21	1	..	49	800	..	..	600	10	1	9	9
7 Madurai ..	41	6	62	..	13	..	..	30	..	..	..	..	5	3	14	14
8 Ramanathapuram *	18	1	13	..	6	..	..	5	..	..	..	..	1	1	2	2
9 Tirunelveli ..	15	2	11	..	16	2	..	8	..	..	1,200	..	7	..	1	1
10 Coimbatore ..	9	57	30	..	6	17	..	16	700	800	650	..	1	16	12	12
11 Nilgiris ..	13	1	10	..	5	..	..	6	700	800	650	..	8	..	2	2
12 Salem ..	13	10	46	..	5	6	..	37	..	..	..	..	1	..	9	9
13 South Kanara *	18	..	27	..	13	..	..	10	800	..	400	..	6	..	2	2
14 Malabar *	30	..	12	..	11	..	..	8	..	..	..	..	10	..	1	1
15 Erode ..	38	104	106	..	2	36	..	50	..	..	..	..	6	39	31	31
Grand total ..	311	194	440	..	152	70	..	282	..	..	..	..	97	68	112	112
1954-55 ..	232	210	383	..	183	59	..	237	..	..	..	..	85	75	156	156
1953-54 ..	269	212	363	..	18	11	..	80	..	..	..	..	33	13	60	60

	Number of approved bulls at stud.				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.
	Balance on hand on 31st March 1956.						Required to be maintained.	Short of requirements.		
	G (14)	LB (15)	O (16)	T (17)						
1 Madras ..	13	..	13.	26	RS. A. P. 18,561 8 2	6,667	66	40	..	
2 Chingleput ..	24	..	5	29	3,158 0 0	213,297	2,133	2,104	529	
3 North Arcot ..	16	..	15	31	6,451 11 11	311,474	3,115	3,084	1,320	
4 South Arcot ..	12	3	8	23	1,910 11 0	342,904	3,429	3,406	608	
5 Tanjore ..	30	9	81	120	16,399 0 0	320,000	3,200	3,080	..	
6 Tiruchirappalli ..	44	1	95	140	3,478 0 0	385,510	3,855	3,715	14,000	
7 Madurai ..	49	3	78	130	17,395 1 11	333,981	3,339	3,209	6,363	
8 Ramanathapuram.*	23	..	16	39	10,580 7 9	224,156	2,241	2,202	1,390	
9 Tirunelveli ..	24	4	18	46	4,066 0 0	148,794	1,488	1,442	2,104	
10 Coimbatore ..	14	58	34	106	18,915 0 0	40,254	402	306	..	
11 Nilgiris ..	10	1	14	25	..	11,256	112	88	8,115	
12 Salem* ..	17	16	74	107	13,409 15 1	671,792	6,718	6,608	4,506	
13 South Kanara* ..	25	..	35	60	4,947 0 0	309,832	3,098	3,036	3,342	
14 Malabar* ..	31	..	19	50	..	365,222	3,652	3,602	1,631	
15 Erode ..	34	101	125	260	31,436 4 11	275,495	2,755	2,495	12,976	
Grand total ..	366	196	630	1,192	1,51,214 12 9	3,760,614	39,603	38,417	56,787	
1954-55 ..	330	194	464	988	1,48,437 3 7	4,099,100	40,991	40,003	47,066	
1953-54 ..	254	210	383	847	64,740 6 5	4,099,100	40,991	40,144	24,641	

NOTE—G = Government. LB = Local bodies. O = Others. T = Total.

* Figures furnished now were corrected this year.

NOTE.—G = Government. LB = Local bodies. O = Others. T = Total.

* Figures furnished now were corrected this year.

TABLE V (b).—Statement showing the number of approved buffalo bulls at stud in the State of Madras during the year 1955-56.

District.	Present on 1st April 1955.						Number.			Obtained during the period.			Average price.			Casualties, transfers, removals, etc., during the year.											
	G			LB			O			G			LB			O			G			LB			O		
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)		
(1)																											
1 Madras ..	3	..	5	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
2 Chingleput ..	2	..	2	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
3 North Arcot ..	5	..	5	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
4 South Arcot ..	4	..	2	3	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
5 Tanjore ..	2	..	20	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
6 Tiruchirappalli ..	8	..	28	4	..	..	20	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
7 Madurai ..	19	..	12	6	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
8 Ramanathapuram *	3	..	3	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
9 Tirunelveli ..	4	..	11	10	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
10 Coimbatore ..	..	..	5	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
11 Nilgiris ..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
12 Salem *	2	..	7	3	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
13 South Kanara ..	4	..	9	7	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
14 Malabar ..	6	..	1	5	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
15 Erode ..	4	..	7	5	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Total ..	66	..	118	53	..	..	41	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
1954-55 ..	45	..	66	42	..	..	64	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
1953-54 ..	62	1	60	11	..	..	32	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		

	Number of approved bulls at stud.				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 year.	
	Balance on hand on 31st March 1956.						Required to be maintained.	Short of requirements.			
	G. (14)	LB. (15)	O. (16)	T. (17)							
1 Madras ..	3	..	2	5	RS. A. P.	..	..	..	..	277	
2 Chingleput ..	6	..	2	8	440 0 0	97,525	975	967	..	530	
3 North Arcot ..	6	..	3	9	..	79,778	798	789	..	327	
4 South Arcot ..	7	..	4	11	796 0 0	64,984	649	638	..	..	
5 Tanjore ..	1	..	23	24	10,000 0 0	121,800	1,218	1,194	..	5,700	
6 Tiruchirappalli ..	12	..	45	57	6,359 0 0	185,625	1,850	1,793	..	2,284	
7 Madurai ..	23	..	14	37	1,540 0 0	118,413	1,18	1,147	..	744	
8 Ramanathapuram.*	6	..	4	10	3,880 0 0	76,419	764	754	..	780	
9 Tirunelveli ..	13	..	7	20	2,613 0 0	90,318	903	883	..	..	
10 Coimbatore ..	1	..	6	7	1,100 0 0	28,315	283	278	..	416	
11 Nilgiris ..	1	..	..	1	..	10,119	101	101	..	710	
12 Salem* ..	5	..	7	12	..	116,267	1,163	1,151	..	1,212	
13 South Kanara ..	10	..	12	22	1,757 0 0	69,369	693	671	..	275	
14 Malabar ..	10	..	3	13	12,202 7 11	64,852	650	643	..	664	
15 Erode ..	6	..	5	11	..	37,399	374	363	..	..	
Total ..	110	..	137	247	40,687 7 11	1,160,683	11,605	11,372	..	13,919	
1954-55 ..	70	..	116	186	18,296 11 0	127,182	12,718	12,532	..	9,176	
1953-54 ..	45	..	66	111	28,741 9 4	127,182	12,718	12,607	..	6,800	
NOTE—G = Government.					O = Others.	T = Total.					
					LB = Local bodies.						
					* The figures now furnished are the correct figures.						

NOTE—G = Government.

LB = Local bodies.

O = Others.

T = Total.

* The figures now furnished are the correct figures.

TABLE V (c).—Statement showing the number of horses and donkeys at stud in the State of Madras during the year 1955-56.

District.	Present as on Obtained during 1st April 1955. the period.						Average price.				Casualties trans- fers, Removal, etc.				Balance on 31st March 1956.				Population.				Number of animals covered.	
	G.		LB.		O.		G.	LB.	O.	G.	LB.	O.	T.	LB.	O.	Total. Mares. Donkeys.				Mares.	Donkeys.			
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)				
1 Hosur Cattle Farm.	3	..	..	2	..	..	..	..	..	..	..	..	*3	..	..	..	7	..	52	..				
2 Coimbatore	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	135	..	24	..				
3 Erode	2	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	100	..	100	..				
Total	6	..	..	2	..	..	..	..	..	..	..	..	6	..	..	..	† 21,361	..	156	..				
1954-55	5	..	..	2	..	..	..	..	..	1	..	..	6	..	..	..	† 21,331	..	190	..				
1955-56	7	..	..	1	..	..	..	..	..	3	..	..	5	..	..	..	† 21,361	..	139	..				

NOTE—G = Government.

LB = Local bodies.

O = Others. T = Total.

† Figures furnished now are correct.

* Two stallions were loaned during the year.

TABLE VI.—Abstract of particulars regarding cattle fairs and shows held during the year 1955-56 in the State of Madras.

	1955-56.		1955-56.	
	Total number of shows and fairs		Total number of animals sold—cont.	
1 Total number of shows and fairs	172		19 Average price	..
Total number of stock present—			20 Ponies	327
2 Bulls	22,542		21 Average price	..
3 Bullocks	156,260		22 Other animals	750
4 Cows	38,388		23 Average price	..
5 Young stock	29,185			
6 Buffaloes	17,606		Prize money awarded—	RS. A. P.
7 Camels	..		24 Amount realized in fees.	10,741 0 0
8 Ponies	1,228		25 Total number of animals that competed for prizes	38,190 0 0
9 Other animals	9,861		26 From Provincial funds.	18,542 13 9
Total number of animals sold—			27 From Local funds	3,785 1 6
10 Bulls	10,181		28 From other sources	17,923 10 6
11 Average price	..		29 Total	40,251 9 9
12 Bullocks	40,336			
13 Average price	..		30 Amount actually awarded	26,980 5 9
14 Cows	4,336		31 Number of medals, prizes, etc., awarded.	2,917
15 Average price	..			
16 Buffaloes	2,395			
17 Average price	..			
18 Young stock	5,880			

TABLE VII.—*Livestock slaughtered in recognized slaughter-houses in Madras State during 1955-56.*

Particulars.	Number of recognized slaughter houses for										Number of animals slaughtered.																		
	Cattle, Sheep and goats.										Number unlicensed slaughter houses.	Bulls and buffaloes.									Calves.	Hr.-buffaloes.			She- buffaloes.	Sheep.	Goats.	Pigs.	Others.
	Cattle.		Sheep		Goats.		Pigs.	Others.	Bulls and buffaloes.	Hr.-buffaloes.		She- buffaloes.	Sheep.	Goats.	Pigs.	Others.													
	G.	O.	G.	O.	G.	O.											G.	O.	G.	O.		G.	O.	G.						O.	G.	O.
(1)											(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)									
Total for the year under report	..	41	..	110	..	4	..	..	24,631	45,028	23	10,698	9,494	1,188,076	6,32,986	1,436	415												
For last year (1954-55)	..	..	..	..	..	..	..	..	Particulars are not available.										..	..	..	..							
Year before last year (1953-54)	..	45	1	78	1	1	..	..	13,524	39,643	..	7,161	7,010	917,914	475,557	1,386	..												
Slaughter fee per head.																													
Cattle.										Sheep and goats.										Pigs.		Others.		Total number of animals slaughtered.					
(20)										(21)										(22)		(23)		(25)					
Rs. A. P.										Rs. A. P.										Rs. A. P.		Rs. A. P.		Rs. A. P.					
From annas 4 to rupees 5										From annas 4 to rupees 1-4-0.										From annas 5 to annas 6.		0 6 0		1,912,702					
Total for the year under report	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..									
For last year (1954-55)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..									
Year before last year (1953-54)	..	0	4	0	0	0	4	0	0	6	0	0	2	0	0	2	0	0	2	0									
G—Government.																													

