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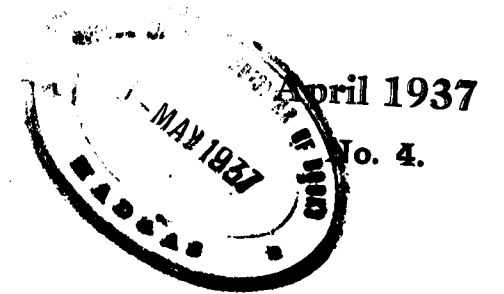
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(The Journal of The All-India Veterinary Association.)

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Editor :

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NOTICE

The Indian Veterinary Journal

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devoted to the cause of the Veterinary Profession.

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EDITOR:

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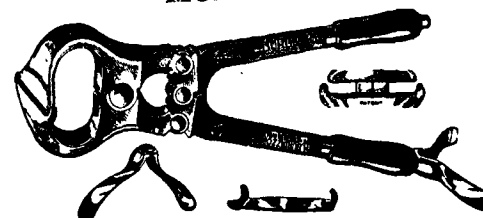
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APRIL, 1937

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THE INDIAN VETERINARY JOURNAL.

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Editorials.

VETERINARY EDUCATION IN INDIA.

(II)

"A sum exceeding two thousand crores of Rupees—this is the estimated annual cash value of India's animal products. The figure may indeed appear to be incredibly high; in fact it is probably larger than the value of her cash crops. But India possesses a far larger number of animals than any other country in the world" says a press note issued by the Director of Public Information, Simla.

He further says "The total is over 300,000,000 or nearly double that in the United States of America. These are some of the facts which make it abundantly clear that the development of animal husbandry work in India might go a long way in solving the economic difficulties of the country and how correct the Viceroy was when he said, presenting three pedigree bulls for use in the Delhi District, "The cow and the bullock have on their back the whole structure of main agriculture". These are extracts from the official records. Thus while India stands highest in the matter of world's

cattle population her sheep population is nearly double that in the United Kingdom.

When the United Kingdom, U.S.A., and other countries have a number of their own veterinary educational institutions manned by their own people and where according to them, the highest standard of Veterinary Education is available, what has India done or what has been done for India in this matter? She has been told by her Veterinary Experts to depend for ever on the British Veterinary Colleges in the United Kingdom for her supply of Veterinary Surgeons, majority of whom are just out of the colleges, to look after the interests of the Indian cow and the bullock, which bear the whole structure of Indian agriculture. When the country clamoured for raising the standard of Veterinary Education in this country, these Experts, instead of raising the standard of Veterinary Education in the existing Provincial Veterinary Colleges, have recommended that a branch Research Institution and the Serum producing station at the foot of the Himalayas should be converted, at an enormous cost, into a Higher Grade Central Veterinary College to train up annually only about 10 men for this vast country. One of the reasons put forward for this proposal is that the Provincial Governments did not develop their own Veterinary Colleges to the standard set up by them. This statement is not quite correct. At any rate so far as Madras is concerned, her Minister was quite willing to find funds, etc., to extend the course of Education in the Madras Veterinary College to one of four years (then the R. C. V. S., course was one of 4 years) in 1927, but he was advised by the then Veterinary Adviser to the Government of Madras to wait for the recommendation of the report of the Royal Commission on Agriculture in India then under preparation. This adviser and all his European colleagues, who gave evidence before that Commission on behalf of the Indian Veterinary Profession probably knew what the recommendation in the report would be, and the Minister's proposal might be shelved in course of time. It happened exactly as was anticipated then, and no wonder!

When countries smaller in area under cultivation and live-stock population than India have got many Veterinary Colleges to

give the so-called highest Veterinary Education, the British Experts in India with a few exceptions, have totally failed to impress on the authorities to make adequate provisions at least in the major Provinces in this country; on the other hand some of them have put forward proposals to continue to maintain the positively deplorable state of affairs. The Experts in other professions and departments even in this country have to their credit the development of Educational Institutions to impart the highest standard of training in their respective professions but the same cannot be said so far as Veterinary Experts and Veterinary Education are concerned in this country!

Each country has her own peculiar problems so far as every profession is concerned and to suit these problems educational curricula have been framed everywhere (except in India). Sir Arnold Theiler has said this in a telling manner at the time of starting Veterinary Education in South Africa. The same thing has been said on many different occasions by different eminent men in different countries. But it is unfortunate that the Veterinary Experts in this country care not to appreciate this as regards Veterinary Education in India, apparently for selfish reasons, else why should these Experts try to keep the Indian Veterinarian always tied to their own apron strings? No other civilised country has neglected the Veterinary Education to the extent to which it is done in this country. We have said times without number that the Veterinary needs of the country are as great as any other. The animal health and the animal wealth are closely linked with the public health and the national wealth. It is a great reproach therefore that, while other professions and departments have provided for the highest professional training, almost in each of the provinces, the Veterinary profession alone should be asked to be content with a lower standard of Veterinary Education in the Provinces.

It is often-times said by the advocates of the present system that the country cannot afford to have highly trained Veterinary Surgeons in large numbers, because they have to be paid more. It is conveniently forgotten that the country's interests cannot be long neglected by considerations of such false economy. It is surprising that such an argument should be advanced only in the

matter of Veterinary Education. On the other hand this profession, like any other profession or organisation or Science, should aim at the highest possible training and thus improve the economic conditions irrespective of other considerations. We shall be moving in a vicious circle if we say that the country cannot afford to pay sufficiently for highly qualified men because of the present economic condition. Other things being equal, the question of pay will adjust itself as it has done in other professions. No scientific profession worth its name should keep its eyes on Rupees, Annas and Pies alone when it is imperative that the highest professional education is in the best interests of the country. The ten people in a year expected to come out of the proposed Central College will be like a drop in the ocean, and will only be sufficient to perpetuate the existing "castes" and rival interests in the profession. When the Medical Profession in this Presidency and elsewhere has seen the necessity to remove such "caste system" in its ranks, the Veterinary Profession should not try to perpetuate this harmful and pernicious disability.

It is hoped that His Excellency Lord Linlithgow, whose interest in the development of Animal Husbandry work in this country is so well-known, will courageously stop the launching of the costly and wasteful scheme of the Central Veterinary College at Izatnagar and will help the cause of Veterinary Education in this country, so as to make it possible for the existing Provincial Veterinary Colleges, to teach up to the highest standard and turn out adequate number of Veterinary Surgeons, equal in training and status, to those recruited from outside India.

THE ANIMAL HUSBANDRY DEPARTMENT IN JODHPUR.

(Contributed)

The scheme of the Animal Husbandry Department, as submitted by Dr. C. J. Fernandes, Director, was fully approved of by Colonel A. Oliver, Animal Husbandry Expert to the Government of India and has now been finally sanctioned by the State Council. In the organisation of the Animal Husbandry Department of Jodhpur all allied and supplementary subjects like Veterinary,



Dr. C. J. FERNANDEZ, G. B. V. C.,
Director, Animal Husbandry Department,
Government of Jodhpur.

Dairy, Cattle Farms, Cattle Fairs and Shows, Grass Farms, etc., are concentrated into one comprehensive activity of Animal Husbandry, on the lines which have been so successfully followed in preeminently successful agricultural countries such as Denmark, the United States of America, New Zealand, Australia, the Union of South Africa and all other important British Colonies in which for years past all Animal Husbandry work has been under the sole control of an Animal Husbandry Organisation devoted entirely to the interests of live-stock and to the development of Animal Industry. Though the idea of forming an Animal Husbandry Department in Jodhpur was conceived as far back as March 1933, yet it was not until August, 1936, when the thread was picked up by the present Chief Minister, Lt. Col. Sir Donald Field that the Department was finally established with the appointment of Dr. C. J. Fernandes as its Director.

The activities of the Department are subdivided under the major heads:—

(a) *The Live-Stock Improvement Section*—which will concern itself mainly with the improvement of cattle breed in villages and encouraging the maintenance of better stock by awakening interest through fairs, shows and demonstrations. There will be a Cattle Breeding Research Station at Jodhpur to maintain and improve Pedigree Sires. The Nagour Farm at Nagour will devote its attention mainly to improve the Nagour breed. 100 pedigree bulls will be distributed free, every year in rural areas, with a view to develop local breed, to suit local needs whether for working capacity, or for speed or for dairy purposes. The service of these bulls will be free but for selected cows only. Their selected progeny will be duly registered and vaccinated against rinderpest, free of cost. All inferior males will be castrated by bloodless methods. Jagirdars have also been approached to obtain pedigree bulls and to maintain them in their villages at their expense under the supervision of the Department. To guard against stray mating, all undesirable Brahmani bulls will be segregated in the reserved area at Pali in the Brahmani Bulls Segregation Depot of the Department. In future all bulls intended for dedication will be duly inspected by the Department.

(b) *The Disease Control Organisation*—In addition to the existing Veterinary Dispensaries, three more will be opened this year in the three cattle breeding districts, viz. at Nagour, Sanchor, and at Barmer. The policy of this section is to see that in course of time one Dispensary with one Veterinary Assistant Surgeon is provided in each district. Besides these, there will be two touring Dispensaries. Serum Simultaneous inoculation and Goat Virus vaccination against rinderpest have already been introduced.

(c) *The Disease Investigation Section* under a fully qualified Bacteriologist and experienced Research Officer will concentrate its attention on the systematic investigation of local conditions with regard to diseases of the livestock and the preparation of various sera and vaccines.

(d) *The Fodder Organisation* has for its object, the making of hay, etc., a provision against fodder famines, experimenting and cultivating new grasses and reserving areas for grazing purposes in every village. An assistant who is a Graduate of the Wye College, London, has already been appointed to work in this section. The area of grass fields at present is 15,113 acres, and it is hoped to increase it by 6,754 acres within a short space of time.

(e) *The Dairy Section* under a Dairy Technologist will have a Model Dairy Farm with a cattle Breeding Research Station in Jodhpur where pedigree bulls will be bred and distributed among cattle breeders. The milk and other products obtained will be handled on hygienic lines and supplied to the public.

(f) *Cattle Fairs and Shows*. This section will organise Cattle Fairs and Shows which will form an important part of the activities of the Department. There will be three Fairs and Shows in a year, there being one at Nagour, the other at Tilwara and the third at Parbatsar.

(g) *The Propaganda Bureau* will bring home to the peasant the activities of the Department, through demonstration, collection and dissemination of information concerning cattle breeding and allied subjects, the standardizing of methods of milk recording,

maintaining of herd books, and instructional class and encouraging the use of Pedigree stocks.

NEW YEAR HONOURS.

Our hearty congratulations to the recipients of the following New Year Honours:—

(1) *Rao Sahib* on Mr. M. Anant Naryan Rao, Lecturer in Parasitology, Madras Veterinary College.

(2) *Khan Sahib* on Mr. Saiyad Mubarik Ali Shah, Superintendent, Civil Veterinary Department, N. W. F. Province.

(3) *Khan Sahib* on Chaudhri Abdul Ghani, Veterinary Deputy Superintendent, Biological Products Section, Imperial Veterinary Research Institute, Izatnagar.

(4) *Khan Sahib* on Mr. Saiyad Ghulam Hussain, Deputy Superintendent, Civil Veterinary Department, Rohtak, Punjab.

(5) *Kaiseri-i-Hind Medal (Third Class)* on Mr. Hemchandra Das Gupta, Veterinary Inspector, Bakarganj circle, Bengal.

(6) *Kaiseri-i-Hind Medal (Third Class)* on Mr. Saingye Dorzie Gowloog, Veterinary Assistant Surgeon, Kurseong, Bengal.

RAO SAHIB M. ANNAT NARAYAN RAO, G. M. V. C.,

Madras Veterinary College, Madras.

Rao Sahib M. Anant Narayan Rao is the son of the late Rai Bahadur M. Raghunatha Rao, a pioneer educationist. He graduated from the Madras Veterinary College in December 1910, and his career as a student was brilliant. He was taken on the staff of the College in August 1915, and he has fully justified the selection, he being one of the best teachers there. He has had Post Graduate training in Elephant Diseases in the Forest Department, Bacteriology at the King Institute, Guindy, Pathology at the Madras Medical College and Parasitology at the School of Tropical Medicine, London. His valuable work in the field of Research is

well-known in India as well as outside this country. He was awarded the Silver Jubilee Medal in 1935.

**KHAN SAHIB SAIYAD MUBARIK ALI SHAH, B. Sc. (Hons.),
M. R. C. V. S. (Lond.)**

*Superintendent, Civil Veterinary Department,
N. W. F. Province, Peshawar.*

The Khan Sahib S. M. Ali Shah is the son of Khan Bahadur Saiyad Mahtub Shah, late Professor of Anatomy, Punjab Veterinary College, Lahore. He Graduated in Science—with honours—from the Punjab University in 1919. He was awarded State Scholarship in 1920, by the Government of India for study at the Royal Veterinary College, London, where he passed with honours in many subjects. He took additional courses and passed in Veterinary Anatomy, Physiology and Biology at the University of London.

On his return to India, he was appointed to the Civil Veterinary Department, Punjab, and later as Superintendent, Civil Veterinary Department, North Punjab and North-West Frontier Province. In the Dhani tract he drafted the scheme to encourage the keeping of good cows which is still in vogue there and has contributed to the improvement of stock.

He was nominated by His Excellency the Viceroy and Governor-General of India to be a member of the Advisory Board of the Imperial Council of Agricultural Research from the date the Council was constructed. He was the first Indian Veterinarian appointed to that rank. In 1932, he was deputed to the Imperial Veterinary Research Institute, Muktesar. In 1933, he was appointed Assistant Superintendent Stock, Government Cattle Farm, Hissar.

In inaugurating and consolidating the veterinary work in North-West Frontier Province, he has on several occasions been congratulated by the Government of that Province.



RAO SAHIB M. ANANTNARAYAN RAO, G.M.V.C.,
Lecturer in Parasitology, Madras Veterinary
College.



KHAN SAHIB CHAUDHRI ABDUL
GHANI, G.P.V.C.,
Veterinary Deputy Superintendent,
Imperial Veterinary Research
Institute, Izatnagar, U.P.

KHAN SAHIB CHAUDHRI ABDUL GHANI G. P. V. C.,

*Veterinary Deputy superintendent, Imperial Veterinary Research
Institute, Izatnagar, U. P.*

Khan Sahib Chaudhri Abdul Ghani graduated from the Punjab Veterinary College, Lahore, in the year 1904, with a distinguished career as a student. He possesses active habits and a special aptitude for laboratory work. After graduation he was selected by Col. Holmes for service at the Imperial Bacteriological Laboratory at Muktesar. The Khan Sahib had the chance to work with almost all the Directors of the Institute and he can be rightly regarded as one of the pioneers of Indian Veterinarians who witnessed the early spade work at the imperial Bacteriological Laboratory. He was promoted to the gazetted rank of Veterinary Deputy Superintendent in 1930, which post he still holds. All the Officers who have undergone Post-Graduate training at Muktesar will remember our Khan Sahib and his hospitality. He was awarded Silver Jubilee Medal in 1935, in recognition of his valuable services.

General Articles.

A GUIDE TO THE STUDY OF THE CELLS OF THE BLOOD,

BY

D. C. MATHESON, F.R.C.V.S., D.V.S.M.,

*Professor of Pathology, Bacteriology, and Meat Inspection.
Royal (Dick) Veterinary College, Edinburgh.*

The following questions have been devised by the writer to assist the Student of hæmatology, clinical hæmatology, pathology, and parasitology in the cytological examination of samples of blood. The questions are designed to cover the examination of a wet film, hanging drop, or hæmocytometer preparation; and also of a dried fixed and stained film of blood.

Attention is drawn to the cells and to the significance of changes in their numbers, relative proportions and structure; also to the possible presence of immature forms in the circulating blood.