TABLE VIII.—*Cost of Animal Husbandry Department in the State of Madras during 1955-56.*

Major head.		Expenditure for the year 1955-56.		
		State.	Local boards.	Total.
(1)		(2)	(3)	(4)
		RS.		RS.
1	Superintendence	3,95,474	..	3,95,474
2	Veterinary education and research ..	6,44,884	..	6,44,884
3	Subordinate veterinary establishments ..	5,22,626	..	5,22,626
4	Hospitals and dispensaries	6,11,616	..	6,11,616
5	Breeding operations	18,01,166	..	18,00,166
6	Other charges	2,20,388	..	2,20,388
	Total ..	41,95,154		41,95,154

TABLE IX.—*Strength of staff and how distributed in the State of Madras during 1955-56.*

Description.	Whether paid from State, Central or Local Funds.	Gazetted Officers.		Subordinate staff.	
		Scale of pay.	Number.	Scale of pay.	Number.
(1)	(2)	(3)	(4)	(5)	(6)
Head of the department ..	State ..	1,200—1,450.	1	..	..
Deputy Director of Animal Husbandry (Livestock).	Do. ..	800—1,000.	1	..	..
Deputy Director of Animal Husbandry (Veterinary).	Do. ..	Do.	1	..	..
Deputy Director of Animal Husbandry (Key villages).	Partly by State and partly by Government of India.	Do.	1	..	..
Principal, Madras Veterinary College.	State ..	Do.	1	..	..
Superintendent, Livestock Research Station, Hosur Cattle Farm.	Do. ..	200—700.	1	..	..
Professor in Physiology ..	Do. ..	420—700.	1	..	..
Professor in Anatomy ..	Do. ..	Do.	1	..	..
Professor in Surgery ..	Do. ..	Do.	1	..	..
Professor in Pathology ..	Do. ..	Do.	1	..	..
Professor in Medicine ..	Do. ..	Do.	1	..	..
Professor in Pharmacology ..	Do. ..	Do.	1	..	..
Professor in Hygiene ..	Do. ..	Do.	1	..	..
Professor in Animal Genetics.	Do. ..	Do.	1	..	..
Professor in Animal Nutrition.	Do. ..	Do.	1	..	..
Professor in Biology ..	Do. ..	Do.	1	..	..
Lecturer in Chemistry ..	Do. ..	200—700.	1	..	..
Lecturer in Animal Husbandry (Agricultural College, Coimbatore).	Do. ..	Do.	1	..	..
Research Officer, Madras, Helminthiasis Scheme, Madras Veterinary College.	Do. ..	Do.	1	..	..
Veterinary Disease Investigation Officer (Cattle), Ranipet.	Do. ..	Do.	1	..	..

TABLE IX.—*Strength of staff and how distributed in the State of Madras during 1955-56—cont.*

Description. (1)	Whether paid from State, Central or Local Funds. (2)	Gazetted Officers.		Subordinate staff.	
		Scale of pay.	Number.	Scale of pay.	Number.
		RS. (3)	(4)	RS. (5)	(6)
Vet-rinary Disease Investigation Officer (Poultry), Ranipet.	State.	260—700.	1	..	..
Veterinary Disease Investigation Officer (Sheep and Goat), Ranipet.	Do.	Do.	1	..	..
Lecturer in Flaying ..	Do.	Do.	1	..	..
Lecturer Bacteriology ..	Do.	Do.	1	..	..
Lecturer in Parasitology ..	Do.	Do.	1	..	..
Lecturer in Stockmen course.	Do.	Do.	1	..	..
Additional Lecturer for Physiology.	Do.	Do.	1	..	..
Additional Lecturer for Anatomy.	Do.	Do.	1	..	..
District Veterinary Officers ..	Do.	Do.	14	..	..
Superintendent, Livestock Research Station, other than Hosur Cattle Farm.	Do.	Do.	5	..	..
Poultry Development Officer.	Do.	Do.	1	..	..
Animal Husbandry Statistician.	Do.	Do.	1	..	..
Special Officer for Freeze Dried Vaccine, Institute of Veterinary Preventive Medicine, Ranipet.	Do.	Do.	1	..	..
Inspector of Livestock, Kozhikode.	Do.	235—325.	1	..	..
Superintendent, Kangayam Cattle Improvement Scheme, Palayakkottai.	I.C.A.R.	260—700.	1	..	..
Special Officer, Artificial Insemination, Madras.	State ..	Do.	1	..	..
Research Officer, Institute of Veterinary Preventive Medicine, Ranipet.	Do.	Do.	1	..	..
Special Officer for Cross-Breeding Scheme, Ootacamund.	I.C.A.R.	Do.	1	..	..
Regional Sterility Officer, Madras Veterinary College, Madras.	Do.	Do.	1	..	..
Sheep and Goat Development Officer.	State ..	Do.	1	..	..
Research Officer, Virus Vaccine, Institute of Veterinary Preventive Medicine, Ranipet.	I.C.A.R.	Do.	1	..	..
Special Officer for milk, Madras.	State ..	Do.	1	..	..

NOTE.—I.C.A.R. = Indian Council of Agricultural Research.

TABLE IX.—*Strength of staff and how distributed in the State of Madras during 1955-56—cont.*

Description. (1)	Whether paid from State, Central or Local Funds. (2)	Gazetted Officers.		Subordinate Staff.	
		Scale of pay.	Number.	Scale of pay.	Number.
		RS. (3)	(4)	RS. (5)	(6)
Inspector of Key Villages, Kangayam.	State ..	260—700.	1	..	..
Personal Assistant (non-technical) to Director of Animal Husbandry, Madras.	Do. ..	300—700.	1	..	..
Superintendent, Institute of Veterinary Preventive Medicine, Ranipet.	Do. ..	260—700.	1	..	..
Additional Lecturer in Animal Husbandry, Madras Veterinary College.	Do. ..	..	1	..	..
Total ..			63		
Veterinary Assistant Surgeons in Veterinary Institutions.	State ..	..	..	120—5—200—10—250.	112
Veterinary Assistant Surgeons, Touring Billets and Minor Veterinary Dispensaries.	Do. ..	..	..	..	103
Veterinary Assistant Surgeons in disease investigation.	Do. ..	..	..	..	3
Veterinary Assistant Surgeons in Institute of Veterinary Preventive Medicine, Ranipet.	Do. ..	..	..	..	13
Veterinary Assistant Surgeons in Madras Veterinary College, Madras.	Do. ..	..	..	..	38
Veterinary Assistant Surgeons in Livestock Farms.	Do. ..	..	..	..	10
Veterinary Assistant Surgeons in Key Village and Key Farm schemes.	Partly by State and partly by Government of India.	..	..	..	15
Veterinary Assistant Surgeons, Artificial Insemination centres.	Do.	..	..	..	8
Veterinary Assistant Surgeons, Sheep Development.	State ..	..	..	..	6
Veterinary Assistant Surgeons, Poultry Development.	Do.	..	..	..	2
Veterinary Assistant Surgeons, Cross-breeding Scheme, Ootacamund.	I.C.A.R. and State.	..	..	..	1
Veterinary Assistant Surgeons, Clinical Laboratories.	State ..	..	..	..	13
Veterinary Assistant Surgeons, Statistical Section.	Do. ..	..	..	..	1
Veterinary Assistant Surgeons, Office of Director of Animal Husbandry, Madras.	Do. ..	..	..	..	1
Veterinary Assistant Surgeons, Propaganda Unit.	Do. ..	..	..	..	1
Veterinary Assistant Surgeons, Glanders Inspector.	Do. ..	..	..	..	1
Veterinary Assistant Surgeons, Forest Department.	Do. ..	..	..	..	2

A.H.A.R.—15

TABLE IX.—Strength of staff and how distributed in the State of Madras during 1955-56—cont.

Description.	Whether paid from State, Central or Local Funds.	Gazetted Officers.		Subordinate Staff.	
		Scale of pay.	Number.	Scale of pay.	Number.
(1)	(2)	(3)	(4)	(5)	(6)
		RS.		RS.	
Veterinary Assistant Surgeons, Agriculture Department.	State.	..	..	..	2
Veterinary Assistant Surgeons, King Institute, Guindy.	Do.	..	..	..	1
Veterinary Assistant Surgeons, Community Projects and National Extension Service schemes.	State and Central.	..	..	..	90
Veterinary Assistant Surgeons, Quarantine Stations.	Rinderpest Control Committee.	..	..	..	5
Veterinary Assistant Surgeons, Mobile Unit.	State	..	..	..	1
Veterinary Assistant Surgeons, Leave Reserves.	Do.	..	..	..	25
Total ..					452
<i>Veterinary and Livestock Inspectors—</i>					
District work ..	State ..	..	..	60—3—120	49
Disease investigation ..	Do.	..	..	Do.	1
Livestock farms ..	Do.	..	..	Do.	9
Sheep Section ..	Do.	..	..	Do.	1
Artificial Insemination Centres.	Do.	..	..	Do.	14
Key Village and Key Farm centres.	Partly by State and partly by Government of India.	..	..	Do.	53
Cross-breeding schemes ..	I.C.A.R.	..	..	Do.	5
Quarantine stations ..	Rinderpest Control Committee.	..	..	Do.	20
Community Projects and National Extension Service.	State and Central.	..	..	Do.	73
Total ..					225
<i>Stockmen—</i>					
District work ..	State ..	..	..	60—3—105	1
Livestock farm ..	Do.	..	..	Do.	1
Artificial Insemination Centres.	Do.	..	..	Do.	3
Key Village and Key Farm centres.	State and Central (partly by Government of India and partly by State).	..	..	Do.	19
Cross-breeding Scheme ..	I.C.A.R.	..	..	Do.	1
Community Projects and National Extension Service schemes.	State and Central.	..	..	Do.	6
Total ..					31

TABLE IX.—Strength of staff and how distributed in the State of Madras during 1955-56—cont.

Description.	Whether paid from State, Central or Local Funds.	Gazetted Officers.		Subordinate Staff.	
		Scale of pay.	Number.	Scale of pay.	Number.
(1)	(2)	(3)	(4)	(5)	(6)
				RS.	
<i>Compounders and Stockmen Compounders—</i>					
District work ..	State ..	..	..	35—1—60	93
Livestock Farms ..	Do.	..	..	Do.	8
Artificial Insemination Centres.	Do.	..	..	Do.	1
Community Projects and National Extension Service Schemes.	State and Central.	..	..	Do.	4
Total ..					106
<i>Madras Ministerial Service—</i>					
Senior Superintendent ..	State ..	..	..	190—10—240.	1
Junior Superintendents ..	Do.	..	..	140—5—190 ..	6
Office Managers ..	Do.	..	..	115—5—140 ..	2
Accountant ..	Do.	..	..	80—3—95—5—110.	1
Upper Division Clerks, I Grade.	Do.	..	..	80—3—95—5—125.	19
Upper Division Clerks, II Grade.	Do.	..	..	80—3—95—5—110.	28
Lower Division Clerks ..	Do.	..	..	45—3—60—2—90.	62
Typists ..	Do.	..	..	45—3—60—2—90 + Rs. 10 special pay.	33
Steno-typists ..	Do.	..	..	45—3—60—2—90 + Rs. 10 special pay.	2
Clerk-cum-typists ..	Do.	..	..	45—3—60—2—90.	2
Store-Keepers ..	Do.	..	..	45—3—60—2—90.	7
Attenders ..	Do.	..	..	24—35	4
Total ..					167
<i>Government Milk Factory, Madras—</i>					
Manager ..	State ..	..	..	175—5—190—10—250.	1
Supervisor ..	Do.	..	..	100—5—150—10—200.	1
Assistant Supervisor ..	Do.	..	..	60—4—100 ..	1
Electrical Foreman ..	Do.	..	..	150—10—210 ..	1
Electrician ..	Do.	..	..	90—5—120 ..	1
Wireman ..	Do.	..	..	35—2—55—1—60.	1
Boilermen ..	Do.	..	..	35—2—55—1—60.	1
Assistant Boilermen ..	Do.	..	..	24—1—32—1—35.	1
Compressor ..	Do.	..	..	35—2—55—1—60.	2
Tinker ..	Do.	..	..	35—2—55—1—60.	1
Van Drivers ..	Do.	..	..	40—1—50 ..	4
Van Mechanic ..	Do.	..	..	40—1—50 ..	1
Van Cleaners ..	Do.	..	..	15—1—20 ..	1
Van Attenders ..	Do.	..	..	24—1—32—1—35.	4
Total ..					21

TABLE XI (b).—Statement showing the location and other particulars of livestock farms in the State of Madras during the year ending 31st March 1956.

Sheep.

Name and address of the farm.	Area of the farm.		Purpose of the farm and stock.	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 year.	Year before last.	Rams.	Ewes.	Lambs.	LB.	OZ.	LB.	OZ.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	LB.	OZ.	LB.	OZ.	
1 Livestock Research Station, Hosur Cattle Farm P.O. (Salem district).	1,646-41	1,187-07	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	4	8	5	..	..	..	3	3 $\frac{1}{2}$	2	2 $\frac{1}{2}$	1	4	..	..
			To distribute Mandya rams to grade up the hairy sheep of the	Bikanir	12	53	51	..	..	..	3	3	2	2	2	11 $\frac{1}{2}$	..	..
				Bikanir Bellary	..	..	..	..	..	..	..	..	..	..	..	..	..	..
				Mandya	..	..	..	..	..	..	..	..	..	..	..	..	..	..
				Nilgiris	22	66	65	..	..	..	..	13.2	..	8.3	..	10.94	..	..
					..	..	..	..	..	..	..	..	..	..	..	..	..	..

TABLE XI (c).—Statement showing the location and other particulars of livestock farms in the State of Madras during the year ending 31st March 1956.

Goats.

MADRAS ANIMAL HUSBANDRY DEPARTMENT															
Name and address of the farm.	Area of the farm.		Purpose of the farm.	Breed.	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 under report.	Last year.	Year before last.	Records averaged.	Milk yield.	Days in milk.	Days dry.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	
	ACS.	ACS.													
District Livestock Farm, Malabar.	331.28	181.42	To determine the suitability of the Malabar goats to thrive in the local climatic and environmental conditions by pure breeding.	Malabar goats.	..	..	..	11	6	3	..	..	..	..	

TABLE XI (d).—Statement showing the location and other particulars of livestock farms in the State of Madras during the year ending 31st March 1956.

Poultry.																			
Name and address of the farm.	Area of the farm.		Purpose of the farm and flock.	Breed.	Number of birds in each breed year before.			Number of cockerels issued for breeding during the period.			Number of hatching eggs sold during the period year before.			Average yield per hen egg for the year.					
	Total.	Under cultivation.			Cocks.	Hens.	Chicks.	Period report.	Last year.	Year before last	Period under report.	Last year.	Year before last						
															(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1 Livestock Research Station, Hosur.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)				
		ACS.	ACS.																
	(A) 1,616-41	1,187-07	To supply hatching eggs and breeding stock of various exotic breed to the public, poultry demonstration units, National Extension Service and Community Projects, etc., and to carry out research on poultry husbandry.	W.L.H. R.I.R. B.M.	7 9 2	16 29 5	459 710 151	7 9 2	8 8 5	18 25 7	852	2,325	4,916	128-7 149-5 90-5					
2 Poultry Research Station, Madras.		9-98	20 cents.	To do research work on poultry and to supply of birds and eggs.	W.L.H. R.I.R. B.M. L.S. Indigenous. Newhamph. shire. B.L.H.	4 5 1 2 2 ..	139 102 13 48 14 ..	2,012 926 1 30 103 10	 460	155 59 19 3	123 142 95 34 7 ..	 6,428	 1,776	104-74 109-10 81-25 85-07 81-80 ..					
3 District Livestock Farm, South Kanara.		760-0	550-0	To supply eggs, birds, etc., and to research on grading up of desi with Rhode Island Red and problems relating to high rain fall areas.	R.I.R. W.L.H. R.I.R. Desi cross.	8 6 ..	40 24 20	150 69 1	566 151 5	518 261 5	124 37 ..	1,088	88	1,390	111 103 120				

(A) This is the correct area.
W.L.H.—White Leghorn. R.R.R.—Rhode Island Red.
B.M.—Black Minorca. W.F.L.S.—Light Sussex.
B.L.H.—Brown Leghorn.

ADMINISTRATION REPORT OF THE

Particulars.	First lactation.				Second lactation.				Third lactation.				Fourth lactation.							
	NBA.	APY.	ADM.	APY.	ASP.	NBA.	APY.	ADM.	APY.	ASP.	NBA.	APY.	ADM.	APY.	ASP.	NBA.	APY.	ADM.	APY.	ASP.
(1)																				
Marrish Breed— She-buffaloes purchased and of unknown parentage.	9	3,060.1	302	12.6	120	..	..	..	..	..	9	3,875	323	16.4	149	18	4,063.3	311	..	..
Remarks.—The lactation number furnished is the number of the lactation on this farm, as there is no record of previous lactations before purchase.																				
Dharmar Breed— She-buffaloes purchased and of unknown parentage.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2,206	243	..	..
Remarks.—Fourth lactation on this farm as the record of previous lactations before purchases are not available.																				
Git Breed— Cows of unknown parentage.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	6,080	371	..	..
Local non-descript— Cows purchased and of unknown parentage.	6	495.3	257	3.1	151	..	..	..	..	..	1	712	310	3.5	252	12	597.3	271	..	..
Remarks.—The lactation number furnished is the lactation number on this farm as there is no record of previous lactations before purchase.																				
Schmidt Breed— Daughters of No. 1.	Bull 1	2,416.0	294	13.5	336	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams	Bull 1	569.5	57	..	400	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of No. 102.	Bull 1	4,209.0	326	18.0	221	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams	Bull 1	6,108.5	286	..	100	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of No. 191.	Bull 2	3,734.0	378	14.5	286	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams	Bull ..	3,973.0	362	..	501	..	..	..	..	..	1	3,935.0	296	18.5	96	1	3,107.0	216	..	..
Daughters of No. 333.	Bull ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams	Bull 1	3,435.0	313	15.0	192	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of No. 495.	Bull 1	3,319.5	352	..	190	..	..	..	..	..	..	..	..	..	..	1	4,891.0	363	..	..
Their dams	Bull ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of No. 256.	Bull ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams	Bull ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	3,735.5	305	..	..
Daughters of No. 282.	Bull ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams	Bull ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of No. 236.	Bull ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams	Bull ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
NOTES.—NBA. = Number of records averaged. APY. = Average yield of milk in lb. ADM. = Average days in milk. APY. = Average of peak yield in lb. ASP. = Average service period (days).																				

NOTE—NBA. = Number of records averaged. AYM. = Average yield of milk in lb. ADML. = Average days in milk. APY. = Average of peak yield in lb. ASP. = Average service period (days).
.. .. NOC AVAILABLE.

[illegible]

NOTE.—NBA. = Number of records averaged. AYM. = Average yield of milk in lb. ADML. = Average days in milk. APY. = Average of peak yield in lb. ASP. = Average service period (days).
.. .. Not available.

TABLE XII (b).—Performance of cows at District Livestock Farm, Malabar, Thiruvazhankannu, during 31st March 1956 classified according to sires—Nil.