KHAN SAHIB SAIYAD MUBARIK ALI SHAH,
B. Sc. (HONS.), M. R. C. V. S. (LOND.),
Superintendent, Civil Veterinary Department,
N. W. F. Province, Peshawar.

The question of the origin and destiny of the cells is considered together with the effects upon the animal body which the observed changes may induce, and of the abnormalities with which changes in the cells may be associated. The question of remedies is raised. Thus the questions range over the cytology—normal and abnormal—of the blood; the pathology of the diseases in which significant changes occur in the cells of the blood; the consequences of such changes together with the function and fate of the cells and the abnormalities which may be observed in connection with those functions etc., The possible occurrence of parasites in the blood is also considered. Thus the questions will be of service to the student of hæmatology, physiology, pathology, protozoology and parasitology.

The preparation of blood should be placed under the microscope and examined with a view to answering the relevant questions one by one—the other details required e. g. as to the function or fate of the cells should be sought in appropriate text-books or lecture-notes. The general condition of the animal from which the blood sample was taken must also be considered apart from as well as together with the examination of the blood samples. The questions will be found useful in drawing up a report upon a cytological examination of a sample of blood or in compiling a case-record so far as an examination of the blood may assist such a purpose.

It is essential that blood preparations be made carefully to avoid injury to the cells and for this purpose the film spreader described in an earlier issue of this *Journal* (*Matheson 1*) may be employed. For the collection of a sample of blood for bacteriological examination the cotton-wool swab (*Matheson 2*) may be used. Details as to the method of inoculating a tube of culture medium will be found described in an earlier number of this *Journal* (*Matheson 3*).

The Questions.

1. What is the average number of the red blood cells per cubic millimeter of blood in man, dog, cat, horse, mule, ass, ox, sheep, pig, goat, rabbit, fowl, guinea-pig, mouse, rat, frog?

2. What is the average number of white blood cells per cubic millimeter of blood in the above animals?
3. How are the white blood cells classified?
4. What are the average numbers of the different types of white blood cells per cubic millimeter of blood in the above animals?
5. What are blood platelets?
6. What are the functions of the red blood corpuscles?
7. What are the functions of the white blood corpuscles?
8. What is known with regard to the functions of the blood platelets?
9. How may the functions of the cells be modified or impaired?
10. What is the significance of such alterations in the functions of the cells?
11. What are the consequences to the animal body of such modification or impairment of the functions of the cells of the blood?

In connection with the examination of the blood by the use of the hæmocytometer, notice:—

1. Alterations in the numbers and proportions of the cells.
- A. Is there evidence of subtraction from the normal numbers of the normal cells if so:—

1. Why have the cells gone?

Perishad:—Why? Destroyed:—How? Not supplied:—Why not?

2. Where have the cells gone?
Consider the destiny of the cells of the blood,
3. Has the subtraction been made from the total number of the cells or from the total number of a particular type of cell.

4. What are the possible consequences of the absence of these cells from the blood?
5. How may those consequences be remedied?
- B. Is there evidence of addition to the normal numbers of the cells, If so :—
 1. Under what circumstances may such an addition occur?
 2. What sort of cell has been added to the blood?
 3. From whence have come such cells?
 4. What does their presence in the blood signify?
 5. What is the destiny of such cells?
 6. What are the consequences of their presence in increased numbers in the blood?
 7. How may those consequences be remedied?
- C. Are abnormal forms present, if so :—
 1. Are they abnormal red blood cells?
 2. Are they abnormal white blood cells?
 3. Are they abnormal blood platelets?
 4. What is their number per cubic millimeter of blood?
 5. What is the proportion of these abnormal forms in relation to the proportion of the normal cells?
 6. Under what circumstances may such an addition occur?
 7. What sort of cell has been added to the blood?
 8. From whence have come such cells?
 9. What does their presence in the blood signify?
 10. What is the destiny of such cells?
 11. What are the consequences of their presence in the blood?
 12. How may those consequences be remedied?

In connection with the examination of a dried, fixed and stained film of blood. Notice:—

1. The normal cells.
2. The presence of abnormal cells.

Notice abnormalities in size, shape, structure, contour, contents, composition, arrangement. Staining reactions, character of the nucleus etc. Notice any evidence of immaturity in the cells,

3. Alteration in the proportions of the cells of the blood.
 1. Is there any evidence of a reduction in number of some of the cells, if so
 - a. What type of cell is missing?
 - b. Why are such cells absent?—Not supplied? destroyed? etc.
 - c. Where have the cells gone?
 - d. What are the consequences of their absence?
 - e. How may such consequences be remedied?
 2. Is there any evidence of an increase in the number of some of the cells, if so :—
 - a. What type of cell is increased in number?
 - b. Why are such cells present in additional numbers?
 - c. From whence have come such cells?
 - d. What are the consequences of their presence in increased numbers?
 - e. How may such consequences be remedied?
4. Why is the differential count so important in the examination of the cells of the blood.
5. If there be parasites present in the blood.
 1. Intracellular.
 - a. In the red blood corpuscles.
 - b. In the white blood corpuscles, etc.
 2. Extracellular. In the plasma :—
 - e. g. (a) Bacteria
 - (b) Protozoa
 - (c) Vermin, etc.

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RINDERPEST—ITS POST-MORTEM APPEARANCES

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The digestive tract of an animal being the chief point of attack in Rinderpest, it is obvious that the post-mortem lesions will be confined mainly to the organs of the digestive system. Abnormal conditions of the organs of other systems frequently obtain, being attributable directly to Rinderpest and indirectly to the complications occurring before death during the course of the disease. Just as the ante-mortem symptoms vary in intensity according to the species of the animals affected, their degree of susceptibility, and severity of attack, so do the post-mortem appearances vary in degree of intensity and involvement of the organs of different systems according to the species and breed of animals affected, virulence of the disease, and stage and conditions under which death may occur. The post-mortem appearances, as they are observed in most cattle and buffaloes, will be described in detail in this article.

A general inspection of the carcase before it is opened will reveal the emaciated condition of the animal, its sunken eyes with accumulation of semi-dried discharge in the inner canthus of the eyes, the nostrils containing muco-purulent discharge and lips covered with tenacious mucus and saliva. The tail will be soiled with diarrhoea and the anal region also soiled with dried faeces. The mucous membrane of the rectum will be congested and there

may be slight eversion present. The abdomen will be tucked up in a fresh case and in animals that may have died of prolonged attack bed sores may be present.

In the mouth specially in the mucous membrane of the lips and gums and under the tongue, on the dental pad, and sometimes on the hard palate and cheek, greyish pin-head size vesicles and tiny ulcers will be seen and in some cases large sized ulcers, which are formed by a coalescence of many small ulcers, may be observed more often on the gums and lips. In animals that may have died of a chronic attack, the ulcers may be found in a state of healing with bran like deposits on the gums and lips.

The pharynx will be deeply congested and may contain vesicles and ulcers and at times a thick diptheroid deposit.

The oesophagus is usually normal; occasionally a few ulcers may be observed along the length of the mucous membrane particularly at its upper portion.

The rumen very seldom shows any change. In chronic attacks the mucous membrane may present slate coloured appearance and be easily detached. Reticulum is usually not affected. The omasum or third stomach may contain very dried food and the mucous membrane as in the case of rumen will be easily detached in some cases.

The abomasum or the true stomach is invariably affected in this disease. It may contain a small quantity of tenacious mucus and will present a congested appearance, the shade of which will vary in different parts of the organ according to the intensity of the infection. The shading will be pure brick red to dark brown and the congestion will be usually more intense in the pyloric region. The congestion is also pronounced on the folds of the mucous membrane particularly on the ridges. There will be general oedematous condition of the lining membrane. Plate like deposits may be found on the folds of the mucous membrane and to her parts which are usually circular and of the size of hemp seed and even larger. These are loosely attached at their borders and are non adherent at the centres. When rubbed off, they leave

depressions of slight red color. A few ulcers may be observed in the mucous membrane which resemble those seen in the pharynx and buccal membrane. In animals that may have had a chronic attack and died of debility, healed ulcers in the form of roundish depressions will be observed often at the pyloric region.

The small intestines like the abomasum are invariably affected. Acute infection is marked by intense congestion of the mucous membrane along the whole length of the canal and in less acute cases the hyperaemic condition will be slightly less pronounced and may be observed in patches. The oedematous condition of the mucous membrane occurs usually in acute attacks and in such cases caseous deposits may be observed in the duodenum, jejunum and ileum, which when rubbed off will leave slight depressions. The Peyers patches are congested, swollen, and slightly elevated above the surrounding tissue and even dirty grey caseous deposits may be observed on and round them. Careful examination is necessary to detect the inflamed and raised condition of the patches and the lesion being invariably present in Rinderpest to a greater or less degree, may be considered almost diagnostic of the disease. In very few cases small growths of the size of small buttons containing grayish yellow caseous material were observed at Muktesar and the condition resembled to a certain extent the lesion in the intestines occurring in hog cholera.

The large intestines are also frequently affected but the lesions are much less pronounced than those of the small intestines. The congestion is less intense and in patches along the length. The caseous deposits are seldom seen. The mucous membrane of the rectum presents a peculiar appearance the congestion occurring in the form of deep red stripes along the transverse folds; these are called "zebra marks" and are considered by some Veterinarians as a very characteristic feature of Rinderpest.

The liver shows parenchymatous or fatty degeneration; the gall bladder is distended and contains thin green or yellow or even dirty grey bile. The mucous membrane of the gall bladder may be inflamed and contain vesicles and ulcers and at times a few necrotic patches.

The spleen is usually in normal condition; very rarely it may be enlarged.

The kidneys may show fatty degeneration and the mucous membrane of the hilus of the kidneys and of the urinary bladder may present small hæmorrhages and a certain amount of catarrhal swelling.

The larynx is slightly congested. The trachea is usually normal. The bronchi are usually normal but sometimes it may be filled with a pale yellow gelatinous exudate. The lungs are occasionally affected and may show hyperæmia and contain scattered areas of catarrhal pneumonia.

In the heart hæmorrhages may be found on the epicardium and under the endocardium. The organ is flabby and the muscles are friable and of a grayish brown colour. The blood is dark red and partially coagulated.

The lymph glands may be slightly swollen particularly those in the mesentery and their tissue reddened and moist.

The brain and the cerebral meninges usually present a normal appearance; occasionally slight congestion may be found.

It should be understood that the appearances described above will not be observed in every case but represent practically the sum total of the conditions observed in most post-mortems of cattle that may have died of fairly severe attacks. The lesions in the individual cases depend upon the stage and conditions under which death has occurred. For instance, a bull which has died of a fairly severe attack but was bled previously for virus or any other purpose, may present post-mortem appearances in which the reddening of the mucous membrane may be less intense. Again in cases where deaths have occurred at an early stage several lesions may not be present particularly the ulcerated and diphtheric condition. The appearances in these cases will be an intense congestion of the mucous membrane of the digestive tract, specially in the abomasum and the small intestines. The subject, which can furnish study of most of the above described

post-mortem lesions particularly of the digestive system is a bull of a high susceptibility such as the himalayan type which has died of Rinderpest after a severe attack about the twelfth to the fourteenth day from the date of inoculation and has not been subjected to the operation of bleeding.

A few contagious and non-contagious diseases present post-mortem appearances, which resemble those of Rinderpest and as a Veterinarian has frequently to make an autopsy as a means to ascertain the cause of an epidemic, it may be worthwhile to describe here briefly a few points of resemblance and also of difference. The post-mortem appearances in a case of Hæmorrhagic Septicæmia, for instance, resemble those of Rinderpest specially the congestion of the mucous membrane of the digestive canal. In Hæmorrhagic Septicæmia the congestion is intense and diffuse in the abomasum and small intestines and gives the appearance of a red paint being applied to them. In Rinderpest, the intense congestion is patchy particularly in the stomach and is more pronounced at the pyloric end and on the ridges of the folds. The absence of the vesicles and ulcers and diphtheric condition in H. S. is an important point of difference.

Another disease which can be mistaken for Rinderpest is Piroplasmosis. In this also the reddening of the mucous membrane of the digestive tract is pronounced but it is not so diffuse as in H. S. . The points of difference are that several hæmorrhagic spots circular and of various sizes, are frequently present in the small and large intestines; the intestinal contents are mixed with dark red blood and the characteristic vesicles and ulcers of Rinderpest are absent.

In cases of gastro-enteritis, caused either by chill or irritants taken internally, the points of difference are the absence of the vesicles and ulcers in the mouth and pharynx and the caseous deposits in the intestines.

At times it will be found difficult to arrive at a positive diagnosis of Rinderpest. In such cases the symptoms before death, the virulence of the epidemic, its history, and other necessary information will have to be obtained and considered before a positive

diagnosis can be made. Even inoculations of susceptible animals with the peritoneal fluid or spleen tissue may be necessary to dispel any doubts.

As Rinderpest outbreaks are not uncommon among sheep and goats in India and the goats particularly are being largely employed for virus production, it will not be out of place to describe herein the post-mortem appearances in animals dying of Rinderpest.

Carcasses dead of Rinderpest are greatly emaciated; the eyes are sunken the lips are covered with tenacious mucus and saliva; the nostrils are covered with a thick muco-purulent discharge with incrustation and sloughing. The anal region will be soiled in most cases with dried fæces and at times with diarrhoeic fæces.

There is slight reddening of the mucous membrane of the gums and lips, and the hard and soft palates may show a deeper tint of red at the posterior portion. The pharynx is deeply congested and may contain a few ulcers and aphthous deposit. The œsophagus, rumen, reticulum and omasum are usually normal. The abomasum is invariably affected and may present evidence of deep profuse congestion, which is more marked at the pyloric end. Ulcers diagnostic of Rinderpest are rarely seen; those commonly found are the type of 'grass ulcers'. The small intestines are frequently affected and will present marked congestion particularly in the duodenum. Ulcers and caseous deposits have not been observed. In the large intestines, the congestion is less pronounced and patchy. The gall bladder is distended with dark green bile and the mucous membrane of the genital organs is congested. The larynx, trachea and small air passages are congested and may contain a large quantity of froth. Both the lungs show distinct stages of pneumonia; all the lobes, especially the anterior and cardiac, are consolidated and the cut surface of this area is moist and exudes a serous fluid; the pleura is congested and thickened; fibrinous deposit and adhesion are occasionally seen and the thoracic cavity may contain 50 to 100 c.c. sero-sanguinous fluid. The pericardium may be congested and the sac may contain a few c.c. of serous fluid. The heart is usually normal.

FEVERED FLESH.

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The meat which the inspectors designate as 'febrile' is that which has undergone certain changes characterised by alteration in the colour of muscles, infiltration of the inter-fascicular connective tissue and a peculiar odour. As a rule, a rise in temperature or pyrexia causes changes in flesh which are practically identical with those commonly found in fevered flesh. This fever is generally due to the presence of toxins of bacterial origin, but the so-called 'febrile' or 'fevered' flesh does not necessarily come from animals suffering from elevation of temperature. It must be noted that the clinical appearance of fever was formerly regarded as a sign of importance in the evaluation of flesh. This standpoint, however, is no longer tenable. It is not the fever which is of importance, but the nature of the disease which causes the fever, because fever is a symptom of many diseases which differ in their sanitary importance. In France the term 'febrile' flesh (*viandes fievreuses*) is used in meat inspection to describe salmon-coloured flesh of a peculiar odour and soft consistence.