Remarks—Since all the animals were purchased, they are grouped under 'cows of unknown parentage.' No cow in the farm has completed its lactation during the year 1955-56.

TABLE XII (c).—Performance of cows at the District Livestock Farm, Pudukkottai, as at the end of 1955-56 classified according to sires.

Particulars.	First lactation.					Second lactation.					Third lactation.				
	NRA.	AYM.	ADM.	APY.	ASP.	NRA.	AYM.	ADM.	APY.	ASP.	NRA.	AYM.	ADM.	APY.	ASP.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Scindhi herd—															
Daughters of Bull No. 201.	1	3,603	327	..	331	1	3,646.5	387	8.5	286	1	3,485.5	313	11.1	137
Their dams	..	..	..	..	..	..	..	Not available.	..	..	..	..	..	..	..
Daughters of Bull No. 102.	1	4,789	239	..	190	1	4,758.5	352	17.5	191	1	6,483.5	374	22	125
Their dams	..	..	..	..	..	..	..	Not available.	..	..	..	..	..	..	..
Daughters of Bull No. 255.	2	3,226	305	..	210	2	4,090	308	17.0	123	2	3,241.0	297	17	138
Their dams	..	..	..	..	..	..	..	Not available.	..	..	..	..	..	..	..
Kangayam herd—															
Daughters of Bull No. 209.	2	1,633.0	305	..	548	2	2,101.0	340	12.5	72	2	1,000	267	11.0	57
Their dams	..	..	..	..	..	..	..	Not available.	..	..	..	..	..	..	..
Daughters of Bull No. 391.	1	1,019.5	250	..	537	1	632.0	192	..	118	1	1,107.5	317	6.0	118
Their dams	..	..	..	..	..	..	..	Not available.	..	..	..	..	..	..	..
Daughters of Bull No. 534.	4	1,101.5	253	..	304	4	1,788.0	235	10.0	205	3	1,379.0	223	9.5	75
Their dams	1	1,895.5	309	..	230	1	3,017.5	351	18.0	89	1	1,841.0	233	12.0	68
Daughters of Bull No. 535.	4	2,028.0	362	..	276	4	2,688.5	322	14	120	3	2,057.0	296	11.0	126
Their dams	..	..	..	..	..	..	..	Not available.	..	..	..	..	..	..	..
Daughters of Bull No. 500.	3	1,421.0	329	..	151	3	1,606.5	305	8.5	187	1	2,005	115	4.5	162
Their dams	..	..	..	..	..	..	..	Not available.	..	..	..	..	..	..	..
Daughters of Bull No. 612.	4	1,599	270	..	144	4	1,958	239	10.5	86	3	1,578.5	277	10.0	61
Their dams	..	..	..	..	..	..	..	Not available.	..	..	..	..	..	..	..
Daughters of Bull No. 531.	2	1,936.9	194	5.0	161	1	2,454.5	255	11.0	102	1	2,677.0	278	12.0	92
Their dams	..	..	..	..	..	..	..	Not available.	..	..	..	..	..	..	..
Cows purchased or unknown parentage.	9	3,141.0	322	13.0	202	4	2,803.0	315	15.0	127	1	2,390.5	243	15.0	61

Particulars.	Fourth lactation.				Fifth lactation.				Sixth lactation.				Seventh lactation.				Eighth lactation.								
	NRA.	AYM.	ADM.	APY.	ASP.	NRA.	AYM.	ADM.	APY.	ASP.	NRA.	AYM.	ADM.	APY.	ASP.	NRA.	AYM.	ADM.	APY.	ASP.					
Scindhi herd—																									
Daughters of Bull No. 201.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..					
Their dams	..	..	..	..	..	Not available.				..	..	..	..	..	..	..	..	..	..	..					
Daughters of Bull No. 102.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..					
Their dams	..	..	..	..	..	Not available.				..	..	..	..	..	..	..	..	..	..	..					
Daughters of Bull No. 255.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..					
Their dams	..	..	..	..	..	Not available.				..	..	..	..	..	..	..	..	..	..	..					
Kangayam herd—																									
Daughters of Bull No. 269.	1	2,210.5	262	10.5	33	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..					
Their dams	..	..	..	..	..	Not available.				..	..	..	..	..	..	..	..	..	..	..					
Daughters of Bull No. 391.	1	508.5	175	5.5	76	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..					
Their dams	..	..	..	..	..	Not available.				..	..	..	..	..	..	..	..	..	..	..					
Daughters of Bull No. 534.	2	920.0	230	8.0	75	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..					
Their dams	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..					
Daughters of Bull No. 535.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..					
Their dams	..	..	..	..	..	Not available.				..	..	..	..	..	..	..	..	..	..	..					
Daughters of Bull No. 506.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..					
Their dams	..	..	..	..	..	Not available.				..	..	..	..	..	..	..	..	..	..	..					
Daughters of Bull No. 612.	2	707.0	152	7.5	77	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..					
Their dams	..	..	..	..	..	Not available.				..	..	..	..	..	..	..	..	..	..	..					
Daughters of Bull No. 531.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..					
Their dams	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..					
Cows purchased or unknown parentage.	..	..	..	..	..	..	..	..	..	..	2	5,055.0	377	22.5	142	2	4,223.0	313	17.7	172	1	5,777.5	300	20.5	78

NOTE.—NRA = Number of records averaged.
AYM = Average days in milk.
ADM = Average yield of milk in lb.
ASP = Average service period.
APY = Average of peak yield in lb.

NOTE.—NRA = Number of records averaged. AYM = Average days in milk. ADM = Average days in lb. APY = Average of peak yield in lb. ASP = Average service period.

TABLE XII (d).—Performance of cows at the District Livestock Farm, Orathanad, for the year 1955-56 classified according to sires.
Scindhi Breed.

Particulars.	First lactation.						Second lactation.						Third lactation.						Fourth lactation.					
	NRA	AYM	ADM	APY	ASP.		NRA	AYM	ADM	APY	ASP.		NRA	AYM	ADM	APY	ASP.		NRA	AYM	ADM	APY	ASP.	
(1)																								
Daughters of—																								
Bull No. 235	3	4,861.3	415	..	199	..	..	..	..	Not available.	..	..	1	3,526	306	..	96	..	..	..	..	..	..	..
Their dams ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of—																								
Bull No. 102	1	4,762.0	334	N.A.	137	1	3,333	329	..	104	..	..	..	..	..	..	..	1	5,337	332	..	..	..	148
Their dams ..	..	..	..	..	..	..	..	..	..	Not available.	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of—																								
Bull No. 282	..	..	..	..	..	1	5,402.5	417	..	197	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams ..	..	..	..	..	..	..	..	..	..	Not available.	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of—																								
Bull No. 341	2	3,538	367	N.A.	122	1	2,570	267	N.A.	33	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams ..	..	..	..	..	..	..	..	..	..	Not available.	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of—																								
Bull No. 481	2	4,413.75	399	N.A.	121	..	..	..	..	Not available.	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of—																								
Bull No. 152	..	3,361.0	349	..	64	..	..	..	..	Not available.	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of—																								
Bull No. 430	..	2,182.5	307	..	72	..	..	..	..	Not available.	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of—																								
Bull No. 503	..	2,932.5	271	..	172	..	..	..	..	Not available.	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

Note—

NRA. = Number of records averaged.

AYM. = Average yield of milk in lb.

ADM. = Average days in milk.

APY. = Average of peak yield in lb.

ASP. = Average of service period.

NA. = Not available.

TABLE XXI (e)—Performance of cows at Livestock Research Station, Hosur Cattle Farm, at the end of 1955-56 classified according to sires.

TABLE XII (e).—Performance of cows at Livestock Research Station, Hosur Cattle Farm, as at the end of 1955-56
classified according to sires.
Scindhi Breed (including Back Crossed Scindhi).

Particulars.	First Lactation.				Second Lactation.				Third Lactation.			
	N.R.A.	AYM.	ADM.	ASP.	N.R.A.	AYM.	ADM.	ASP.	N.R.M.	AYM.	ADM.	ASP.
(1)	(2)	(3)	(4)	(5)	(7)	(8)	(9)	(10)	(12)	(13)	(14)	(16)
Daughters of—												
Bull No. 38	1	4,098.5	376	N.A.	1	1,327.5	399	N.A.	1	900	N.A.	192
Their dams	1											
Daughters of—												
Bull No. 56	1	4,272	309	N.A.	1	4,734	328	N.A.	1	8,454	N.A.	201
Their dams	1	4,934	365	N.A.	1	5,382.5	350	N.A.	1	5,083	N.A.	284
Daughters of—												
Bull No. 98	1	3,042.5	297	N.A.	1	4,476.5	368	N.A.	1	5,717	N.A.	259
Their dams	1	3,645.5	371	N.A.	1	4,587	291	N.A.	1	4,293.5	N.A.	307
Daughters of—												
Bull No. 102	18	2,988	296	11.6	15	3,045	298	17.5	7	3,219	17.5	116
Their dams	18	3,702	316	(5)	15	3,850	312	N.A.	14	934	17.0	238
Daughters of—												
Bull No. 139	5	2,740	287	N.A.	5	4,691	334	N.A.	5	5,108	N.A.	284
Their dams	5	5,179	357	N.A.	2	4,834	298	N.A.	2	4,119	N.A.	193
Daughters of—												
Bull No. 144	6	3,938	311	N.A.	6	4,733	234	18 (1)	5	3,173	N.A.	158
Their dams	6	3,361	289	N.A.	5	3,718	332	N.A.	4	3,270	N.A.	277
Daughters of—												
Bull No. 160	2	4,144	339	N.A.	2	6,560	299	N.A.	2	4,807	N.A.	512
Their dams	2	5,809	367	N.A.	1	3,166	226	N.A.	1	N.A.	N.A.	97

Figures not available.

Daughters of—

Bull No. 684

Their dams

Daughters of—

'Nanda' Bull No. T.142

Their dams

Daughters of—

Bull No. T. 339

Their dams

Daughters of—

Bull No. T. 160

Their dams

Daughters of—

Bull No. 20

Their dams

N.R.A. = Number of records averaged.
AYM. = Average yield of milk.
ADM. = Average days in milk.
ASP. = Average of peak yield.
ASP. = Average service period.
N.A. = Not available.