As a rule, when the flesh of a carcass is fevered, the carcass would not have bled properly and consequently the small vessels may be full and very much injected, and the large ones may contain imperfect and dark-coloured clots. When first cut, muscles show small hæmorrhages in their substance and are reddish brown or dark in colour due to high blood content, and turn pink on exposure to air. This is more often seen in hind quarters. The œdematous infiltration of inter-fascicular and inter-muscular connective tissue makes the meat soft, flabby and sticky and soapy to touch. On section one may see a slow exudation of pink clear serum. The capillaries are engorged due to imperfect bleeding; this is better seen in the shoulder and flanks. The pleura and peritoneum have a dull leaden colour. The fat in the carcass varies—in some it is firm and pink and in others soft and white. The odour is peculiarly disagreeable and sour. It is best felt when shoulder is cut. It passes away on exposure. The

vertebræ are of an un-natural brown colour when sawn down, but get brighter on exposure. The flabbiness of the carcass is best shown by the muscles bulging out over the pubic symphysis when the hind quarter is hung up by the hock; the fore-quarter also admits of easy movement on the trunk due to the soft state of the muscles. The flesh has a sticky, soapy or albuminous feeling that is best felt at the newly-cut surfaces. Microscopically, the fibres show cloudy swelling, striæ disappear, nuclei stain badly and there may be an infiltration with leucocytes. Some organisms may also be found, as *Bacillus coli*, Paratyphoid and *Bacillus enteriditis* (Gaertner), *Staphylococci*, *Streptococci* and certain specific organisms, like *Bacillus anthracis*, *Bacillus* of Swine Erysipelas, etc., especially in the pulp of the lymphatic glands. According to Cesari and Panisset*, diseases causing 'febrile flesh' fall into two groups: septicæmias (anthrax, erysipelas, acute inflammation of the abdominal organs, such as peritonitis, enteritis and dysentery) and pure muscular changes. In the latter, coli bacteria are nearly always present.

*² Langrand, while working in the Laboratory of the Central Meat Markets of Paris, found that attempts to make bacterial cultures from fevered meat proved abortive, in spite of the fact that considerable quantities of tissue were used. Nor, was it due to any acidity of the culture medium, and aerobicity or anaerobicity of the surroundings of the media played no part. From this it follows that the hypothesis that putrefaction is the cause of the alterations in fevered meat is untenable. Again, the changes brought about by putrefaction do not resemble fevered flesh. A softening of the tissues, extending from the surface to deeper parts, is one of the constant effects of putrefaction, whether naturally or artificially provoked. Corresponding to the extension of the softening, there is a liquefaction caused by bacteria or their products, but there is no exudate corresponding to that of fevered flesh. In the latter case the reaction is alkaline (ammoniacal) and volatile sulphur compounds are soon evolved. On the other hand, bacterial fermentation is generally accompanied by a more or less active peptonization of albuminoids. In those cases where attempts

* Text-book of Meat Inspection (Ostertag), edited by D. Young. 1934 p. 400

to make cultures failed, no evidence of the presence of peptones was obtainable. Hence, it may be asserted that fevered meat represents a particular pathological entity, in which bacteria play no direct and important role. One might suggest that bacteria are nevertheless responsible for the changes observed in fevered meat, that though not present in the muscular parenchyma, they may exert their influence by means of their toxins through the nervous system, and that the characteristic exudate is the effect of stimulation of vaso-dilators. This probably is not the case; the vascular changes are themselves accessory phenomena.

Intra-muscular serosity, flaccidity of muscle parenchyma, and the intensity of oxygenation of the colouring matter which impregnates the tissue are the more important characteristic features of fevered flesh. The last two characteristics result from the first—the most important of them; indeed, on the one hand, the softness of the muscles, especially that of the quarters, is the result of inter-muscular exudation; on the other hand, the exudate assumes a brighter tint on exposure to air, but the tint is not uniformly distributed. Intra muscular exudation is, therefore, the fundamental character of fevered flesh. This consists in an abundant serosity of more or less intense red colour, which escapes from the muscle when the latter is cut, or which is found accumulated in intra-muscular spaces. It may be recalled here that there exists a close analogy between such meat and the meat that has been submitted to cold storage, particularly that which has been frozen. On cutting into a quarter which, after freezing, has been thawed, one finds abundant exudation and a red discolouration of connective and fat tissues. These characters are sufficient to trouble the inspector and lead him to believe that the meat in question is fevered; but a careful examination will enable him to differentiate between the two conditions. Where meat has been frozen, the exudate is particularly abundant in intra-muscular spaces (around the popliteal lymphatic glands, inside the point of the shoulder, etc.); on section the muscle assumes a uniform red colour; lastly it gives off the characteristic odour which is (peculiar to meat, but in no case is there any aromatic odour which

is) observed in fevered flesh. Fevered muscle is really an organ profoundly modified; it has lost its physical properties; it has become practically a sponge, swollen with its own juice, which can be expressed from it easily.

There are three types of muscle from the meat inspection point of view—normal, fevered and fatigued—all containing practically the same proportion of water. Nevertheless, their microscopic characters enable one to differentiate between them; fatigued and fevered muscle forming the two extremes, whilst the normal muscle holds an intermediate position. The first is dry, sticky, glue-like, and in consequence appears poor in water, while the second is moist and often allows a considerable amount of serosity to exude from it, even without any pressure. One can only explain this apparent contradiction by assuming that the water contained in equal quantities in the two types of muscle (is found there in two different forms, combined with and enclosed in the muscle) fibres (fatigued muscle) and in the free state and ready to escape (fevered muscle). It is, therefore, a question depending upon the minute structure of muscle fibres. In both cases it is modified, but in definitely different ways. In so far as fevered flesh is concerned, the structural modifications are found to consist of an abundant exudation, accompanied by a more or less marked softening of the tissue. It therefore follows that fevered muscle has undergone a change in its own substance—a true autolysis, the cause or causes of which is or are unknown, but it appears that the mechanism of this is related to physical phenomena, osmosis and dialysis.

Judgement:—All fevered flesh arising of any cause or causes must be condemned without any hesitation, and the entire carcass seized. This is unfit for human consumption even after sterilization. Febrile flesh generally contains febrile principles, like ptomaines, alexins and other complex proteid substances, which are not destroyed by heat in cooking, and this is the reason why fevered flesh is found to be responsible for most cases of food poisoning. In sterilization organisms may be killed but their toxins may not be got rid off. According to Cesari and Panisset, 'febrile flesh' is to be treated as injurious to man, both in the raw and in

*2 From *L'Hygiene de la Viande et du Lait*. October, 1910.

the cooked condition and should not be utilised for preserved food. If flesh is found 'fevered' due to some generalised bacterial affection, the very fact of its being of this nature is sufficient to warrant seizure of the entire carcase, whatever the degree of tissue changes may be.

WILD ANIMALS IN CAPTIVITY IN ZOO GARDENS *

BY

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It is a mistake to consider that wild animals in jungles are healthy and free from disease. The healthy wild animals of the jungle are in fact the survivors of the fittest—the sick and the weak, the old and the infirm having died or been killed. It is true that there are fewer diseases in them than in the animals living in captivity; but the former on the other hand are exposed to grave dangers, such as the lack of care in sickness, infirmity and old age, starvation and attacks of enemies, which is not the case with the animals in captivity.

The maximum longevity of life in them is considered to be more or less the same as is the case with the captive animals but it is very doubtful whether they even reach that maximum age. Hegenbeck the great Naturalist and founder of the well-known Hamburg zoo in Germany puts down the average age of a lion or tiger in captivity to 30 years. This is also our experience. To illustrate an example there was a very old lion in the Mysore Zoo about four years ago which was kept in the open paddock in the gardens there, which I am informed had been the inmate of that Garden ever since its inception.

It has been noticed that many wild animals captured only a short time before their admittance to zoo, have been infested with a member of parasites; and these parasites therefore must have possibly existed in them in their wild life, in the jungle, and that

A broadcast speech from the Bombay studio and the All-India Radio on 15-11-1936.

these parasites may have been in the host, when in health, only to give him the final stroke, when the host had become weak or had lost the vitality. Sick animals seek seclusion in their caves or dens and do not freely move about and therefore are not killed by the Shikaries as the healthy wild animals.

Some of the disease conditions are very peculiar to captivity but it is reasonable to assume that many diseases that are found in the wild animals in their captive state in the Zoo, also exist in the wild state. Some of the extinct races of animals may also have been ascribed to this cause. Rinderpest has caused severe losses among the wild animals, and according to the report of the Government Veterinary Surgeon of Ceylon, a large outbreak occurred among the wild pigs in that country in the year 1909.

As the result of captivity many curious physical and mental derangements are seen in the wild animals in the Zoo, and the reason is not far to seek. All such factors as unnatural and unvaried food to which the animals are not accustomed, change of climate and surroundings, fear, weariness, physical and mental degeneration effected by the disuse of muscles and mental powers, and various several other factors react in more or less degree in a harmful manner.

Animals in captive life do not get their natural food. Some of them like the Carnivora may approximately get their natural food, but they get it not in the natural way. There is absolutely no variety of food given to them. For instance they get cut meat only—muscle and bone and not blood, guts and glands. A lion or tiger gets his meat handed to him in regular measured ration. He has no chance to tear down his prey, and the result is that the jaws of the lion or tiger bred in a Zoological garden or Menagerie differ very much in shape and size from the jaws of the jungle bred animals. The zoo animals get their food regularly with the same monotony at certain prescribed and regular hours of the day, say either in the evening or in the morning except for a fast on Sunday once in the week, which is quite necessary for their well-being. Like the animals in the wild state, there is no alternation of feasting and fast. Certain animals

in the wild state are found not to live long in captivity and this is due to their inability to get their natural food in their unnatural condition of life and surroundings to which they are subjected. But there are many others that get used to the new diet and thrive very well in a climate, quite different from their natural habitat. Take the case of Polar Bear from the Arctics. They are doing so well in the Mysore Zoological Gardens, and are one of the most interesting features of that Zoo; so is the case with the Pheasants from the Himalayas like the Monauls, the Black-headed Tragopan and Pokras (or Koklass) from Nepal. These Pheasants thrive very well in Bombay even in the hottest months in March, April and October; of course under favourable conditions of life, environment and surroundings in which they are housed in the Garden.

Deer and Antelopes are noticed to use a particular favourite corner and not the whole paddock, which may be large. The mortality from the cage-mates has not been found to diminish very perceptibly in a large enclosure, for it is always the rule that the stronger follows the weaker, until he gets him, irrespective of the fact that the enclosure may be large. Equally true is the case with the Aviary birds, and it is therefore essential to keep away those birds that are scrappy in disposition.

In captive animals mental disease is a very interesting psychological study, and there are many conditions prevalent which produce it. What is known as Coprophagy—eating of their own fæces, is very common and it is found chiefly noticeable in the highest apes like the Chimpanzee. Perhaps this condition may be due to some defect in the diet. Eating of fæces is not healthy and does not occur in nature. It is the act of mental aberration.

Killing of the mates during the rutting season and killing of the young ones by parents are some of the insane acts seen in the inmates of Zoo. These acts would probably cause the extinction of the race, if prevalent in their wild state. In the jungle life the male chooses his own mate and therefore does not feel inclined to kill her, which is not the case

in captivity, where a mate is chosen for him and is forced upon him "Willy—Nilly" by his master. The Natural History tells us that a lion chooses his own mate in the wilds and proves to be an ideal husband and a dutiful father to his young ones, attending first to their care and wants. It has also been observed that a male monkey, if put together with several females, shows feelings for one particular female only and ignores all others. By simply putting them in a cage, we cannot mate wild animals and birds. There is a sort of mutual affinity developed.

Another noticeable feature observed in captivity is that the mother devours her young ones shortly after birth. This characteristic is also seen in some of our domesticated animals like dogs and cats.

Certain other insane acts like sucking, gnawing and eating parts of itself or of cage-mates and making a snoring noise which is seen particularly in Bears, and grinding of teeth in Primates are common features in a variety of inmates of the Zoo. All these phenomena are, it is probable, due to confinement, idleness, ennui and want of occupation. These acts, however, do not often occur in nature, for the animals in the wild state are always busy in finding their own food, attending to their mates and fighting and avoiding their enemies &c. It will be seen that the animals in the Zoo are found to be overfed, lazy and indolent. They are found sleeping the whole day in their dens except during the time of feeding, when they show alertness and are active. They practically lead a monotonous life. All these factors react on their physical and mental conditions. An intelligent and sympathetic keeper is a great asset, for he plays with the animals in his charge and thus relieves their monotony. The parents of Carnivora may become quiet and tame in the Zoo, and when called, come to the bars of their cages to be stroked and patted and also fondled; but their young ones may remain wild from birth.

Nostalgia or home sickness is another characteristic of the wild animals and is fairly evinced in birds by their migrating habits at a certain time of the year and by certain birds returning to their original haunts for nesting every year.

Most of the wild animals are found to be sterile in captive life in the Zoo. Whether the fault is with the male or with the female, it is difficult to say. But some families are fertile, even with the unfavourable surroundings and environment; whereas others remain sterile. Axis Deer, Black Buck, Four-horned Antelope, Nilgai, Hog Deer and Sambars are all good breeders. Lions breed fairly well. There are instances in which they have bred twice in a year. Tigers and Leopards are poor breeders. Zebras breed in the Garden. In the Bombay Zoo, the Zebra mare born in the Gardens in the year 1918, is a very fine specimen and it is considered to be the first instance of a Zebra having been bred in this country. Another young Zebra was born in 1930, and is now an inmate of the Mysore Zoo. Among the Marsupials, Kangaroos and Wallabies breed in the Zoo. llamas are also found to breed in captivity; bears and Hyænas breed well but the mother destroys her young after birth. It has been our experience that there is no fixed breeding period in the captive wild animals of the Zoo. The period of gestation also varies in different species.

Each species of animals has its own particular complaints and diseases, its own idiosyncrasies in the way of health, which have to be studied carefully and observed from day to day. In fact the study of natural history, the habits of the animals in their wild state, etc. should form the ground work. Among the principal diseases in Carnivora for instance, Diarrhoea, Dysentery, Paralysis, Skin-diseases, Worms, Liver and other Gastric troubles are the commonest diseases. The infectious diseases met with in the Zoo animals are Anthrax, Hæmorrhagic Septicæmia, Foot and Mouth disease, Rinderpest, Distemper and Tuberculosis &c. Tetanus also occurs in the solipeds and primates of the Zoo. One wild ass suffered from Tetanus in the Gardens in January 1930. The animal was given injections of P. & D's Anti-Tetanic serum and saturated Solution of Magnesium Sulphate. With careful nursing and treatment this animal got over the attack. A clinical lecture was given to the senior students of the Bombay Veterinary College and they were shown the method of control of the wild ass and the line of treatment adopted.

Tuberculosis is found in Monkeys particularly. They live generally in hot humid climate of the jungles, which may possibly be a pre-disposing cause for them to suffer from Tuberculosis, when taken in and confined in captivity. Heat, moisture and humidity seem to agree with them; but the least exposure to cold and damp brings about pulmonary affections, from which they are seldom cured, Deer and Carnivora do not escape the ravages of this disease in captive life.

Plague is another disease which attacks the monkeys in the Zoo; and in the year 1925, there was an outbreak of epidemic amongst them in our Zoo. We used the Hafkine's Anti-Plague Vaccine as a preventive in them with very great success. There are number of other classes of animals which have suffered from and died of plague.

Rinderpest and Foot and Mouth disease affect all classes of Deer and Antelopes. When transporting this class of Bovidæ from India to Foreign countries, like Australia and South Africa, a certificate of health is required to be sent along with the stock to show that the stock is healthy and has not been in contact with infectious disease for well nigh six months. In an outbreak of Rinderpest that occurred in our Garden in the year 1928, amongst the Spotted Deer and Black Bucks the use of "serum alone method" saved nearly fifty per cent of the stock. It was a very hard job for me to capture and inoculate these wild deer and with great patience and tact all the animals were inoculated.