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TABLE XII (c).—Performance of cows at Livestock Research Station, Hosur Cattle Farm, as at the end of 1955-56 classified according to sires—cont.

Scindhi Breed (including back crossed Scindhi)—cont.

	4th Lactation.				5th Lactation.				6th Lactation.			
	NRA.	AYM.	ADM.	ASP.	NRA.	AYM.	ADM.	ASP.	NRA.	AYM.	ADM.	ASP.
Daughters of—												
Bull No. 33	..	1	3,182	302	N.A.	219	1	2,466.5	262	N.A.	193	185
Their dams	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of—												
Bull No. 56	..	1	7,287.5	270	N.A.	112	1	9,003.5	304	N.A.	380	187
Their dams	..	1	3,352	278	N.A.	49	1	4,041	282	N.A.	111	118
Daughters of—												
Bull No. 98	..	1	5,269	261	N.A.	45	1	6,209.5	280	N.A.	120	123
Their dams	..	1	4,533.5	366	N.A.	206	1	4,305	274	N.A.	233	112
Daughters of—												
Bull No. 102	..	4	2,685	245	13 (3)	107	..	..	..	..	..	..
Their dams	..	14	3,891	289	16 (2)	142	12	3,939	274	18.3 (3)	214	119
Daughters of—												
Bull No. 139	..	15	3,387	250	N.A.	152	5	4,539	304	N.A.	198	156
Their dams	..	2	6,070	307	N.A.	110	2	5,544	343	N.A.	341	509
Daughters of—												
Bull No. 144	..	4	4,059	307	N.A.	406	5	6,017	336	27.5 (1)	154	107
Their dams	..	4	3,203	297	N.A.	439	4	3,004	252	N.A.	113	224
Daughters of—												
Bull No. 160	..	2	952	92	35 (1)	261	2	7,302	339	14.5 (1)	121	..
Their dams	..	1	6,739	398	N.A.	483	1	7,086	349	N.A.	202	350

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Daughters of—												
Bull No. 684	..	..	..	..	..	..	..	..	..	..	..	..
Their dams	..	1	3,824	300	N.A.	209	..	..	..	..	..	..
Daughters of—												
'Nanda' Bull No. T. 142	..	..	..	..	..	..	..	..	..	..	..	..
Their dams	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of—												
Bull No. T. 839	..	..	..	..	..	..	..	..	..	..	..	..
Their dams	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of—												
Bull No. T. 160	..	1	4,124	273	N.A.	114	1	3,324	273	23	107	126
Their dams	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of—												
Bull No. 20	..	1	3,998	288	N.A.	213	1	4,329	334	N.A.	218	123
Their dams	..	..	..	..	..	..	..	..	..	..	..	..

NRA. = Number of records averaged.
AYM. = Average yield of milk.
ADM. = Average days in milk.
APY. = Average of peak yield.
ASP. = Average service period.
N.A. = Not available.

TABLE XII (c).—Performance of cows at Livestock Research Station, Hosur Cattle Farm, as at the end of 1955-56 classified according to sires—cont.

Soindhi Breed (including back crossed Scindhi)—cont.

	7th Lactation.					8th Lactation.					9th Lactation.				
	NBA.	AYM.	ADM.	APY.	ASP.	NBA.	AYM.	ADM.	APY.	ASP.	NBA.	AYM.	ADM.	APY.	ASP.
Daughters of—	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)	(42)	(43)	(44)	(45)	(46)
Bull No. 39	1	1,711.5	N.A.	246	693	1	2,011	204	17.0	124	..	..	..	..	..
Their dams	..	..	..	..	..	Figures not available.									
Daughters of—															
Bull No. 56	1	7,771.5	N.A.	281	124	1	8,188	360	N.A.	314	1	6,210.5	260	30	68
Their dams	1	5,366	N.A.	325	182	1	4,653	326	N.A.	222	..	..	..	..	..
Daughters of—															
Bull No. 98	1	4,783	N.A.	317	120	1	6,494.5	298	38	121	1	7,058	365	123.5	..
Their dams	1	4,430	N.A.	393	..	..	..	..	..	..	..	..	..	..	..
Daughters of—															
Bull No. 102	7	3,541	N.A.	263	126	..	4,062	272	26.3	189	..	4,391	326	23.5	90
Their dams	..	..	..	..	..	..	..	..	(3)	..	6	..	..	(2)	..
Daughters of—															
Bull No. 130	5	3,705	21.7	258	94	5	4,614	304	18.5	110	..	..	..	..	..
Their dams	2	4,567	N.A.	319	217	2	5,518	342	N.A.	191	2	804	57	N.A.	78
Daughters of—															
Bull No. 144	2	4,176	18	201	160	1	2,253	265	12.5	56	..	..	..	..	..
Their dams	3	3,183	(2)	304	79	2	2,891	315	N.A.	153	1	2,666	330	N.A.	..
	(1)	(1)	(1)												
Daughters of—															
Bull No. 160	1	8,463	N.A.	352	478	1	6,905	344	N.A.	58	..	..	..	..	..
Their dams	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of—															
Bull No. 684	1	2,756	N.A.	293	230	1	3,007	281	N.A.	227	..	..	..	..	..
Their dams	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

Figures not available.

Daughters of—
Bull No. T142
Their dams
Daughters of—
Bull No. T330
Their dams
Daughters of—
Bull No. T180
Their dams
Daughters of—
Bull No. 20
Their dams

Not available.

Not available.

Not available.

NOTE.—The number under peak yield indicates the numbers of animals averaged.
NBA. = Number of records averaged.
AYM. = Average yield of milk.
ADM. = Average days in milk.
APY. = Average of peak yield.
ASP. = Average services period.
N.A. = Not available.

TABLE XII. (c).—*Performance of cows at Livestock Research Station, Hosur Cattle Farm, as at the end of 1955-56 classified according to sires—cont.*

Scindhi Breed (including back crossed Scindhi)—cont.

	10th Lactation.					11th Lactation.					12th Lactation.							
	NRA. (47)	AYM. (48)	ADM. (49)	APY. (50)	ASP. (51)	NRA. (52)	AYM. (53)	ADM. (54)	APY. (55)	ASP. (56)	NRA. (57)	AYM. (58)	ADM. (59)	APY. (60)	ASP. (61)			
Daughters of—																		
Bull No. 38 Their dams	..	..	..	..	..	..	..	Figures not available.								..	..	..
Daughters of—																		
Bull No. 56 Their dams	1	9,250.5	367	30	..	..	..	..	..	..	..	..	..	..	..			
Daughters of—																		
Bull No. 98 Their dams	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..			
Daughters of—																		
Bull No. 102 Their dams	2	3,004	322	N.A.	102	1	2,725	314	N.A.	139	1	2,360	293	N.A.	..			
Daughters of—																		
Bull No. 139 Their dams	1	3,592	342	N.A.	202	1	92	17	N.A.	..	..	..	..	..	..			
Daughters of—																		
Bull No. 144 Their dams	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..			
Daughters of—																		
Bull No. 169 Their dams	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..			
Daughters of—																		
Bull No. 684 Their dams	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..			

Figures not available.

Daughters of—

Bull No. T142

Their dams

Daughters of—

Bull No. T339

Their dams

Daughters of—

Bull No. T160

Their dams

Daughters of—

Bull No. 20

Their dams

Not available.

Not available.

NOTE.—The number under peak yield indicates the numbers of animals averaged.

NRA. = Number of records averaged.

AYM. = Average yield of milk.

ADM. = Average days in milk.

APY. = Average of peak yield.

ASP. = Average service period.

N.A. = Not available.

Not available.

TABLE XII (c).—Performance of cows at Livestock Research Station, Hosur Cattle Farm, as at the end of 1955-56
classified according to sires—cont.

Scindhi Breed.

Particulars.	First lactation.					Second lactation.					Third lactation.					Fourth lactation.					Fifth lactation.				
	NRA	AYM	ADM	APY	ASP	NRA	AYM	ADM	APY	ASP	NRA	AYM	ADM	APY	ASP	NRA	AYM	ADM	APY	ASP	NRA	AYM	ADM	APY	ASP
(1) Daughters of bull No. 399.	3	3,384	318	13	131	2	3,302	303	18	79	2	4,534	327	20-3	151	1	3,113	264	NA	44	..	..	..	..	..
Their dams.	3	4,537	347	NA	230	3	4,216	337	NA	237	3	4,001	317	NA	167	3	3,510	267	NA	167	3	3,918	845	..	..
Daughters of bull No. 420 (P).	1	2,235-5	270	12	105	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams.	1	726	113	NA	70	1	1,355	240	NA	113	1	2,551	272	NA	145	1	1,467-5	233	NA	..	..	..	..	..	..
Daughters of bull No. 421.	1	2,196	247	14	55	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams.	1	4,180	315	NA	366	1	5,235-5	504	NA	430	1	5,524-5	275	NA	95	1	4,802-5	303	NA	..	..	..	..	..	..
Daughters of bull No. 430.	1	3,586	322	16	121	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams.	1	3,452-5	290	NA	67	1	1,180	261	NA	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of bull No. 431.	3	2,830	280	14-8	123	2	1,233	112	17-5	43	1	1,642	129	17-5	126	..	..	..	..	..	..	..	..	..	..
Their dams.	3	4,323	344	NA	212	3	3,933	275	NA	139	3	3,072	272	NA	131	3	4,271	255	NA	239	3	4,641	315	..	..
Daughters of bull No. 431 (P).	2	1,939	233	10-2	72	1	464	60	12	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams.	2	1,902	207	NA	117	2	1,620	162	NA	278	1	113	29	NA	46	1	3,285	338	NA	172	..	..	..	..	..
Daughters of bull No. 433 (P).	1	4,457	377	20	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams.	1	2,422-5	363	NA	257	1	3,742	326	NA	153	1	3,095	279	NA	121	1	3,941	317	165	231	..	..	..	..	..
Daughters of bull No. 516 (P).	6	1,708	136	13-5	161	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams.	6	3,332	312	NA	365	6	3,567	274	NA	133	4	2,650	197	NA	134	4	3,443	222	22-5	290	3	4,433	310	..	..
Daughters of bull No. 516 (P).	1	2,630	266	12	82	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams.	1	4,754	385	NA	168	1	3,102	322	NA	164	1	5,311-5	395	NA	234	1	4,463	384	NA	100	1	2,645-5	286	..	..
Daughters of bull No. 534.	1	880	132	11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams.	1	2,067	323	NA	207	1	3,275-5	259	NA	116	1	2,478	231	NA	120	1	2,229-5	181	NA	145	1	3,031	251	..	..
Daughters of bull unknown.	2	3,105	321	NA	267	2	4,910	348	19-3	100	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