Diagnosis and treatment of sick animals of the Zoo is a very difficult problem. In the first place the person in charge must be well acquainted with the study of Natural History, which must form the ground work and he must be in contact with the animals in health and observe them from day to day; as each species of animals has its own peculiarities and idiosyncrasies. I have cases on record, where Sambars in pink of condition and health have been found on destruction to be infected with a generalised form of Bovine Tuberculosis; where as their young ones within a month after birth have not reacted to Tuberculin

Test. I have also a case of a sturdy full grown lion in the pink of health and the father of eight litters in our Garden. This animal got suddenly ill and the only symptoms shown were extreme constipation and torpidity of the liver and it was suspected to be a case of intestinal obstruction. On autopsy after death, what most surprising was that the liver was a full mass of Tubercle. Tubercle lesions were in the mesentry and the right lung was found infected with Tubercular nodules.

From some of the facts related above, it will be seen how difficult is the diagnosis and much more the treatment.

Prophylaxis is our only sheet anchor.

DURATION OF IMMUNITY IN AMRIT MAHAL CATTLE INOCULATED WITH GOAT VIRUS ALONE AGAINST RINDERPEST*

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Dr. Edwards (1927) recorded that by passaging virus of bovine origin through goats, introduction of piropilosis could be eliminated during the serum simultaneous inoculation against rinderpest. Later on, during the course of his experiments he, Dr. Edwards [1928] used anti-rinderpest serum substituting goat virus for ox virus, the dose of serum being the same as in the case of S. S. inoculation with ox virus. Some of these animals were tested for immunity at intervals varying from 12 to 31 months after the initial immunisation and concluded as reported by Banerji [1933] that the degree of immunity obtained with this product is adequate for the purpose of protecting against death from

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rinderpest for a period of at least 31 months and that at 24 months and possibly even at 18 months a certain proportion of these animals can contract the disease in mild form. Subsequently Kerr [1931] in Bengal used goat virus with anti-serum on "plains" cattle. Cooper's [1932] experiments in this connection at Izatnagar in addition to the experience gained by him in two "plains" districts of Bengal and United Provinces indicated that it might be possible to use goat virus as a vaccine or with only extremely small doses of serum. Kerr [1932] and Sterling [1932] in Bengal and Central Provinces dispensed with anti-rinderpest serum and proved the possibility of using goat virus alone. Krishna Iyengar [1932-33] used goat virus alone on 520 animals where 2 deaths were recorded due to the reaction of virus. Clerk [1932] experienced, while conducting inoculations with goat virus, excellent results with a very small mortality in some herds and in some heavy mortality in Nigeria.

After completing some of the preliminary experiments with goat virus in the Laboratory, a programme was drawn up to study the exact nature of reaction and the duration of immunity produced under field conditions in Mysore by inoculating goat virus alone.

Selection of animals:—It is very difficult in India where the system of rearing cattle is quite different as compared with western countries, to maintain the statistics of particular animals. Due to the practice of sale or exchange of cattle almost every year, except some cows, by the agricultural population, no particular animal will be available after a certain period to collect the required statistics. As there are very few Dairy Farms run by private enterprise in this country we have to depend on the Dairy Farms and other breeding concerns managed by Government.

Arrangements were made with the Live-stock Expert in Mysore to make available one of the herds of Amrit Mahal cattle for the purpose of studying the immunity conferred by the inoculation with goat virus alone. He was kind enough to place herd No. 3 at our disposal. 213 animals, the ages of which varied from 1 to 5 years at the time of inoculation were selected for inoculation. These animals were not protected previously by any

method against Rinderpest. Of these animals only 165 were actually available for our future test purpose as the remaining animals were the property of the **Servegar*.

Inoculation camp:—The Amrit Mahal Cattle are not well domesticated, or broken for work purposes. They are maintained by the Government of Mysore mainly for the purpose of breeding good variety of bulls. Each herd consists nearly of 400 to 600 head of cattle. They move from pasture to pasture. These animals are very high spirited and famous for their strength and endurance. Control in their semi-wild state is possible only with special contrivances. A circular stockade with bamboos or jungle wood up to a height of nearly 10 to 12 feet is put up so that the animals may not jump over and escape. The inlet into this stockade will generally be a small gate made of bamboos. The required number of animals is driven in a group into the stockade through this gate. Opposite to the gate, on the other side, a small passage about 10 feet long and 2½ feet wide is constructed with very strong bamboos. To control the animal for inoculating or for making observations, one animal at a time is driven into the passage and the movements of the animal are controlled by putting the cross bars in front and behind the animal.

The place of camp was arranged in a pasture near Arsikere about 100 miles from Bangalore.

The result of Goat Virus inoculation:—213 head of cattle were protected with Goat Virus [brew Nos. 92, 93 and 94 of 1932-33] using a dose of 1 c.c. of virus per animal on the 17th and 18th February 1933. Out of these 165 animals were set apart for making observations and conducting immunity tests. [Vide table I]. Observations were made for 10 days from the date of inoculation. The percentage of reactors among calves aged 2 years and below was much higher [92 and 93 per cent.] compared with animals above

* *Servegar* is a petty official who will be in charge of an Amrit Mahal herd. He is held responsible for loss of animals, etc. As a remuneration, he is allowed to have his own animals with the Government animals to graze on Government pastures.



Controlling Amrit Mahal Bulls in a stockade for inoculation and examination.

A group of Amrit Mahal Cattle.



An Amrit Mahal Bull secured to a Stockade.



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two years of age. [Vide table 11]. Almost all the reactors passed through a typical syndrome of rinderpest [Vide chart] and only one calf [1932 born] developed vesicles in the mouth on the 8th day after the inoculation which healed in two days [Vide chart]. The incubation period among the animals aged above two years was observed to be from 3 to 5 days and the febrile period commenced after the 5th day and even as late as the 6th, 7th or the 8th day. The reaction among these animals was certainly very mild compared with that observed in the first group of animals aged below two years. In this latter group of animals [whose age ranged from a few months (3 to 4 months) to two years], the incubation period was noticed to be between 48 and 72 hours and the thermal reaction severe the highest temperature recorded being 106.4° F. [Vide table 1]. The thermal reaction commenced from the 3rd or 4th day and continued for 4 or 5 days. The temperature came to normal by the 9th or 10th day in all the animals [Vide chart], irrespective of severity of the reaction set up.

Two goats were used as controls for goat virus at the camp. Both of them got the infection and exhibited both thermal and clinical reactions.

Immunity Tests.

It was decided to divide these animals into batches representing all ages [1 to 5 years] for the immunity tests at different intervals.

The first batch of 48 animals was tested with bovine virus [brew Nos. 552, 555 and 556 of 1932-33] on the 13th March 1933, three weeks after the date of primary inoculation, 39 animals in this batch had reacted to Goat virus. None of the animals under test showed any kind of reaction for a test dose, [Vide table 1 and 111 and chart]. The two controls [Bull calves] out of the three used in this experiment reacted to the bovine virus proving that the animals have developed immunity against rinderpest,

The second batch of 15 animals was tested with bovine virus on 2nd April 1933, six weeks after the date of primary inoculation. All the animals of this batch had reacted to Goat Virus. Three

buffalo bull calves were inoculated with bovine virus [brew Nos. 581 and 582 of 1932-33] prior to the test inoculations. Two buffalo calves and two bull calves took the infection and reacted to the virus. Blood was drawn from one of the calves [No. 5] at the height of reaction and was inoculated to this second batch of animals. A sample of this virus was despatched to Bangalore where 6 buffalo calves were sub-inoculated. All the calves got Rinderpest and three succumbed to it. None of this second batch of animals reacted to this test dose which fact proves that the animals acquired an immunity against Rinderpest.

The third batch comprising of 25 animals were subjected to immunity tests with bovine virus [brew No. 235 of 1933-34] on 23rd October 1933, eight months after this date of the primary inoculation. 19 animals of this batch had reacted to goat virus [Vide table II]. Three local bull calves were used as controls for this test with bovine virus. Two of them took the infection typically. At the same time 12 buffalo calves were infected with the same sample of virus in the institute at Bangalore. 11 calves got the disease and 8 died of it. None of the test animals showed any kind of reaction, thus proving that this third batch of animals was immune to Rinderpest after inoculation with Goat-virus.

The fourth batch of 25 animals was tested with bovine virus [brew No. 35 of 1935-36] on the 4th and 5th December 1935, after a lapse of two years and 9½ months from the original inoculation. As usual the observations were made and recorded for ten days. One animal escaped from the camp after the inoculation and could not be secured back. None of the animals excepting one [] showed any kind of reaction [1932-21 Puttlakki Male] and even this showed only a thermal reaction for two days on the 7th and 8th day. Out of the three bull calves kept as controls for this test with bovine virus two reacted. From the foregoing test it can be concluded that Goat-adapted Virus is capable of developing an immunity against Rinderpest of a fairly long duration, which is two years and 9½ months in this case.

Out of these 165 animals protected with Goat Virus, 113 were subjected to immunity tests so far, 17 have been sold,

11 died due to causes other than Rinderpest and 24 are still available in addition to those that are at cattle breeding station for future tests which will be taken up after a sufficiently long duration.

Nature of Immunity:—It is admitted that young calves do not form suitable subjects for immunisation against rinderpest. Montgomery [1915-16] says that calves under six months old do not get permanent immunity. Pool [1921] advocates that calves under nine months old should not be inoculated by Serum Simultaneous method. D'Costa and Balwant Singh [1933] conclude from their experiments that calves under four months old are considered of little practical value and better results are obtained if the virus inoculation is repeated 12 to 18 months after the Serum Simultaneous inoculation and opine that 4 years is the maximum test period of immunity produced by Serum Simultaneous inoculation.

Age appears to play a prominent part in assessing the type and duration of immunity. Srikantaiah [1935] records, while conducting some immunity tests on animals protected by Serum Simultaneous method of inoculation, that with increasing age, at the time of inoculation, a decrease in the severity of reaction is noticed to the test dose. All calves below three years of age reacted, especially those that were under one year of age gave very severe reactions. This result confirms the observations of Banerji [1933] in recording the reactions obtained with a test dose of bovine virus after an interval to the extent of 31 months.

Duration of immunity obtained by goat virus does not seem to bear much of a relationship to the degree of reaction set up during the course of immunisation, especially in the case of adult cattle. It is observed that over 90 per cent. of the animals aged below two years have reacted during immunisation with Goat Virus where as less than 50 per cent. of the adult animals have shown mild reaction only. But on immunity test all of them whether reacted to goat virus or not did not evince any sort of reaction to the test dose after intervals of three weeks, six weeks, eight months and 2 years and 9½ months.

One significant feature is that animals aged below three years protected by Serum Simultaneous method as recorded by Srikantaiah [1935], show a certain amount of reactions to the test dose, while those protected with Goat virus when put to test with bovine virus did not show any kind of reaction. This, if confirmed by other workers will go a long way in enhancing the value of immunisation with Goat Virus over that with the Serum simultaneous method of protection.

Sterling [1933] tested some animals protected with Goat Virus after an interval of over one year and found the animals immune. Haddow [1934] records the immunity tetes after an interval of two years with good results. So far our tests are concerned the longest period recorded is 2 years and 9½ months after inoculation with Goat Virus,

Summary.

1. 1 Immunisation of 213 head of Amrit Mahal cattle with Goat Virus alone was conducted with encouraging results and observations on 165 animals were recorded.

2. Calves below two years of age showed severe reactions with Goat Virus alone inoculations whereas the adult cattle showed mild or no reactions.

3. The incubation period was shorter and the febrile period longer among the young calves [aged 1 year and below] than amongst the adults.

4. Duration of immunity does not necessarily depend upon the degree of reaction set up by inoculation with Goat Virus.

5. A more solid immunity appears to result in cattle after the Goat Virus inoculations than after Serum Simultaneous method of inoculation, as evidenced by the comparison of the reactions produced by both the methods of protection (Serum Simultaneous and Goat Virus alone).

6. 113 animals were subjected to immunity test after Goat Virus inoculations in four batches at intervals of 3 and 6 weeks,

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8 months and 2 years and 9½ months. All the animals proved to be immune to withstand against a fatal dose of Rinderpest Bovine Virus.

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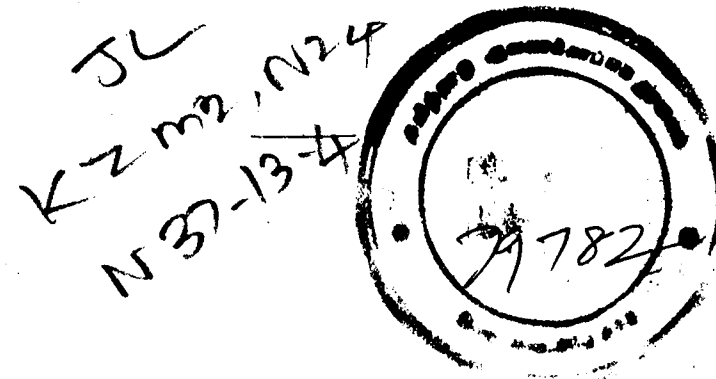


TABLE I.
Immunisation of Amrit Mahal Cattle with Goat Virus alone and the result of immunity test with Bovine Virus

BATCH I

Serial No.	Description of animals		Date of inoculation with goat virus.	Age at the time of inoculation.	Reaction		Date of immunity test.	Interval between inoculation and immunity test.	Reaction - Result.
	Name	Sex	Year brand and No.	Years	Kind of reaction	Highest temperature and day			
1	Mali	Female	1928—3	5 Years	Thermal	103.4° F. (7th day)	13-3-1933	Three weeks	Mild thermal reaction—Immune.
2	Mangy	"	" — 7	"	"	105.4° F. (4th day)	"	"	Negative Immune.
3	Narasi	"	" — 11	"	Mild thermal	102.8° F. (6th day)	"	"	"
4	Kariyakka	"	" — 15	"	"	103.4° F. (8th day)	"	"	"
5	Belligeje	"	" — 18	"	Not appreciable	"	"	"	"
6	Paradesie	"	" — 20	"	Thermal	103.2° F. (7th day)	"	"	"
7	Narasi	Male	1929—2	4 Years	Thermal	104.4° F. (6th day)	"	"	"
8	Mangy	"	" — 6	"	Not appreciable	"	"	"	"
9	Chunchunakote	Female	" — 8	"	Thermal	104.0° F. (8th day)	"	"	"
10	Mangy	"	" — 21	"	Negative	"	"	"	"
11	Mangy	"	" — 12	"	Not appreciable	"	"	"	"
12	Akma	"	" — 16	"	Mild thermal	103.8° F. (7th day)	"	"	"
13	Gulaganji	"	" — 18	"	Negative	"	"	"	"
14	Thimka	"	" — 23	"	Mild thermal	103.6° F. (7th day)	"	"	"

15	Nandbari	"	" — 26	"	Thermal	103.8° F. (7th day)	"	"	"
16	Nadujanea	Male	" — 32	"	Not appreciable	"	"	"	"
17	Royal Devi	"	" — 33	"	Negative	"	"	"	"
18	Koneri	"	1930—1	3 Years	Thermal	105.4° F. (7th day)	"	"	"
19	Sidala Mari	"	" — 3	"	Irregular recording and not appreciable.	"	"	"	"
20	Rangiri	Female	" — 5	"	Not appreciable	"	"	"	"
21	Hole Raya	"	" — 7	"	"	"	"	"	"
22	Nidrabhogi	"	" — 30	17-2-1933	Mild thermal	103.2° F. (5th day)	"	"	"
23	Jog-bhori	"	" — 11	18-2-1933	Not appreciable	"	"	"	"
24	Belli-gaje	Male	" — 15	"	Irregular recording	"	"	"	"
25	Kurudabasavi	Female	" — 24	"	Thermal	103.8° F. (4th day)	"	"	Mild thermal, Vesicles in the mouth
26	Bidare	"	1931—1	2 Years	Thermal	104.8° F. (4th day)	"	"	mild thermal
27	Mandala agiri	"	" — 6	"	Not appreciable	"	"	"	Negative
28	Gunavanthe	"	" — 10	17-2-1933	Thermal	104.2° F. (4th day)	"	"	"
29	Chunchunkote	"	" — 13	"	"	104.8° F. (4th day)	"	"	"
30	Akma	"	" — 15	"	"	104.8° F. (5th day)	"	"	"
31	Koneri	"	" — 17	"	"	104.8° F. (5th day)	"	"	"
32	Davagiri	"	" — 24	18-2-1933	Negative	"	"	"	"
33	Nandibasvi	"	" — 26	17-2-1933	Thermal	105.0° F. (5th day)	"	"	Mild thermal, 103.0° F. (10th day)
34	Kadiri	"	" — 30	"	"	104.6° F. (5th day)	"	"	Mild thermal, 103.4° F. (8th day)

TABLE I—(Continued).