A.H.A.B.—17

MADRAS ANIMAL HUSBANDRY DEPARTMENT FOR 1955-56																									2.
Particulars.	First lactation.					Second lactation.					Third lactation.					Fourth lactation.					Fifth lactation.				
	NRA	AYM	ADM	APY	ASP	NRA	AYM	ADM	APY	ASP	NRA	AYM	ADM	APY	ASP	NRA	AYM	ADM	APY	ASP	NRA	AYM	ADM	APY	ASP
Daughters of bull No. 399.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of bull No. 430 (P).	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of bull No. 421.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of bull No. 430.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of bull No. 431.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of bull No. 431 (P).	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of bull No. 503 (P).	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of bull No. 561 (P).	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of bull No. 516 (P).	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of bull No. 554.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of bull unknown.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

NOTE.—NRA = Number of records averaged. AYM = Average yield of milk. ADM = Average days in milk. APY = Average of peak yield. ASP = Average service period. P = in the programme.

NA = Not available. The available records of peak yield is shown under peak yield as 18-5.

.. = 341 420, 431, 503, 510, 516 were in the breeding programme during the year 1955-56.

ADMINISTRATION REPORT OF THE

Particulars.	First lactation.					Second lactation.					Third lactation.					Fourth lactation.					
	NBA.	AYM.	ADM.	APV.	ASP.	NBA.	AYM.	ADM.	APV.	ASP.	NBA.	AYM.	ADM.	APV.	ASP.	NBA.	AYM.	ADM.	APV.	ASP.	
(1)																					
Daughters of bull No. 2220.	1	3,235.5	298	NA.	399	1	3,059	231	NA.	125	1	2,430	221	NA.	231	1	3,845	238	22.5	471	
Their dams ..	..	Not available.																			
Daughters of bull No. 236.	12	4,303	337	NA.	322	12	3,901	289	NA.	174	12	4,867	232	21 (1)	194	12	4,834	270	225 (5)	131	
Their dams ..	..	12	3,641	334	NA.	247	9	3,482	278	NA.	153	9	3,303	281	NA.	193	8	4,219	334	NA.	312
Daughters of bull No. 238.	3	5,310	323	NA.	297	3	2,221	165	NA.	133	3	5,162	202	NA.	169	3	2,831	215	NA.	185	
Their dams ..	..	3	4,074	330	NA.	209	2	3,443	303	NA.	230	2	3,459	296	NA.	165	2	3,722	302	NA.	172
Daughters of bull No. 255.	23	3,029	259	16.1 (7)	194	21	2,935	261	16.4 (5)	110	17	3,433	278	12.8 (6)	114	5	3,515	281	10.9 (10)	129	
Their dams ..	..	23	3,799	203	NA.	304	27	3,985	276	NA.	204	25	4,676	278	NA.	231	24	3,907	280	25.7 (2)	169
Daughters of bull No. 251.	2	2,923	255	NA.	237	2	2,960	278	NA.	142	2	2,798	270	NA.	159	2	3,688	298	24 (1)	392	
Their dams ..	..	2	3,962	463	NA.	466	2	5,821	368	NA.	224	2	5,692	348	NA.	246	2	8,911	217	NA.	349
Daughters of bull No. 276.	3	5,192	324	NA.	226	3	4,976	297	NA.	189	3	4,340	300	NA.	162	3	5,302	295	NA.	197	
Their dams ..	..	3	4,737	366	NA.	166	3	2,410	228	NA.	259	2	91.0	40	NA.	230	2	3,839	295	NA.	190
Daughters of bull No. 282.	13	3,668	303	NA.	243	13	2,743	251	13.8 (3)	123	11	3,852	298	21.8 (5)	111	8	2,774	248	15.1 (6)	103	
Their dams ..	..	13	4,823	349	NA.	223	11	4,169	318	NA.	202	11	3,448	303	NA.	134	11	3,134	250	NA.	244
Daughters of bull No. 338.	10	1,339	312	14.2 (2)	199	9	3,308	291	15.5 (8)	153	3	2,812	295	12.8 (2)	97	..	..	..	..	..	
Their dams ..	..	10	2,966	292	NA.	267	8	3,760	245	NA.	851	7	3,808	284	NA.	249	7	3,477	254	29 (1)	100
Daughters of bull No. 341.	3	2,239	233	14.3 (3)	124	2	272.0	51	7.5 (2)	75	..	..	..	..	..	..	..	..	..	..	
Their dams ..	..	3	4,132	317	NA.	232	3	2,954	251	NA.	224	3	3,780	320	NA.	196	2	2,651	291	NA.	357

[illegible]

Particulars.	Ninth lactation.					Tenth lactation.					Eleventh lactation.					Twelfth lactation.				
	NRA.	AYM.	ADM.	APY.	ASP.	NRA.	AYM.	ADM.	APY.	ASP.	NRA.	AYM.	ADM.	APY.	ASP.	NRA.	AYM.	ADM.	APY.	ASP.
Daughters of bull No. 230.	(42)	(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)
Their dams ..	Not available.																			
Daughters of bull No. 236.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams ..	2	2,025	213	N.A.	58	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of bull No. 238.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of bull No. 235.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams ..	7	2,643	339	25 (2)	101	5	2,840	233	30 (1)	95	1	92.0	17	N.A.	495	..	..	..	..	..
Daughters of bull No. 201.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of bull No. 270.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of bull No. 282.	3	3,832	332	N.A.	210	3	3,018	332	N.A.	116	2	2,009	329	N.A.	169	2	2,530	290	N.A.	88
Their dams ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of bull No. 333.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of bull No. 341.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

NOTE.—NRA. = Number of records averaged. AYM = Average yield of milk in lb. ADM = Average days in milk. APY = Average of peak yield in lb. ASP = Average service period. NA = Not available.

TABLE XII (e).—Performance of cows at Livestock Research Station, Hosur Cattle Farm as at the end of 1955-56 classified according to sires—cont.

[illegible]

TABLE XII (e).—Performance of cows at Livestock Research Station, Hosur Cattle-Farm, as at the end of 1955-56
classified according to sires—cont.

Particulars.	4th lactation.					5th lactation.					6th lactation.				
	NRA	AYM	ADM	APY	ASP	NRA	AYM	ADM	APY	ASP	NRA	AYM	ADM	APY	ASP
Daughters of Bull No. 47.	(17)	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of Bull No. 14.	1	121	48	NA	..	..	..	..	..	..	..	..	..	..	..
Daughters of Bull No. 1. (No. 50, 57, 59).	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams No. (3, 7, 2).	1	1,754	199	NA	86	1	2,144	278	NA	72	1	2,535.5	203	20	116
Daughters of Bull No. 2. (No. 51, 54, 55, 62, 67).	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams No. 12, 29, 6, 30, 48).	1	1,674	128	NA	132	1	3,085.5	232	25	75	1	2,200.5	204	20	86
Daughters of Bull 'unknown'.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

NOTE.—NRA—Number of records averaged.
AYM—Average yield of milk in lb.
ADM—Average days in milk.
APY—Average peak yield in lb.
ASP—Average service period.
NA—Not available.

None of the Gir cows has completed the seventh lactation. The number given under peak yield indicates the number averaged.

TABLE XII (e).—Performance of cows at Livestock Research Station, Hosur Cattle-Farm, as at the end of 1955-56
classified according to sires—cont.

Particulars.	1st lactation.					2nd lactation.					3rd lactation.					4th lactation.				
	NRA	AYM	ADM	APY	ASP	NRA	AYM	ADM	APY	ASP	NRA	AYM	ADM	APY	ASP	NRA	AYM	ADM	APY	ASP
Daughters of Bull No. 85.	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
Their dams ..	1	1,903.5	220	NA	77	1	2,444.5	293	NA	111	1	2,600	325	NA	117	1	1,838	289	NA	276
Daughters of Bull No. 90.	1	1,709.5	309	NA	79	1	1,865	293	NA	68	1	1,724	239	NA	202	1	1,812	283	11.0	78
Their dams ..	..	Not available.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of Bull No. 231.	2	1,416	273	NA	123	2	1,911	279	NA	132	2	2,899	342	NA	353	2	1,694	292	NA	327
Their dams ..	2	1,601.5	309	NA	133	1	1,877.5	265	NA	85	1	1,592	251	NA	81	1	1,258	238	NA	294
Daughters of Bull No. 269.	11	1,444	251	NA	223	11	1,700	275	7	189	11	1,789	264	7	182	10	1,641	237	9.8	155
Their dams ..	11	1,924	315	NA	221	10	2,033	300	NA	287	9	2,166	280	NA	97	8	2,393	285	NA	123
Daughters of Bull No. 306.	9	1,394	276	15.5	233	9	1,761	252	NA	231	8	1,630	266	NA	149	9	1,779	240	10.7	141
Their dams ..	9	1,756	271	NA	223	7	1,737	272	NA	179	7	1,637	294	NA	217	7	1,956	261	NA	239
Daughters of Bull No. 307.	13	1,626	261	NA	209	13	1,826	255	NA	183	13	1,693	281	NA	193	13	1,784	254	14	172
Their dams ..	13	1,709	267	NA	197	14	1,742	283	NA	182	14	1,865	288	NA	231	12	1,622	273	NA	232
Daughters of Bull No. 391.	8	1,483	269	18.7	170	6	1,612	253	10.3	102	5	1,579	271	11.5	127	4	1,666	234	13.0	85
Their dams ..	8	1,476	261	NA	153	7	1,493	252	NA	148	6	1,475	286	NA	129	6	1,689	230	9.5	213
Daughters of Bull No. 506.	14	1,121	221	7.8	160	9	1,827	244	8.7	111	2	1,446	285	7.3	97	..	..	..	..	..
Their dams ..	14	1,239	263	NA	223	12	1,492	273	NA	136	12	1,335	269	NA	177	12	1,470	267	13	209

TABLE XII (e).—Performance of cows at Livestock Research Station, Hosur Cattle Farm, as at the end of 1955-56

Kangayam Breed—cont.

	5th Lactation.				6th Lactation.				7th Lactation.				8th Lactation.			
	NRA.	AYM.	ADM.	APY.	ASP.	NRA.	AYM.	ADM.	APY.	ASP.	NRA.	AYM.	ADM.	APY.	ASP.	ASP.
Daughters of Bull No. 85.	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(41)
1	1,853	313	NA	NA	342	1	1,606	253	NA	131	1	2,077	215	NA	193	12
Their dams	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of Bull No. 90.	1	1,710.5	339	NA	231	1	2,552.5	270	NA	391	1	1,313.5	200	NA	354	87
Their dams	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of Bull No. 231.	2	2,275	256	NA	116	2	2,565	254	NA	215	1	2,487	298	NA	119	152
Their dams	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of Bull No. 269.	7	2,293	259	18	110	6	2,468	296	13.7	78	1	1,052.5	227	NA	73	99
Their dams	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of Bull No. 306.	8	1,923	255	NA	199	7	1,635	257	NA	212	7	1,493	338	NA	213	101
Their dams	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of Bull No. 307.	17	1,828	233	12.4	147	15	1,831	261	10.4	98	5	1,738	249	11.3	101	63
Their dams	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of Bull No. 391.	4	1,153	214	7.8	186	2	1,304	229	85	81	1	1,612	234	11.5	71	205
Their dams	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of Bull No. 506.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of Bull No. 506.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

ADMINISTRATION REPORT OF THE

Not available.

Not available.

MADRAS ANIMAL HUSBANDRY DEPARTMENT FOR 1955-56

TABLE XII (e).—Performance of cows at Livestock Research Station, Hosur Cattle Farm, as at the end of 1955-56

classified according to sires—cont.

Kangayam Breed—cont.

	9th Lactation.				10th Lactation.				11th Lactation.				12th Lactation.				13th Lactation.			
	NRA.	AYM.	ADM.	APY.	ASP.	NRA.	AYM.	ADM.	APY.	ASP.	NRA.	AYM.	ADM.	APY.	ASP.	NRA.	AYM.	ADM.	APY.	ASP.
Daughters of Bull No. 85.	(42)	(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)
1	3,222.5	336	NA	474	1	3,252	287	20.5	168	1	2,422.5	310	11.0	83	..	..	..	..	..	..
Their dams	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of Bull No. 90.	1	1,423.5	222	NA	296	1	1,457	254	NA	80	1	1,379.5	270	NA	116	1	998	283	NA	336
Their dams	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of Bull No. 231.	2	1,637	262	NA	125	2	3,473	232	6	76	1	2,908	271	9.5	47	..	..	..	..	..
Their dams	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of Bull No. 269.	1	2,009	246	NA	113	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of Bull No. 307.	5	1,490	262	NA	273	4	1,088	216	NA	137	3	1,139	241	NA	337	2	1,344	248	NA	365
Their dams	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of Bull No. 306.	2	1,563	271	8	94	1	948	194	NA	42	..	..	..	..	..	..	..	..	..	..
Their dams	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of Bull No. 391.	1	1,568	235	11	86	1	1,234	249	7	87	..	..	..	..	..	..	..	..	..	..
Their dams	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of Bull No. 506.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of Bull No. 506.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of Bull No. 506.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

NOTE.—NRA = Number of records averaged. AYM = Average yield of milk in lb. ADM = Average of peak yield in lb. ASP = Average service period. NA = Not available.

TABLE XII (c).—Performance of cows at Livestock Research Station, Hoor Cattle Farm, as at the end of 1955-56
classified according to sires—cont.

Kangyam Breed—cont.																									
Particulars.	First Lactation.					Second Lactation.					Third Lactation.					Fourth Lactation.									
	NRA.	AYM.	ADM.	APY.	ASP.	NRA.	AYM.	ADM.	APY.	ASP.	NRA.	AYM.	ADM.	APY.	ASP.	NRA.	AYM.	ADM.	APY.	ASP.					
(1)																									
Daughters of Bull No. 531.	9	1,505	242	(4)	(5)	7-1	126	(6)	NA	251	9	1,430	259	NA	230	8	1,705	272	NA	359	7	1,273	210	NA	122
Their dams ..	9	1,195	231	NA	(6)	NA	251	(6)	NA	230	8	1,705	272	NA	359	7	1,273	210	NA	122					
Daughters of Bull No. 554.	21	898	198	6-5	158	6-5	158	6-5	158	21	1,178	230	8-3	143	4	766	166	7-5	103	3	539	137	3-2	69	
Their dams ..	21	1,243	260	(14)	NA	267	19	1,281.	267	NA	203	17	1,523	252	NA	128	17	1,291	248	(2)	8-7	(3)	8	107	
Daughters of Bull No. 555.	8	851	185	NA	213	8	1,097	243	8	115	7	711	160	17-8	162	4	1,121	195	(3)	8					
Their dams ..	8	1,547	272	NA	314	8	1,872	289	NA	213	8	1,749	280	NA	233	7	1,536	242	(3)	NA					
Daughters of Bull No. 586.	1	1,330-5	308	7-5	140	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Their dams ..	1	2,238-5	262	NA	273	1	3,654	347	NA	236	1	4,103	313	NA	116	1	2,858	282	NA	144					
Daughters of Bull No. 612.	8	1,518	252	7-8	107	4	1,334	207	8	110	1	2,222	234	12	59	..	..	..	..	..	..	..	..	..	
Their dams ..	8	1,468	254	NA	194	8	1,601	256	NA	120	7	1,542	206	NA	204	7	1,756	234	5-5	109					
Daughters of Bull No. 870.	1	737-5	123	7	123	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Their dams ..	1	839	251	NA	227	1	1,082-5	214	NA	345	..	..	..	..	..	..	..	..	..	..	..	..	..	..	

ADMINISTRATION REPORT OF THE

[illegible]

TABLE XII (c).—Performance of cows at Livestock Research Station, Hosur Cattle Farm, as at the end of 1955-56 classified according to sires—cont.

Kangayam Breed—cont.

Particulars.	Ninth Lactation.				Tenth Lactation.				Eleventh Lactation.				Twelfth Lactation.				Thirteenth Lactation.			
	NRA	AYM	ADM	APV	ASP	NRA	AYM	ADM	APV	ASP	NRA	AYM	ADM	APV	ASP	NRA	AYM	ADM	APV	ASP
Daughters of Bull No. 531.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams ..	1	1,787.5	239	NA	67	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of Bull No. 554.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams ..	3	1,497	255	13	112	2	1,522	255	NA	125	2	1,972	236	NA	234	1	1,590	238	NA	..
Daughters of Bull No. 555.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams ..	1	1,152	204	NA	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of Bull No. 556.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Daughters of Bull No. 612.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams ..	3	1,672	230	NA	205	3	1,978	304	NA	130	3	1,633	303	NA	212	3	1,514	269	NA	190
Daughters of Bull No. 870.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Their dams ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

NOTE.—NRA = Number of records averaged.
 AYM = Average yield of milk in lb.
 ADM = Average days in milk.
 APV = Average of peak yield in lb.
 ASP = Average service period.
 NA = Not available.

The number under peak yield denotes the number averaged.

ADMINISTRATION REPORT OF THE

TABLE XIII (a).—Statement showing the receipts and disposals of birds in poultry development units for the year 1955-56.

Name of veterinary institution.	Breed.	Stock on 1st April 1955.	Received by hatch.	Received from outside.	Sold for breeding.	Sold for table.	Transfers.	Deaths and destructive.	Stock on 31st March 1956.	Receipts.	Expenditure.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1 Veterinary Hospital, Ouddalore.	W.L.H.	14	55	..	5	..	7	19	38	RS. A. P. 154 0 3	RS. A. P. 185 13 3
2 Kallakurichi ..	B.M.	18	87	..	28	..	21	33	23	329 2 6	251 4 9
3 Poultry Demonstration Unit, Ranipet.	W.L.H.	42	14	..	14	..	..	25	17	217 2 0	345 4 0
4 Veterinary Hospital, Kancheepuram.	R.I.R. Desi.	8 21	24	11 5	5	..	11	10 1	17 5	104 10 3	162 11 0
5 Veterinary Dispensary, Kaliyam-purdi.	R.I.R. Desi.	19 3	53	6 1	30	..	6	14	28 4	129 10 0	154 14 0
6 Veterinary Hospital, Pollachi.	R.I.R. Desi.	53 3	73	..	54	..	1	29	42 3	407 8 0	418 3 0
7 Veterinary Hospital, Ootacamund.†	W.L.H.	35 1	26	7	38 1	..	4	26	..	284 12 0	364 12 3
8 Veterinary Hospital, Coonoor.†	B.M.	27 5	7	4	25 5	..	4	9	..	259 12 0	288 13 0
9 Veterinary Hospital, Tanjore.	B.M. Desi.	55 6	114	..	89	..	21	14	45 6	873 5 0	436 4 6
10 Veterinary Hospital, Nagespattinam.	R.I.R. Desi.	42 4	10	..	4	..	10	24 2	14 2	74 8 0	173 3 8

MADRAS ANIMAL HUSBANDRY DEPARTMENT FOR 1955-56

TABLE XIII (a).—Statement showing the receipts and disposals of birds in poultry development units for the year 1955-56

Name of veterinary institution.	Breed.	Stock on 1st April 1955.	Received by hatch.	Received from outside.	Sold for breeding.	Sold for table.	Transfers.	Deaths and destructions.	Stock on 31st March 1956.	Expenditure.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
11 Veterinary Hospital, Devakottai.	R.I.R. Desi.	19	14+7=21	..	8	0	14	8	10	109 10 0
12 Veterinary Hospital, Erode.	W.L.H. ..	184	665	6	504	..	187	66	38	135 0 5
13 Veterinary Hospital, Dharapuram.	W.L.H. ..	111	375	15	309	..	17	64	1-1	3,242 1 0
14 Veterinary Hospital, Tiruppur.	R.I.R. ..	80	178	27	214	..	17	12	42	6,572 1 9
15 Veterinary Hospital, Tallakulam.	W.L.H. ..	56	79	3	35	..	22	30	51	428 14 0
16 Veterinary Hospital, Kodaikanal.	R.I.R. ..	7	50	..	18	..	3	9	27	167 6 3
17 Veterinary Hospital, Periakulam.	B.M. ..	56	180	2	97	..	30	26	85	733 12 2
18 Veterinary Hospital, Tirunelveli.	R.I.R. Desi.	31-2	86	..	8	26	13	12	58-2	352 6 3
19 Veterinary Hospital, Pudukkottai.*	..	..	..	11	..	..	..	2	9	50 14 0
20 Veterinary Hospital, Mangalore.	R.I.R. Desi.	41	22	9	9	..	9	13	41	395 12 0
21 Veterinary Hospital, Kozhikode.	R.I.R. Desi.	32	17	2	12	5	..	17	17	336 15 0
Total ..		930	2,136	103	1,566	31	397	462	713	9,042 2 0
		34		6	7	2		5	26	12,351 5 2

NOTE.—W.L.H. = White Leghorn.