Serial No.	Description of animals		Year brand and No.	Date of inoculation with goat virus.	Age at the time of inoculation.	Reaction		Date of immunity test.	Interval between inoculation with G. V. and immunity test.	Reaction -Result.
	Name	Sex				Kind of reaction	Highest temperature and day.			
35	Chunchunagiri	Female	1931—30	18-2-1933	2 Years	Thermal	104.8° F. (4th day)	13-3-1933	Three weeks	Mild thermal 102.8° F. (8th day) Negative
36	Garudahanumi	"	" —35	17-2-1933	"	"	104.0° F. (5th day)	"	"	"
37	Balekai Siddi	"	" —45	"	"	"	104.6° F. (4th day)	"	"	"
38	Chunchunagiri	"	" —49	18-2-1933	"	"	104.4° F. (4th day)	"	"	Mild thermal 103.8° F. (8th day) —Immune. Negative Immune.
39	Nandibasavi	"	" —51	"	"	"	104.8° F. (5th day)	"	"	"
40	Papiga	"	1932—6	17-2-1933	1 Year	Not appreciable		"	"	Mild thermal " (102.8° F) 8th day Negative
41	Akma	"	" —7	"	"	Thermal Vesicles in the mouth.	104.0° F. (6th day)	"	"	"
42	Govin-daraya	"	" —12	"	"	Thermal	105.0° F. (5th day)	"	"	"
43	Gunavanthe	Male	" —17	"	"	"	106.0° F. (5th day)	"	"	"
44	Ratnagiri	"	" —18	"	"	Negative		"	"	"
45	Papiga	"	" —22	"	"	"		"	"	"
46	Kadiri	"	" —26	"	"	Thermal	105.2° F. (5th day)	"	"	"
47	Balekai Siddi	Female	" —31	"	"	"	104.2° F. (5th & 6th day)	"	"	"
48	Chickraya	"	" —45	"	"	"	105.4° F. (5th day)	"	"	Mild thermal 102.0° F. (8th day)

BATCH II

49	Akma	"	1928—9		18-2-1933	5 Years	Thermal	104.8° F. (7th day)	2-4-1933	Six weeks	Negative Immune
50	Belligundu	"	" —4		"	"	Not appreciable		"	"	"
51	Sivane	"	" —12		"	"	Irregular recording		"	"	"
52	Devagiri	"	1929—4		"	4 Years	"		"	"	"
53	Gowri	"	" —6		"	"	Mild thermal	103.8° F. (7th day)	"	"	"
54	Akma	"	" —16		"	"	"		"	"	"
55	Dymari	"	1930—8		"	3 years	Mild thermal	103.6° F. (6th day)	"	"	"
56	Chunchunakote	"	" —14		"	"	Irregular recording		"	"	"
57	Sanne	"	" —15		"	"	Thermal	104.0° F. (4th day)	"	"	"
58	Narasi	"	1931—3		"	2 Years	"	103.8° F. (4th day)	"	"	"
59	Savanji	"	" —17		"	"	"	104.8° F. (5th day)	"	"	"
60	Devagiri	"	" —53		"	"	"	104.4° F. (4th day)	"	"	"
61	Akma	"	1932—9		"	1 Year	"	104.4° F. (5th day)	"	"	"
62	Nirvani	"	" —13		"	"	"	105.0° F. (5th day)	"	"	"
63	Koneri	"	" —19		"	"	"	105.8° F. (5th day)	"	"	"

BATCH III

64	Akma	"	1928—9		"	5 Years	"	104.6° F. (6th day)	23-10-1933	Eight months	"
65	Mylari	"	" —15		"	"	Negative		"	"	"
66	Ranganatha	"	" —19		"	"	"		"	"	"
67	Devagiri	"	1929—6		17-2-1933	4 Years	Not regularly recorded		"	"	"

Serial No.	Description of animals		Date of inoculation with virus.	Age at the time of inoculation.	Reaction		Date of immunity test.	Interval between inoculation with G. V. and immunity test.		Reaction -Result.
	Name	Sex	Year brand and No.		Kind of reaction	Highest temperature and day.				
68	Gowri	Female	1932-11	18-2-1933	4 Years	Negative	23-10-1933	Eight months	Negative	Immune
69	Jogabori	"	" -16	"	"	Thermal	103. 6° F. (8th day)	"	"	"
70	Chickraya	"	" -21	"	"	Not appreciable	"	"	"	"
71	Muthaide	"	" -24	"	"	Thermal	104. 8° F. (6, 7 & 8th day)	"	"	"
72	Hanumi	"	" -32	"	"	Negative	"	"	"	"
73	Putch-andu	"	1930-8	17-2-1933	3 Years	Thermal	103. 6° F. (5th day)	"	"	"
74	Ranganatha	"	" -11	18-2-1933	"	"	104. 2° F. (7th day)	"	"	"
75	Gowri	Male	1930-21	"	"	Not regularly recorded	"	"	"	"
76	Gowri	Female	" -28	"	"	"	"	"	"	"
77	Akma	"	1931-3	17-2-1933	2 Years	Thermal	104. 4° F. (4, 5, & 6th day)	"	"	"
78	Ramagiri	"	" -12	"	"	"	103. 8° F. (5th day)	"	"	"
79	Ramagiri	Male	" -18	"	"	"	105. 4° F. (5th day)	"	"	"
80	Nagare	"	" -21	"	"	"	105. 8° F. (5th day)	"	"	"
81	Putchandu	Female	" -31	"	"	"	(4, 5, & 6th day)	"	"	"
82	Kadiri	Male	" -36	"	"	"	104. 8° F. (5th day)	"	"	"
83	Sivane	"	" -41	"	"	"	105. 2° F. (4th day)	"	"	"
							105. 6° F. (5th day)	"	"	"

BATCH IV

84	Muthaide	"	" -48	"	"	"	106. 4° F. (5th day)	"	"	"
85	Sivane	Female	1932-11	"	1 Year	Not appreciable	"	"	"	"
86	Kadiri	"	" -20	"	"	Thermal	105. 8° F. (5th day)	"	"	"
87	Kadiri	Male	" -34	"	"	"	105. 8° F. (5th day)	"	"	"
88	Koneri	Female	" -42	"	"	"	104. 0° F. (4th day)	"	"	"
BATCH IV										
89	Nadujane	Female	1938-5	18-2-1933	5 Years	Negative	4-12-1935	2 Years and 9½ months.	"	"
90	Hole Raya	"	" -10	"	"	"	"	"	"	"
91	Beladingalu	"	" -16	"	"	Not appreciable	"	"	"	"
92	Malika	"	1929-17	"	4 Years	Mild thermal	103. 4° F. (6th day)	"	"	"
93	Sivane	"	" -17	"	"	Thermal	104. 4° F. (7th day)	"	"	"
94	Battagiri	"	" -18	"	"	Negative	"	"	"	"
95	Chickraya	"	" -30	"	"	Mild thermal	103. 4° F. (6 & 7th day)	"	"	"
96	Govinda Raya	"	1930-14	"	3 Years	Observations not recorded as the animal escaped from the camp.	"	"	"	"
97	Devagiri	"	" -17	"	"	Negative	"	"	"	"
98	Nidrabhogi	"	" -22	"	"	"	5-12-1935	"	"	"
99	Narayani	"	1931-4	17-2-1933	2 Years	Thermal	104. 6° F. (3 & 4th day)	"	"	"
100	Sringaradande	"	" -11	"	"	"	105. 4° F. (5th day)	"	"	"
101	Nidrabhogi	"	" -22	"	"	"	105. 4° F. (5th day)	"	"	"
102	Namdhari	"	" -33	"	"	"	105. 6° F. (4 & 5th day)	"	"	"

Serial No.	Description of animals		Date of inoculation with goat virus.		Age at the time of inoculation.		Reaction		Date of immunity test.	Interval between inoculation with G. V. and immunity test.	Reaction -Result.
	Name	Sex	Year brand and No.				Kind of reaction	Highest temperature and day.			
103	Thinka	Female	1931—35	17-2-1933	2 Years		Thermal	104.0° F. (5th day)	4-12-1935	2 Years and 9½ months.	Negative Immune
104	Akma	"	" —38	"	"	"	"	105.0° F. (5th day)	"	"	"
105	Narasi	"	" —39	"	"	"	"	105.4° F. (5th day)	"	"	"
106	Chioktaya	"	" —45	"	"	"	"	105.8° F. (5th day)	"	"	"
107	Yanjarasiddi	"	" —47	"	"	"	"	104.8° F. (5th day)	"	"	"
108	Narayani	"	1932—13	"	1 Year	"	"	105.0° F. (5th day)	"	"	"
109	Putlakti	Male	" —21	"	"	"	Negative	"	"	"	"
110	Devakka	Female	" —24	"	"	"	Thermal	105.4° F. (5th day)	"	"	"
111	Papiga	"	" —25	"	"	"	"	106.4° F. (5th day)	"	"	"
112	Balekaisiddi	"	" —32	"	"	"	"	104.8° F. (5th day)	"	"	"
113	Komarathi	Male					"	"	"	"	"

Escaped from the camp, hence no observations could be recorded.

TABLE II.

Immunisation with Goat Virus. Dates of inoculation 17th and 18th, Feb. 1933.

Year Brand	Number of animals inoculated.	Age.	Highest temperature recorded.	Highest average temperature.	Numbers of reactors.	Percentage of reactors.	Remarks.
1928	18	5 Years	105.4° F.	104.0° F.	6	33 1/3%	
1929	36	4 "	104.8° F.	103.8° F.	16	44%	
1930	32	3 "	105.0° F.	103.6° F.	16	50%	
1931	51	2 "	106.4° F.	104.8° F.	47	92%	
1932	28	1 "	106.0° F.	105.0° F.	26	93%	

Two goats were maintained as controls. Both of them took the infection and exhibited typical syndrome of rinderpest.

TABLE III.

Immunity test of I batch of 48 animals.

A		Date of inoculation with Goat Virus.	Number reacted for Goat Virus.	Date of immunity test with Bovine Virus.	Interval between inoculation with G. V. and immunity test.	Result.	Remarks.
1928	6	18-2-1933	5	13-3-1933	Three weeks	No reaction-Immune.	
1929	11	"	6	"	"	"	
1930	8	"	8	"	"	"	
1931	14	"	12	"	"	"	
1932	9	"	8	"	"	"	

Three bull calves were maintained as controls for Bovine Virus. 2 calves took the infection exhibited typical symptoms of rinderpest.

Immunity test of II batch of 15 animals.

B		Date of inoculation with Goat Virus.	Number reacted for Goat Virus.	Date of immunity test with Bovine Virus.	Interval between inoculation with G. V. and immunity test.	Result.	Remarks.
1928	3	"	3	2-4-1933	Six weeks	"	
1929	3	"	3	"	"	"	
1930	3	"	3	"	"	"	
1931	3	"	3	"	"	"	
1932	3	17-2-1933	3	"	"	"	

Three buffalo calves and three bull calves were maintained as controls for bovine virus. 2 buffalo calves 2 bull calves reacted to rinderpest typically. The Virus from one of the calves (Control No. 5) was sub-inoculated at the Institute to 6 buffalo calves (Nos. 987 to 992) and all of them took the infection.

C

Immunity test of III batch of 25 animals.

1928	3	18-2-1933	1	23-10-1933	Eight months	"
1929	6	"	4	"	"	"
1930	4	17 & 18-2-1933	2	"	"	"
1931	8	"	8	"	"	"
1932	4	"	4	"	"	"

Three bull calves were maintained as controls for Bovine Virus, and two reacted typically to rinderpest.

D

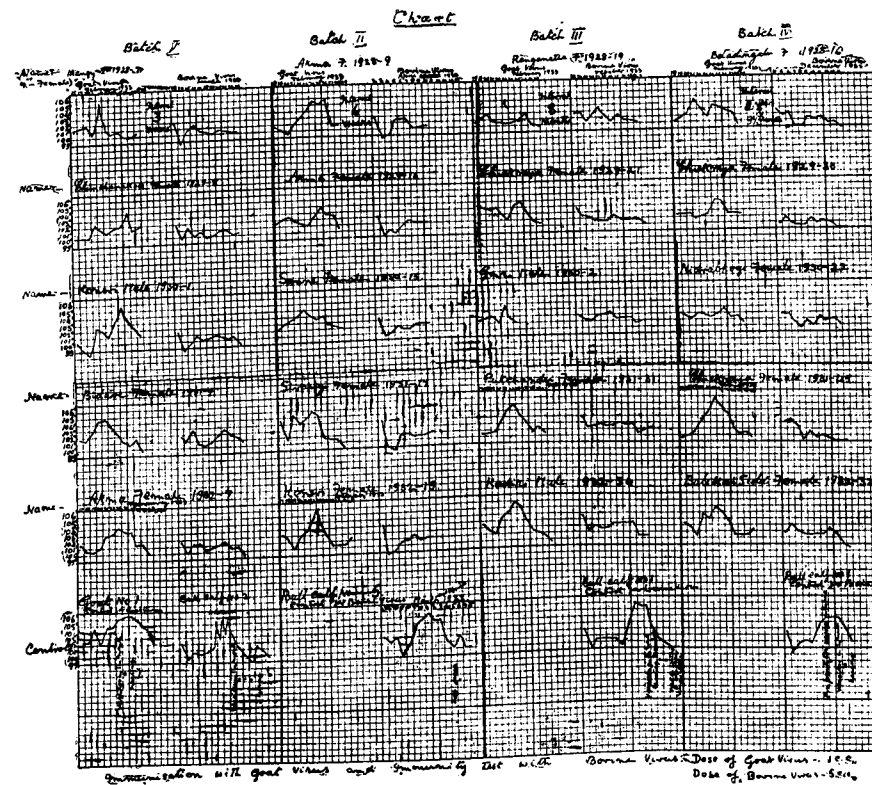
Immunity test of IV batch of 25 animals.

1928	3	18-2-1933	1	4-12-1935	Two years, nine months and fifteen days. (2 years & 9 1/2 months)	"
1929	4	"	3	"	"	"
1930	3	"	-	4 & 5-12-1935	"	"
1931	9	17-2-1933	9	4-12-1935.	"	"
1932	6	"	6	"	"	"

Observations of one animal could not be recorded as she escaped from the camp and could not be traced.

Three bull calves were maintained as controls for Bovine Virus and two calves took the infection and reacted typically to rinderpest.

Duration of Immunity in Amrit Mahal Cattle with Goat Virus.



Immunisation with Goat Virus and Immunity Test with Bovine Virus

Dose of Goat Virus—1cc.

Dose of Bovine Virus—5cc.

Clinical Articles.

A CASE OF INTESTINAL OBSTRUCTION IN A DOG.

BY

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A Grey hound, aged about three years, belonging to a well-to-do person, was brought to me on 20-8-1936, for treatment with the history that the dog was off feed for the previous three days, straining hard, passing only a few drops of blood several times a day. The owner also informed me that there was a tumour in the abdominal cavity. He had given once or twice large doses of castor oil with no result.

On examination, I found a hard movable mass as big as a fist having oval shape, behind the last rib on the right aspect of the abdominal floor. On moving the mass backwards and passing the finger through the rectum, I could only feel it enclosed in the lumen of the intestines. However, before deciding to do anything more it was recommended to be X-rayed.

The X-ray report showed that it was collection of masses of faecalites in Colon.

*The treatment adopted:—*The mass was well manipulated with the intention of breaking it, but it always moved as if it were one solid mass. Then an oil enema was given with high pressure and the dog was allowed to walk about. After about fifteen minutes, he vomited a large mass of faeces mixed with several pieces of stones, but nothing came out from the rectum other than the oil and water given in the form of enema. But the animal continued straining. On examining again, the lump appeared still harder but smaller in size. A dose of olive oil was given by mouth and another dose was advised in the evening. The animal was brought to me again next morning. The condition

remained the same excepting that a little liquid faeces came out each time the animal strained. On pushing the lump backwards, I could feel through the rectum a piece of bone. I managed to pull it out with the aid of forceps. The bone had a rugged surface with a tendency to disintegrate. It weighed about one ounce. After this two small pieces of bones and a small quantity of faeces came out. The dog felt much relieved. Liquid nourishment and a dose of liquid paraffin at night was recommended. The Animal became alright after a couple of days.

The point of interest in this case is how a big piece of bone escaped through the stomach and caused obstruction by giving rise to the formation of such a deceptive mass consisting of pieces of bones, gravel and faeces.

A STUDY OF SOME SHEEP DISEASES.

BY

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Since posted to this Institute where there is also breeding of sheep in practice, the following conditions in sheep were encountered:—

(1) *Bronchitis (suspected parasitic)*.—Ewe No. 1024, Case No. 1143 of 1934-35:—From 9-2-1934 the animal was ailing with cough of persistent, distressing and spasmodic nature. It was getting cough electuary and steam inhalations till the end of May 1934. As there was not the least improvement, it was suspected for parasitic bronchitis. Nasal discharge and sputum from the throat were however negative for ova of *Strongylus* species, when examined in this institute and the Madras Veterinary College. The animal was given the following intra-trachially twice with an interval of a week:—

Ol. Terebinth:	1 dr.
Ol. Olive	30 mms.
Chloroform	10 mms.
Acid Carbolic	10 mms.
Aqua	30 mms.

The first dose gave a satisfactory result i.e., the violence of the cough decreased and the second dose almost subsided the cough offering a great relief to the animal. Still, the animal was coughing occasionally when the seat of injection was palpated. Subsequently the ewe was found to be alright running about and grazing normally and gradually it put on condition also.

Again in 1935 March, cases exhibiting similar symptoms were noticed.

Ewe No. 803:	Case No. 1083.
Ewe No. 485:	Case No. 1084.
Ewe No. 46:	Case No. 1090.
Ewe No. 630:	Case No. 1091.
Ewe No. 709:	Case No. 1092.
Ewe No. 867:	Case No. 1093.
Ewe No. 58:	Case No. 1095.
Ewe No. 638:	Case No. 1096.
Ewe No. 932:	Case No. 1097.
Ewe No. 480:	Case No. 1098.
Ewe No. 494:	Case No. 1099.

All these immediately received an intra-trachial injection as in the case of ewe No. 1024. Four out of 11 recovered with one injection and the remaining two received a second dose to effect a complete cure.

(2) *Strongylosis*:—By this I mean wire-worm infestation (*Hæmonchus Contortus* and *Mecistocirrus Digitatus*) in the abomasum of sheep. This sets up varied symptoms such as off-feed, colicky pains, diarrhoea—simple or hæmorrhagic—, tympany, partial paralysis, fever and debility as seen in the following cases.

Ewe No. 890:	Case No. 520.
do. No. 940:	do. 592.
do. 793:	do. 593.
do. 6:	do. 594.

Examination of faeces from all these cases under microscope showed ova of *Strongylus* species.

Treatment:—These animals were dosed with 18 grains of copper-sulphate and 18 grains of mustard in 4 ounces of water, when symptoms of recovery were noticed. These were discharged cured, after a course of tonic powder.

As a preventive, all the sheep on the farm are being similarly dosed regularly three or four times a year now, and the number of attacks has decreased. Occasionally, however, stray cases of strongylosis do occur amongst them which are treated individually on the above lines.

(3) *Teniasis*:—*Ram No. 52, Case No. 1033*:—On 1—3—1935, it was reported that the ram was not grazing properly and used to sit down always. During examination it had giddiness, staggering gait and temperature 103.2°F. With a view to examine its dung for ova of internal parasites, the index finger was introduced in the rectum to get some droppings. When the finger was removed it was found that segments of tape-worms (*Monezia*-species) were sticking to it.

Treatment:—The ram was kept off-feed overnight. In the morning 20 grains of freshly powdered areca-nut (45 lb. live-weight of the ram) mixed with 4 ounces of cow's milk, was drenched. Two hours afterwards the ram purged a lot of tape worms. Next day onwards the animal was put on a course of tonic powder with sulphate of iron for a week and discharged.

(4) *Ascariasis*:—*Ram No. 52: Case No. 741*. On 11-12-1934, the animal was sent to the hospital with violent fits, panting for breath, profuse salivation and temperature 108.2°F.

Treatment:—To start with 10 grains of chloral hydras was administered by mouth mixed with treacle. By the evening the temperature came down to 103.6°F. and other symptoms were also lessened. Next morning the ram was able to stand up and suckle its dam. Examination of droppings showed under microscope, ova of ascaris. The animal was then dosed with:—

Ol. Chinapodium	...	20 mms.
Ol. Terebinth	...	1 dr.

Tr. Gingiberis	...	30 mms.
Ol. Recini	...	6 oz.

The ram purged some round worms: it was discharged after a week's course of tonic powder.

(5) *Intussusception of the bowels*:—*Ram No. 56: Case No. 740*. On 11-12-1934, this animal was sent to the hospital at about 10 A. M. It was very dull, unable to stand and had tympany. The temperature was normal. Symptomatic treatment was adopted and the animal died at about 2 P. M. On autopsy the abomasum was found to have contained plenty of fine sand and the small intestines were invaginated in three different places. (Specimen preserved in the hospital laboratory).

(6) *Gid*:—*Ewe No. 859: Case No. 638*:—On 1-11-1934, the ewe was admitted in the hospital with intense tympany and fever. Symptomatic treatment was adopted without any effect. Next day the animal resumed a recumbent position, the tympany and fever were still present. Gradually the animal's head was stretching high, champing of the jaws began with discharge of frothy saliva from the mouth and quivering of the eyes. On the morning of the 4th idem the sheep died and post-mortem examination was conducted. When the skull was opened, the meninges were found to be inflamed and a cyst with its inner surface studded with whitish granules as big as poppy seeds, was found to be imbedded in the right cerebral hemisphere. The cyst was suspected for *caenuris* and confirmed as such by the Principal of the Madras Veterinary College.

(7) *Coccidiosis*: *Ram No. 62 and 79: Case Nos. 777 & 819*:—These animals had diarrhoea with blood and mucus and the temperature was 104.6°F. Examination of the dung showed oocysts of coccidia and ova of strongylus species. So, on the first day the animals were dosed with copper sulphate and mustard, 18 grains each in 4 oz. of water and kept off-feed the whole day and night. Next morning the temperature came down to normal but the diarrhoea was still present. They were therefore given astringent mixture consisting of Pulvis Creta, Tr. Catachu,

Tr. Asafoetida, treacle and water, twice a day. The animals recovered and were discharged a fortnight afterwards.

The sheep pen was thoroughly disinfected by burning the litter and with cresol lotion and advised to colour the drinking water of the sheep to slightly pink, practically every day, with permanganate of potash. No further case occurred.

General.—It will not be out of place to mention here that during my tenure of office as Municipal Veterinary Officer, Ootacamund, (The Nilgiris) for nearly 12 years, where about 25,000 head of sheep are being slaughtered every year in the Municipal Abattoir, I have found a fair percentage of sheep's lungs and liver been infested with *echinococcus cysts* and a small percentage of similar infestations in the spleen. Besides these, other parasites viz., Trematodes in the rumen and liver, Schistosome species in the liver, Oesophagostomum Columbianum, Trichuris-Ovis, Tape-worm of Moniezia species in the digestive tract, Cysticerci Ienui Collis in the omentum and mesentery, parasitic cysts in muscle tissue and larvæ of cestrus-ovis in the nasal cavities are noticed in large numbers.

LOCALISED FORM OF COW POX AND ITS TREATMENT.

BY

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Veterinary Surgeon, Trivandrum.

During these two years of my private practice I happened to come across a good many cases of cow pox (localised form). The owners state regarding the history that the affected cows kick the milk men and do not allow them to milk the cows as the udder is badly affected with some sorts of sores and is very sensitive. Whenever I get such reports I go to the houses of the owners immediately and study whether it is a case of cow pox, foot and mouth disease or cracked udder.

Symptoms.—Condition good, on the udder particularly all around the teats, roundish vesicles containing a depression in the

centre are found. The calves of the respective cows are found to have such vesicles around their oral and anal parts and sometimes at the tip of the ears.

Diagnosis.—Localised form of cow pox.

Treatment.—

R/—

Acid Boric	Oz. ii
Acid Carbolic	m x.
Vaseline	Q. S.
M. Ft. Unguentum.	

Sig: Apply briskly over the affected parts and milk the cow.
Treat the calves with the same ointment as in the cow.

ACUTE MASTITIS—A SEQUEL TO VARIOLA IN BUFFALOES.

BY

RAM PARTAP. L. V. P.,

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Mastitis as a sequel to variola is not a common complication as far as I am aware, yet it would appear that neglect in treating cases of Variola may cause Mastitis rendering a part or whole of the udder functionless. I have had opportunities to treat a number of such cases successfully and give details of one case below:—

Subject.—A buffalo, aged 8 years, was brought to the hospital for treatment on 1-11-35.

History.—The buffalo was giving normal quantity of milk some five days before she was brought to the hospital. Within these five days her milk yield gradually went down till she stopped giving milk altogether. She would not even let her calf to suck. She evinced pain on palpating the udder.

On examination the following symptoms were found.—The general condition fair, appetite almost normal, bowels slightly

constipated, udder and three teats (both anterior and left posterior) were swollen, hot to the touch and had eruptions (pocks) thereon. The temperature of the animal was 102.2° F.

Treatment:—The treatment was commenced with a dose of saline purgative.

1. R/

Mag. Sulphas	Lb.	1
Ammon. Chloride	Oz.	1
Pot. Nitrates	Oz.	1
Aqua	Pt.	1 ss.
M. Ft. Haustus		
Sig: Give at once.		

followed by a course of:—

2. (i) R/

Pulv. Ginger	Oz.	1
Pulv. Mustard	Dr.	4
Black pepper	Dr.	4.
Sodii Chloride	Oz.	4.
Aqua	Pt.	1ss
M. Ft. Haustus		
Sig: Give in the evening.		

(ii) and Oz. 4 of Mag. Sulphas & Dr. 4 of Pot-Nitrates given daily in drinking water in the after-noons.

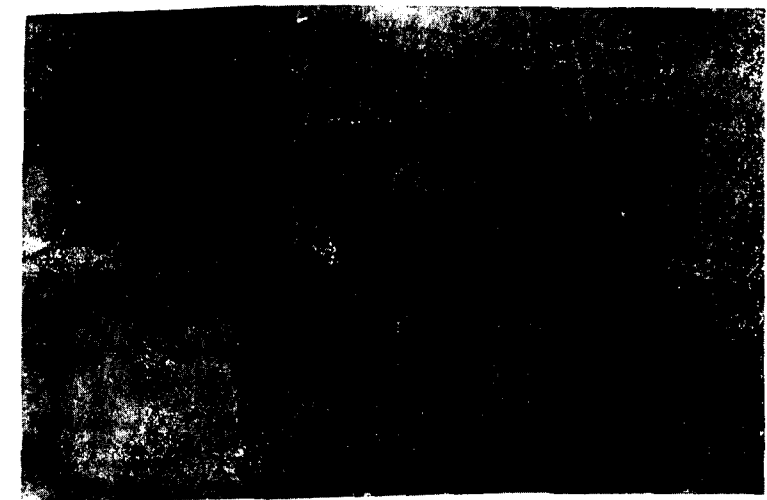
3. The inflamed udder and the teats were fomented with neem leaves decoction for $\frac{1}{2}$ an hour daily for three days.

4. The lesions were treated with the following ointment:—

R/

Powdered burnt 'shell' (seep)	Part I
Butter (well washed with water)	Parts 4.
M. Ft. Unguentum.	
Sig: Applied 2—3 times daily.	

5. As the external orifice of the teat canal of affected teats was closed up, due to the inflammation and the lesions thereat, it was opened by passing a sterilized teat syphon and the milk was removed. In order to keep the external orifices dilated and to avoid the frequent passing-in of the teat syphon the *thread bougies* soaked with Tincture of Iodine were introduced.



The Bougies.

Preparation:—Four inches of English twine is tightly twisted and then doubled. This is tightly twisted and doubled again. In this way one inch *thread bougie* becomes ready for use.

Application.

Half an inch of the thread bougie is introduced into the milk canal and half an inch (the loose portion) of it is allowed to remain outside, as shown in the illustration.

The *thread bougies* were changed morning and evening for four days. At the end of this period milk could be drawn as in normal conditions.

The buffalo was discharged cured on the tenth day of her admission into the hospital.

Conclusion.

I have adopted this line of treatment in several cases of mastitis and stenosis of external orifice of milk duct with success.

ALBINISM IN BUFFALOES.

BY

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Albinism is a congenital absence of pigment, which may be complete or partial. In complete albinism amongst human beings pigment is not only absent from the skin, but also from the hair, irides, and choroids; its subjects are called albinoes. The skin appears white or pinkish, and the hair on the part is soft, silky and whitish, or it may have a yellowish tinge. There is intolerance to light, hence the pupils are generally found contracted. This is an antithesis of melanism which is also believed to be hereditary or congenital. According to McFarland (1904) Leukoderma or absence of pigment from the skin, is seen in its most marked and most typical form in the congenital and occasionally hereditary affection known as albinism or congenital Leukopathia. Albinism is, as a rule, universal absence of pigment in the skin. Partial albinism is, however, occasionally observed. Acquired leukopathia is known as vitiligo.

Partial or total albinism is seen in almost all the species of domesticated animals. According to Gray partial or total albinism of the iris in the horse is well known. It is also met with in dogs, especially in Great Danes, in the Siamese cat and in the white Persian cat with blue eyes, in Arkwright or Merlecollie, in goats, and in pigs. Albinism of the choroid is not rare in horses, in the tapetum nigrum which assumes a brick red tint easily illuminated with the ophthalmoscope. It is believed that albinism in dogs and cats is often associated with deafness.

Amongst buffaloes complete albinism is rather rare, but partial albinism particularly of irides is a very common condition.

The irides may be partially albinotic or completely, and the skin may be depigmented in patches. The patches of albinotic area on the skin are commonly met with on muzzle, head, udder and legs. The condition is always congenital and may be hereditary. The irides are bluish around the pupils and the outer part is milky white due to lack of pigments. The animals do not seem to be photophobic as much as in human beings. It has been observed that no correlation exists between partial albinism and deafness in buffaloes. The buffaloes with one or both irides albinotic or wall-eyed have normal hearing.