R.I.R. = Rhode Island Red.

B.M. = Black Minorca.

* This unit (No. 19 above) was opened on 25th November 1955.

† These units (Nos. 7 and 8) were closed during the year.

TABLE XIII (b).—Statement showing the receipts and disposals of eggs in the poultry units in veterinary institutions for the year 1955-56.

Serial number and name of the unit.	Breed of poultry.	Balance of eggs on hand on 1st April 1955.	Received from outside.	Collected.	Sold for hatching.	Sold for table.	Set for hatching.	Broken and fed to chicks.	Transferred.	Balance of eggs on hand on 31st March 1956.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1 Veterinary Hospital, Kanchapuram.	R.I.R. Desi.	9	..	501	107	158	214	12	..	19
2 Kallampancudi	R.I.R. Desi.	..	..	194	352	167	196	27	..	..
3 Poultry Demonstration unit, Ranipet.	W.L.H. ..	11	..	660	307	108	59	4	..	..
4 Veterinary Hospital, Cuddalore.	W.L.H. ..	..	..	37	499	327	79	12	408	..
5 Kallakurichi	B.M. ..	31	..	1,102	466	..	107	79	..	11
6 Pollachi	R.I.R. Desi.	17	..	668	786	623	178	68	..	27
7 Cocacott	B.M. ..	26	..	1,260	545	0	178	78	160	12
8 Octaramund†	W.I.H. ..	19	..	1,203	386	40	9	22	..	..
9 Tanjore	B.M. ..	12	..	689	1,832	139	67	..	12	..
10 Nagapattinam	R.I.R. ..	9	..	612	213	166	142	24	..	4
11 Devakottai	R.I.R. ..	5	..	2,470	206	99	..	16	..	..
12 Erode	W.L.H. ..	49	833	319	1,365	26	12	2	..	14
13 Dharapuram	W.L.H. ..	121	..	255	997	1,234	1,297	404	..	24
14 Tiruppur	R.I.R. ..	91	..	4,076	486	1,147	1,061	565	369	58
15 Tallakulam	W.L.H. ..	14	..	2,677	2,039	200	761	145	..	13
16 Kodaikanal	R.I.R. ..	6	..	2,653	147	1	129	277	..	22
17 Periakulam	B.M. ..	13	..	236	1,798	633	80	9	..	5
18 Tirunelveli	R.I.R. Desi.	5	..	2,747	1,681	5	289	40	..	..
19 Pudukkottai	..	..	..	1,940	..	8	159	93	..	7
		..	..	151	82	222	18	33	..	15

ADMINISTRATION REPORT OF THE
MADRAS ANIMAL HUSBANDRY DEPARTMENT FOR 1955-

TABLE XIII (b)—Statement showing the receipt and disposals of eggs in the poultry units in veterinary institutions for the year 1955-56

Serial number and names of the unit.	Breed of poultry.	Balance of eggs on hand on 1st April 1955.	Number of eggs.					Set for hatching, fed to chicks.	Transferred.	Balance of eggs on hand on 31st March 1956.
			Received from outside.	Collected	Sold for hatching.	Sold for table.	Broken and			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
20 Mangalore ..	R.I.R. ..	86	..	1,923	1,184	721	38	25	..	41
	Deu. ..	..	..	72	..	72	..	..	..	..
21 Kozhikode ..	R.I.R. ..	..	..	1,192	1,029	0	43	119	..	1
	Deu. ..	..	..	14	..	14	..	..	..	..
	Total ..	524	833	30,895	16,507	7,852	4,938	2,027	955	273
		10		508	..	338		174		6

NOTE.—R.I.R. = Rhode Island Red.

W.L.H. = White Leghorn.

B.M. = Black Minorca.

* The Poultry Unit was started on 25th November 1955.

† This units (Nos. 7 and 8) above were closed during the year.

MADRAS,
1st August 1956.

V. R. RAJAGOPALAN,
Director of Animal Husbandry.

MISCELLANEOUS



FOOD AND AGRICULTURE DEPARTMENT

G.O. No. 2847, 4th December 1956

Administration Report—1955-56—Animal Husbandry Department—
Recorded with remarks.

READ—the following paper :—

Letter from the Director of Animal Husbandry, dated 1st August 1956,
Rec. No. 15478-H/56.

Order—No. 2847, Food and Agriculture, dated 4th December 1956.

The report on the working of the Animal Husbandry Department for 1955-56 submitted by the Director of Animal Husbandry with his letter cited, is recorded with the following remarks.

2. Administration.—(a) The strength of the gazetted posts in the Madras Animal Husbandry Department on 31st March 1956 was 63 as against 56 at the commencement of the year and the strength of Veterinary Assistant Surgeons at the end of the year was 452 as against 374 at the commencement of the year. Six gazetted posts were created, of which one was not filled up during the year.

(b) During the year under report, one officer, Dr. P. Satyendra Rao, was deputed to New Zealand for specialized training in Dairy Cattle Improvement, Sri M. C. Chellam, who was deputed to Sweden for training in Animal Gynaecology and Obstetrics, returned during the year.

3. *Veterinary Education.*—The number of admissions to the B.V.Sc. Course was increased from 80 to 100 during the year and that for the Stockmen Course from 55 to 100. One open-air theatre constructed in the Veterinary College premises under the Youth Welfare Programme of the Government of India was declared open during the year. A batch of 80 students of the Madras Veterinary College, Medical Association, volunteered to render Veterinary relief in the cyclone-affected districts of Tamilnad.

4. *Institute of Veterinary Preventive Medicine.*—It is gratifying to note that the Institute proved itself capable of coping with the unprecedented demand for biological products for use in the cyclone-affected areas to protect the cattle population.

5. *Livestock farms.*—It is observed that the percentage of mortality was low in all the farms. The mortality figure in South Kanara however continued to be high and the reasons for this should be investigated. The production in milk in all the farms was also satisfactory compared with the expenditure incurred on the maintenance of cattle in the different farms, the receipts continue to be very low. The Director of Animal Husbandry should see that the receipts are improved and the expenditure reduced by careful economy and preventing avoidable wastage and leakages.

6. *Poultry.*—It is disappointing to note that there was high mortality of birds in the Poultry Research Station, Teynampet, which is attributed to the Avian Leucosis complex and 'Hatched weak' chicks. The mortality of the birds at the District Poultry Farm, Cannanore, was also very high which is said to be due to unfavourable climatic conditions. The Director of Animal Husbandry has not indicated whether any research has been done at the Livestock Research Station, Hosur, as pointed out in the previous review and whether any breeding and distribution programme has been drawn up from each station.

7. *Veterinary Hospital and dispensaries.*—Seven new touring bills were opened during the year under review. With the increased number of admission to the B.V.Sc. course in the Madras Veterinary College, it is hoped the paucity of trained personnel will be overcome in the near future, and it will be possible to provide better facilities for veterinary aid in rural areas.

8. *National Extension Service and Community Projects.*—The Animal Husbandry extension officers in the selected block carried out substantial work both in respect of breeding and veterinary activities and in the prevention of disease. As pointed out in the previous years review, the development of dairying in the rural development units should be encouraged.

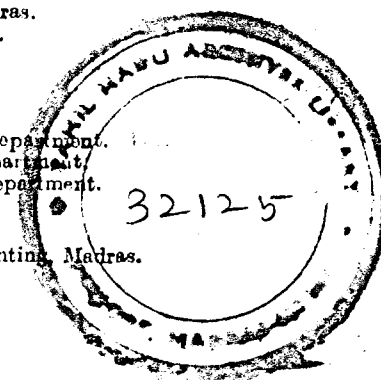
9. *General.*—The record of work during the year under review was on the whole satisfactory. There is much scope for reducing the mortality of cattle and poultry in livestock and poultry farms and increasing the milk and egg yields by greater care and better management. As pointed out in the previous report, greater attention should be paid to extension work for the benefit of small cattle owners. Sheep breeding should be encouraged in favourable tracts, greater importance should be attached to milch production round about urban areas particularly by introducing cross breed animals and heavy fields and encouraging the growing of suitable grasses.

(By order of the Governor of Madras.)

P. P. I. VAIDYANATHAN,
Secretary to Government.

To the Director of Animal Husbandry, Madras.
 „ Secretary, Ministry of Food and Agriculture, Government of India, New Delhi.
 „ Secretary, Industries, Co-operation and Labour Department of Andhra State.
 „ Secretary, Indian Council of Agricultural Research.
 „ Director of Agriculture, Madras.
 „ Commissioner of Food Production, Madras.
 „ Director of Community Project, Madras.
 „ Director of Rural Welfare.
 „ Registrar of Co-operative Societies
 „ Board of Revenue.
 „ Director of Information and Publicity.
 „ Public (Rural Development Projects) Department.
 „ Public (Information and Publicity) Department.
 „ Industries, Labour and Co-operation Department.
 „ Chief Secretary, Kerala State.
 „ Chief Secretary, Mysore State.

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