Some terms are commonly used locally to describe the condition of albinotic eyes in buffaloes. A buffalo with both irides albinotic is called *Billi* and with one iris depigmented is known as *Chakri*, which is regarded inauspicious.

Three hundred and ninety two buffaloes were examined in the different localities of Lahore and the following table shows the percentage of buffaloes with one or both albinotic eyes.

Table. 1

No. of buffaloes examined.	No. of buffaloes with one eye albinotic.	No. of buffaloes with both eyes albinotic.
392	28	150

It appears from the table that the percentage of buffaloes with albinotic eyes is 45. 4.

References.

- Gray, H. (1925) *Nicolas Ophthalmology translated and enlarged* 290.
McFarland, J. (1904) *Text book of Pathology*, 572.

DIAPHRAGMATIC HERNIA IN A BITCH.

BY

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The patient, an Alsatian bitch, aged three years, was brought to the Veterinary Hospital, Sydney University, on 19th March 1936 (Case No. 765/36).

History:—The owner had reared the animal since a pup. It had always enjoyed good health, was always in good condition, and had suffered no serious illness at any time previously. Ten days prior to admission to hospital the bitch had shown loss of appetite, slight pains in the abdomen, which increased in intensity after eating. Three days afterwards the animal was given a pill (the constituents of which were unknown) by a local registered veterinary surgeon, together with a dose of medicine (also of unknown composition) and an enema. About twenty minutes later the animal vomited a very thick yellowish-green, gelatinous mass. For the succeeding seven days at the end of which time the animal was brought to the hospital, the bitch constantly refused any tempting food offered. Abdominal pain was evinced, particularly when the animal lay down and when attempting to defæcate.

Examination:—The general condition was found to be poor, but there was no gross emaciation. The abdomen was somewhat tense and showed slight pain on palpation in the region of the liver. This, however, was not a constant symptom. The animal was listless and took little heed of the palpation and handling to which she was subjected. The visible mucous membranes were somewhat pale. The urine was normal and the faeces, though scanty, were normal. The temperature on admission was 102° F., the pulse 80 per minute and weak. The respirations were 34 per minute. The type and character of the

respirations was the most diagnostic feature. Some dyspnoea was present. Inspiration was made with an effort and was markedly augmented by tension of the muscles of the flank. Expiration was accompanied by marked contraction of the chest (in an effort to reduce the amount of residual air). Intestinal sounds could not be heard in the thorax, but a dull percussion note was obtained about the middle of the left thoracic wall. Though the animal was not a good subject on account of timidity, there was obtained no evidence of abdominal pain on palpation, either when narcotized (with morphia gr.i) or otherwise. During the subsequent days following admission to hospital the temperature of the patient remained constant at about 102°F and the type of respiration did not alter in character. Food was refused, though gruel, broth, milk, etc., were offered. The animal vomited frequently during the night and immediately after food was forced down the oesophagus.

Diagnosis:—The inability to retain food in the stomach led one to believe that a foreign body might be present. But, whereas this could explain the frequent occurrence of vomiting, it could not account for the peculiar type of respiration, unless it was a sharp penetrating foreign body which had passed through the stomach wall and had become lodged in the diaphragm, which could cause pain on any attempt at respiratory movement, and hence the type of respiration observed. However, abdominal palpation revealed no pain. The possibility of a diaphragmatic hernia being the cause of the condition was supported by :

1. The type of respiration.
2. The absence of evidence of pain in the abdomen on palpation.
3. The vomition which might be due to the altered position of the stomach.
4. The dull percussion note about the mid-thoracic region on the left side. .

X-ray examination after a bismuth meal was not undertaken.

Treatment:—Glucose enemas were administered in an attempt to maintain the animal's strength. The concentration of the enema used was a 5 per cent solution of glucose in normal saline, given 2 drachms four times daily at body heat. Such mild laxatives as *Paraffinum Liquidum* and other medicants could not be retained in the bitch's stomach, and at times even the attempts at dosing stimulated the animal to vomit.

Course:—The animal daily became more and more depressed. On the eighth day after admission she was found dead.

Post Mortem Findings:—On the mucous membrane of the caecum several small ulcers about 3 mm. in diameter were found and a general diffuse enteritis was present. The liver was congested and friable. A hernia was found in the diaphragm in region of the oesophageal opening, with a portion of the stomach protruding through the opening, which was slit-like about two inches long and with edges thickened by fibrous tissue. Acute gastritis was evident.

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Association News.

ASSAM VETERINARY GRADUATES' ASSOCIATION.

Proceedings of the Fourth Annual Conference held at Gauhati on 28th and 29th December, 1936.

General Section. Date—28th December, 1936.

President.

MR. ROHINIKUMAR CHOWDHURI, B. L.

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10. Mr. B. G. Halder, 11. Mr. F. C. Bhuyan, 12. Mr. H. C. Dey,
13. Mr. M. C. Das, 14. Mr. P. C. Pathak, 15. Mr. B. N. Talukder,
16. Mr. B. Doudga, 17. Mr. A. Zaman, 18. Mr. A. Ahmed,
19. Mr. G. C. Das, 20. Mr. U. Nabindro, 21. Mr. H. K. Nag Choudhuri.

Several other members were present by Proxy. Notables Present included.

1. Rai Bahadur Mahendra Mohon Lahiri
2. Sreejut Pampu Singh, Rtd. E. A. C.
3. " B. P. Duarah " "
4. " J. Bujarbarua " "
5. Mr. G. P. Sen " Superintendent, Assam Vety. Dept.
6. " Sarat Chandra Chatterjee, Professor, Cotton College.
7. " Rabindra Nath Das, " " "
8. " Indu Bhushan Sarker " " "
9. " K. B. Shome, Asstt. Registrar, Co-operative Societies.
10. Rai Sahib S. C. Ghosh, Superintendent, Assam Vety. Dept.

Welcome Song was sung by three little girls.

Mr. Bhudar Chandra Chatterjee, Chairman, Reception Committee read his address. (appendix I).

Mr. J. Barooah, Bar-at-Law, Principal, Earle Law College declared the conference open with a speech (appendix II).

Mr. F. Ahmed proposed Mr. Rohini Kumar Choudhuri to preside over the conference, Mr. A. M. Das seconded it which was approved by all. Mr. Rohini Kumar Choudhuri occupied the chair amidst acclamation.

Mr. U. Nabindro, Secretary of the Reception Committee, read the telegrams and letters of well-wishers received from the members and other gentlemen who were unable to be present at the conference for unavoidable reasons.

THE NAMES OF SOME OF THEM ARE:—

1. Hon'ble Dr. W. L. Scott, C.I.E., I. C. S., Member of the Assam Executive Council.

2. Colonel C. E. Palmer, I.C.S., Inspector General of Civil Hospitals and Prisons, Assam.

3. Captain R. E. Peel, Private Secretary to H. E. the Governor of Assam.

4. Mr. J. C. Higgins, I.C.S., Commissioner, Assam Valley Division.

5. Rev: J. J. M. Nicholas Roy, B.A., Shillong.

6. Rai Sahib Ratneswar Das Gupta, Mangaldai.

7. Mr. Girish Chandra Ghosh, Gauhati.

8. Dr. Pratap Narayan Choudhury, (now Rai Sahib) Nalbari.

Dr. P. C. Dutt, read the General Secretary's report for the period ending 31st Oct. 1936. (appendix III)

The President then delivered his illuminating address. (appendix IV).

From amongst the audience the following gentlemen then took the floor to address the gathering.

- | | |
|---|----------------|
| (a) Dr. K. C. Sarman. | } (appendix V) |
| (b) Dr. P. Singh, Rtd. E. A. C. | |
| (c) Dr. G. S. Das. | |
| (d) Rai Sahib S. C. Ghosh, Superintendent, Civil Veterinary Dept., Assam. | |

The following Resolutions were then considered and adopted.

Resolutions :—

1. This Conference of the Veterinary Graduates' Association of Assam expresses its deep sorrow at the sad demise of our beloved King Emperor George V.

Proposed by Mr. A. M. Das,
Seconded by Mr. U. Nabindro,
Carried unanimously all standing.

2. The Conference of the V. G. Association of Assam mourns the loss of our beloved colleagues, Late Messrs. R. M. Baruah, S. C. Das Gupta, G. C. Deb and J. Das Gupta at their premature death.

Proposed by Mr. H. C. Day,
Seconded by Mr. A. Zaman,
Carried unanimously.

3. This Conference of V. G. A. of Assam conveys its heartiest congratulations, best wishes and most loyal regards to our King-Emperor George VI.

Proposed by Mr. M. C. Das,
Seconded by Mr. S. A. Haque,
Carried unanimously.

4. Resolved that this Conference offers its respectful thanks to Their Excellencies the Viceroy and the Governor and other official and non-official gentlemen for their personal interest in cattle welfare of this province.

Proposed by Mr. S. Deka,
Seconded by Mr. G. C. Das,
Carried unanimously.

5. Resolved that this Conference do approach the Governor with the prayer that the Veterinary Assistant Surgeons should be recognised as "DOCTORS" and should be addressed officially as such, as has been done in the case of Sub-Assistant Surgeons in this province and the Veterinary Assistant Surgeons in some other provinces.

Proposed by Mr. U. Nabindro,
Seconded by Mr. K. P. Bhattacharya,
Carried unanimously.

6. In view of the earnestness adopted by the Local Government and the public for the improvement of the Local cattle and in view of the fact that without extensive and efficient Veterinary aid such improvement cannot be achieved, this Association urges the Government of Assam to give immediate effect to the following :—

- (a) The number of the Veterinary Assistant Surgeons should be increased as recommended by the Linlithgow Commission viz. One V. A. S. for each 25,000 cattle.

- (b) Each Veterinary Dispensary and Hospital should be provided with adequate up-to-date reference books.

- (c) Each Veterinary Inspector should be provided with the up-to-date professional Journals for record in their offices and use in their respective Circles.

- (d) Each Veterinary Dispensary and Hospital should be provided with trained Compounders for assisting the V. A. Surgeon in his routine type of work so that the V. A. Surgeon may utilise the time saved in advanced Veterinary works.

Proposed by Mr. P. C. Dutta,
Seconded by Mr. B. C. Das,
Carried unanimously.

7. Resolved that the arrear subscriptions of the defaulting members be written off.

Proposed by Mr. N. N. Dutta,
Seconded by Mr. P. C. Pathak,
Carried unanimously.

8. This Conference of V. G. A. of Assam respectfully urges the Government to provide the V. A. Surgeons with rent free quarters or actual house rent in lieu of the quarters as in the case of the officers of the same status and responsibility of some other departments

Proposed by Mr. F. C. Bhyan,
Seconded by Mr. B. Doudga,
Carried unanimously.

9. Resolved that the Reserve V. A. Surgeons should be allowed the special pay even when they are at Head Quarters.

Proposed by Mr. A. Zaman,
Seconded by Mr. B. N. Talukdar,
Carried unanimously.

10. This Conference urges the Government to fix the Travelling Allowance of the V. A. Surgeons at Rs. 30/- per month—the number of tour days to be calculated at the end of the year at the rate of 15 days per month on an average.

Proposed by Mr. A. Das,
Seconded by Mr. A. Ahmed,
Carried unanimously.

11. This Conference expresses its gratitude to the Government of Assam for promoting 2 of the Graduates of the Indian Veterinary College as Administrative Head of the Civil Veterinary Department, Assam, The Conference further hopes that the arrangement be made permanent.

Proposed by Mr. P. Dutta,
Seconded by Mr. S. Deka,
Carried unanimously.

12. Resolved that the accounts submitted by the General Secretary be accepted.

Proposed by Mr. B. C. Das,
Seconded by Mr. F. C. Bhuyan,
Carried unanimously.

13. Resolved that this Conference draws immediate attention of the Government to Resolutions No. 4 and 12 of the 27th December 1926, of the 2nd Annual Conference of the Veterinary Graduates' Association, Assam.

Proposed by Mr. U. Nabindro,
Seconded by Mr. M. G. Rahman,
Carried unanimously.

14. Resolved that the following members be appointed office bearers till the next Conference of the Association.

President ... Mr. F. Ahmed	Members ... Mr. H. C. Sen
Vice-President ... Mr. U. Nabindro	Mr. P. C. Datta
General Secretary ... Mr. S. A. Haque.	„ S. Deka
Assistant Secretary and Treasurer	„ F. R. Hazarika
Mr. H. K. Nag Choudhuri.	„ B. C. Chatterjee
	„ M. C. Das
	„ F. C. Bhuyan

Proposed by Mr. A. M. Das,
Seconded by Mr. A. Ahmed,
Carried unanimously.

15. Resolved that the copies of the proceedings be sent to the Superintendent, Civil Veterinary Department and to the Local Government and with Professional Papers to the Veterinary Journals.

Proposed by Mr. C. Das.
Seconded by Mr. P. C. Pathak,
Carried unanimously.

16. Resolved that this Conference accords its hearty thanks to Superintendent, C. V. D. Assam, for kindly allowing the Gauhati Veterinary Hospital compound to be used for the purpose of this Conference.

Proposed by Mr. B. C. Chatterjee,
Seconded by Mr. P. Datta,
Carried unanimously.

Mr. H. C. Sen then proposed a vote of thanks to the Chair which was seconded by Mr. A. M. Das and unanimously carried.

The business of the day terminated with a closing song by three little girls.

PROFESSIONAL SECTION.

Date 29th December, 1936.

President Mr. H. C. Sen.

Owing to the absence of Mr. P. G. Pande, M.Sc., M. R. C. V. S., for unavoidable reasons Mr. H. C. Sen occupied the Chair.

After a neat little speech from the chair the following papers were read and discussed.

1. A case of poisoning similar to Ergot poisoning by Mr. S. Deka.
Discussion was opened by Mr. B. C. Das.

2. On the use of Goat Tissue Virus in Hill animals by Mr. U. Nabindro.

Discussion was opened by Mr. F. C. Bhuyan.

3. Camphor treatment in Anthrax cases by Mr. B. C. Das.

Discussion was opened by Mr. M. C. Das.

4. Iodine in case of Epileptic fit in a bullock by Mr. B. C. Das.

Discussion was opened by Mr. H. C. Dey.

5. A few cases of Turnside by Mr. S. Deka.

Discussion was opened by Mr. M. G. Rahman.

6. A foetus in the udder of a goat by Mr. F. C. Bhuyan Discussion was opened by Mr. H. K. Nag Chowdhury.

7. A brief note on the value of Arsenic in Nasal Granuloma by Mr. F. C. Bhuyan.

Discussion was opened by Mr. B. C. Das (appendix VII)

8. A case of extra uterine gestation by R. S R Laskar. For unavoidable reason the author of the paper could not attend the Conference. The paper was, therefore, read by Mr. A. Zaman, Discussion was opened by Mr. M. G. Rahman.

Mr. M. G. Rahman spoke on a Rickety Calf treated by him with 2 drams of Olive oil twice daily for a fortnight.

- (b) Surra with peculiarities in symptoms and reaction of Bayers 205 in both curative and prophylactic doses.

In all papers majority of the members participated in criticism and further elucidation. The President gave his valuable opinion on most of the papers.

Mr. F. Ahmed then proposed a vote of thanks to the Chair and also thanked the Delegates.

Mr. P. C. Dutta thanked those members of the Association, whose endeavour made this gathering possible after long years, and appealed to all the members to do their bit for the Association.

The President then declared the Conference closed.

APPENDIX I.

Welcome Address

By

BHUDAR CHANDRA CHATTERJEE,
Chairman of the Reception Committee.

GENTLEMEN AND BROTHER DELEGATES,

I have great pleasure to welcome you to the labour of the fourth Annual Conference of the Veterinary Graduates' Association, Assam, Assam. Gauhati, as you all know, is a historic city premier city of attractive natural grandeur with the mighty river Bramaputra washing its entire length. It is the chief centre of education, culture, and commerce in the province and is a place of holy pilgrimage attracting pilgrims from all over India. Gentlemen, I realise that I am not worthy of the honour and responsibility of receiving you here to-day, but I am sure that you will forgive any failing on my part.

The importance of a Department which deals with the chief assets—the cattle—of this Agricultural country can hardly be minimised. I believe there is none here who would question the greatest value of livestock. The members of a Department who are custodians of this valuable assets both in health and disease have, I believe, good reason to feel proud that they render an earnest and valuable service to contribute to the prosperity of the province. You are all aware that our present Viceroy, His Excellency Lord Linlithgow, appreciating the necessity of regenerating the degenerated stock of the country has already initiated sustained effort all over the country for proper breeding and feeding of the stock and also to provide sufficient and good milk to our badly nourished children and mothers. You also know that scourge of epidemics and other diseases from time to time sweep the stock which are indispensably necessary to provide nourishment to our children and stock from the scourge of the disease and to improve the stock does not only do the humanitarian duty but helps considerably to the economic uplift of the country.

What tremendous work is being done by the Veterinary Department in Assam with a limited staff at its disposal is perhaps known to you. If you look into the latest Annual Report of the Department you will be surprised to find that with a staff of only sixty Veterinary Assistant Surgeons the Department protected against diseases over one lac six thousand cattle and treated over one lac eleven thousand animals in a single year besides removing over twenty-five thousand weedy bulls from the field of breeding by sterilising them by bloodless method of castration. These officers visited as many as over eleven thousand seven hundred villages. I believe you would appreciate to what extent the Department has been rendering service to the public from the figures

just mentioned, Gentlemen, this is not all, The Department during the recent years has made considerable scientific advancement so that new methods of protecting cattle against Rinderpest, successful curative treatment of such fell diseases as Anthrax, Hæmorrhagic Septicæmia and Surra, etiological study of some of the common but damaging diseases have been worked out.

Gentlemen, it is needless to emphasise the necessity of increasing the technical staff of field workers *who form the backbone of the Department*. Unfortunately, however, adverse financial position stands in the way. The dual control of the Department by the Government and the Local Boards is also partly responsible for inadequate expansion of the Department. To our great regret the Department does not give reasonable scope of prospects to its officers. The only post of the Deputy Superintendent of the Department has practically been held in abeyance since the creation of the post. I believe there is no Department in this or any other province which goes without a Provincial Service Officer. The need of a Deputy Superintendent was never so great as it is to-day. It seems incredible that the Head of the Department whose responsibility stands equal to the head of any other technical Department should be given a salary which is hardly better than that of a selection grade Sub-Deputy Collector or a Sub-Engineer. To my mind the Department requires reorganisation and should offer prospect equal to that of other technical Departments. The number of Veterinary Assistant Surgeons who are the actual field workers needs to be immediately increased substantially if the ever-increasing public demand for Veterinary aid has to be properly met. I think you would all agree with me when I say that each Veterinary dispensary should be provided with a trained compounder. The necessity of a trained assistant to each Veterinary Assistant Surgeon to help him in preventive inoculation, castration work, and such other works was never so great as it is now. This is however, primarily a matter for the Local Boards in the province to give, their serious thought. The necessity of a Serum and Vaccine depot in the Surma Valley and also a Veterinary Laboratory there is keenly felt. The range of jurisdiction and nature of duty of the Veterinary Inspectors justify reconsideration for amelioration of their status. They should be given the same privilege of status as that of Deputy Inspector of Schools, Sub-Deputy Collectors, etc. As a matter of fact, this privilege was once enjoyed by the Veterinary Inspectors in the province. There seems to have been no good reason why the practice of gazetting the appointment, transfer, posting, leave, etc., of the Veterinary Inspectors should have been discontinued specially because the same privilege is enjoyed by officers who draw a less pay with less responsibility than the Veterinary Inspectors—a specific instance is the case of the Sub-Assistant Surgeons or Assistant teachers and Sub-Inspectors of Schools. This is a measure, if conceded, would remove the grievance but cost Government nothing.

Gentlemen, I have just said a few of the points as they occurred to me and I am sure the Conference will take up such questions as they think meet and proper. Before I resume my seat I should like to express thankfulness of the Service to the Government for their promoting

consecutively two of our worthy colleagues to the highest administrative post of our Department which both of them have so worthily held. It is gratifying that their life-long matured experience of Veterinary work and of the Department of the province have given them ample opportunity to prove their worth. This has proved beyond doubt that, given proper opportunity, the graduates of the Indian Veterinary Colleges stand equal with their colleagues from abroad.

Gentlemen, I thank you very much for the encouragement you have extended to the members of the Association by your presence here and I wish the Conference all success.

APPENDIX II. OPENING SPEECH

BY

J. BAROOHA ESQ.

Bar-at-law, Principal, Early Law College

GENTLEMEN,

I have been asked to open this Conference and I do not know why, but I am very glad to be with you. As the Chairman of the Reception Committee has said, agriculture and veterinary are akin to one another and they are like two sisters and so they cannot prosper without the help of each other. I am very pleased that you have asked me to speak on this occasion. I am glad to see three little girls here among the audience to-day. I hope they will learn to drink milk, more milk and good milk and to preach this doctrine among their playmates. In English and other newspapers lately you have been reading of 'Milk' and 'Milk Bars' and also that a 'Milk Bar' was put up in the Lucknow Exhibition because they have now realised the efficacy of drinking more milk. Drink more and more milk. It is seen now-a-days that when babies are born mothers cannot breast feed them simply because the mothers themselves did not have sufficient quantity of milk in their own younger days. We have to depend on artificial food which is not right, because mother's milk is our birthright. If we can't have mother's milk we must have pure cow's milk, England is a drinking country. There the people drink liquor almost everywhere. But they too have learnt to substitute milk for wine. Here in the map of India (as hung up on the post) you have seen that 'milk' has taken the shape of a backbone. Really 'milk' is the backbone of a country. If the backbone is weak the constitution is weak. If the children of the soil cannot get milk to drink then how can we expect that their constitutions will be strong.

We are very thankful to His Excellency the Marquess of Linlithgow who is now the present Viceroy, for his encouraging attention to the improvement of the cattle.

I do not want to proceed further as my friend Mr. R. K. Choudhuri, a hero of thousand platforms, is waiting. He is the gentleman who will preside here to-day. I am sure, under him, the Conference will be successfully carried on. I am a lay man and I do not want to deal with the technical portion of this Conference and you will get much more pleasure in hearing on Veterinary subjects if they come from the mouths of specialists and Mr. Chatterjee has already spoken about the matter.

I am sorry to find that members of the Veterinary Staff are not well paid considering the amount of work that they have to do. I hope this matter will receive the kind consideration of the proper authorities and the members will get better salaries.

I am very happy to find that the Veterinary Department of India has been able to introduce a new system of treatment for Rinderpest. This new system of treatment has been able to help the Government to save many thousands of rupees. The new system is the system of treatment by "Goat Virus". I do sincerely hope and pray that the savings may be utilised for the betterment and advancement of the hardworking officers and also for the improvement of our cattle. I was much amused to find in the dictionary that the 'Veterinary' means 'beasts of burden'. Even 'beasts of burden' require good pastures to carry on their work and cannot our own dear Veterinary Officers ask for better prospects? For indeed we are grateful to them. I wish the Conference every success.

Now, gentlemen, with these humble words I declare the Conference open.

APPENDIX III.

General Secretary's Report.

A Brief report of the working of the Veterinary Graduates' Association, Assam.

Mr. President and the members of the Veterinary Graduates' Association, Assam.

Before I start with the report I beg leave of you for a while to unveil a dark page in the history of our nation: Our beloved King-Emperor George the Fifth has been snatched away by the hand of Destiny soon after the ceremonial functions of Silver Jubilee of His Majesty's reign celebrated throughout the length and breadth of India. As a mark of homage to the departed soul may I appeal to the house to stand up for a minute praying to the Almighty Father to grant eternal peace and rest to the great soul that has passed away.

This Association with much pleasure and delight took the opportunity of conveying its heartiest congratulation to our beloved Prince of Wales who ascended the throne as Edward VIII King Emperor of India

and assured His Majesty of their best wishes and loyal regards, but man proposes and God disposes and His Majesty's reign which began with such high hopes and promise unexpectedly came to an end. It is a very painful news that our beloved King-Emperor Edward VIII formally abdicated the throne on the 10th day of December 1936. This nature of sacrifice made by him is unparalleled in the history of the world and it will be enshrined in the hearts of the people in golden letters. He has been succeeded by the Duke of York on the throne as George VI, King Emperor of India and to him again this Association conveys the same heartiest congratulations, best wishes and the most loyal regards as they did to his beloved brother. May his Majesty live long and reign over us in peace and prosperity.

It is a matter of great pleasure and gratification for the members of our profession in our Province, that Dr. P. C. Nag, G. B. V. C. is undergoing higher studies in the Munich University, Germany, and has thus paved the way for others to follow.

It is with a heavy heart and feelings of regret that I have got to make reference to the premature death of our beloved colleagues Messrs. S. C. Das Gupta, R. M. Barua, J. C. Das Gupta and G. C. Deb. The great loss we have sustained by their passing away has left a void in the rank of our profession which can hardly be filled up.

Two more points and I shall turn to matters concerning more directly the affairs of our Association. We have great pleasure in congratulating one of our colleagues Mr. Srish Chandra Chose whom the benign Government has honoured with the distinction of Rai Saheb in recognition of his brilliant services in the cause of the Veterinary advancement in the province, which recognition is the first of its kind in the department. One of our colleagues Mr. G. P. Sen has very recently retired after serving the Government faithfully and conscientiously. He entered the department as a Veterinary Assistant and with usual tact and energy rose to the position of an officiating Superintendent, Civil Veterinary Department, Assam. He has, thus, paved the way for others to be elevated to the same dignity.

You are all aware of the facts that your beloved Association commenced its career from the 25th December, 1925, and has now stepped into its 11th year, so to say, I rise to make a statement of the working of the Association and I hope to be excused for shortcomings on my part in this respect. I offer my cordial thanks to the members of the Association for the honour they have done me by electing me the General Secretary of their Association. I know full well there are persons much more worthy than my humble self to hold a responsible office like this which you have conferred upon me, yet I felt called upon to accept it from a sense of obligation and at the call of duty. I was confident that your valuable suggestion and advice would enable me to steer through many difficulties, financial and otherwise which stand in the way of conducting the affairs of the Association to a successful issue. I am to note here with regret that all my high hopes have been shattered owing to the lack of response, on the part of the members of the Association as a result of which the work of the Association has

come to a moribund condition. I appeal to the members with all the emphasis at my command to see that this Association is given a new lease of life through their renewed enthusiasm and hearty support.

From the minutes of the proceedings of the first Annual Conference of this Association you will be pleased to find how I loved the Association with all the warmth of my heart, what strenuous effort I had to make in co-operation with Rai Shaheb Srish Chandra Ghose in giving it a first start in the Province. You can easily gauge the feeling of those who took the initiative in the organisation with the full support and co-operation of all the members but who have to view it now with eyes full of sorrow because of its present condition, which is far from satisfactory. I may observe here in passing that some of our colleagues of the Brahmaputra Valley are striving to place themselves at the helm of affairs and straining every nerve to infuse new life into the dry bones of the Association. I wish them all success in their endeavours.

Gentlemen, I hope and sincerely believe that you will all join with me when I say that in conducting the affairs of the Association to a fruitful issue the important factors are whole-hearted combination and co-operation among us for the common weal and for the requisite financial assistance which, I am sorry to say, are entirely lacking. The reasons for general apathy towards the Association are best known to the members themselves. I believe that the members are under the impression that the Department is not keenly alive to the best interests of the profession and that it is no good joining hands with the Association which could not extract better results out of it. But I can assure you that with the growth of fellow-feelings and co-operation amongst the members of the profession the Association is sure to thrive and make progress in all directions. And this is only possible by the attainment of financial stability. While you complain of inadequate emoluments and prospects, your beloved Association is standing on the verge of collapse for want of funds without which no useful work can be attempted. May I, therefore, propose that in order to create a Reserve fund the existing rules be so modified as to make it binding on every member to make a voluntary contribution of Rs. 50/- payable in the course of 2 years by different instalments and by an imposition of an Annual subscription of Rs. 2/- for conducting the affairs of the Association. This would be the surer basis of bringing the Association to a better financial stability. Lastly with a view to placing it on a surer and sounder footing the Association ought to be linked up with the All-India Veterinary Association.

Lastly, I wish to draw your kind attention to another matter of vital importance for your serious consideration. I presume, you will quite agree with me that the Officers of the Veterinary Department as the custodians of the health of cattle which form the chief wealth of India not only help to add to the resources of the country but also contribute to build Indians into a nation of health and prosperity. Agricultural development in a country consisting of 80% agriculturists is of paramount importance for its prosperity. Although this had been acknowledged even by His Majesty the King-Emperor by the appointment of Royal Commission on Agriculture in India long ago, still the

recommendations of the said Commission have not as yet been acted upon. Since the assumption of the exalted office of Viceroyalty to this vast country by His Excellency Lord Linlithgow, rural development and livestock improvement have been receiving His Excellency's best attention. May it be the prime business of the coming office-bearers of the Veterinary Graduates' Association to move His Majesty's Government that the country cannot receive the full benefit of the scheme for the improvement of her livestock until and unless the sphere of activities of the Veterinary Department is enlarged so as to ensure a more thorough and extensive study of the livestock diseases and their remedies. The result aimed at by the activities of the Agricultural Department principally dependent on the co-operation of the Veterinary Department, cannot be achieved without the expansion of the Veterinary Department as embodied in the report of the Royal Commission on Agriculture in India, and every agriculturist, nay, every Indian, is eagerly looking forward for the day when it comes about.

It is with a heavy heart I am to note here that we are going to miss very shortly from our midst Sir Michael Keane C. I. E., K. C. S. I., I. C. S. who since his assumption of office as Governor of the Province, has been taking so active an interest in the welfare of the Province in every sphere and in that of the Veterinary Department in particular. We are, however, very glad and fortunate to welcome our Governor designate Sir Robert Neil Reid C. S. J., K. C. I. E., I. C. S. who as an Executive Councillor to the Government of Bengal has done a good deal for the uplift of the Agriculturists and I fervently hope that our Association will be able to convince His Excellency when he takes up office, of the immediate necessity of the expansion of the Veterinary Department in Assam for the benefit of the Agriculturists whose main stay is cattle.

Now I should like to call your attention to the various activities of this Association during the period under review :—

At the third Annual Conference of the Association held at Silchar on the 26th December 1927, an Executive Committee of 11 members was formed with Mr. S. Ghose as President, Mr. B. C. Chatterjee as Vice President, the writer of the report as General Secretary and Mr. N. N. Datta, Assistant Secretary and Treasurer and Messrs. H. C. Sen, B. Quader, A. R. Choudhury, S. N. Das and G. C. Deb as members.

When I took up the office of the General Secretary of the Association we had only 46 members on the roll. We have one enrolment since then against a few casualties which brought down the numerical strength to 44.

Only three meetings of the Executive Committee were held in the course of these long 7 or 8 years. The first meeting was held on the 26th February 1928, the second on the 29th September and the last on the 16th December 1928. The following items were discussed :—

i. The terms of the resolution No. 9 dated 26. 12. 1927 as adopted not being in conformity with facts were kept in abeyance till the next

general meeting and further a cordial sympathy was conveyed to Mr. R. M. Borua who was then suffering from ill-health.

ii. A resolution requesting the General Secretary to draft a memorial to His Excellency the Governor in Council, Assam, regarding the pay and prospects of the Veterinary Assistant Surgeons and the Veterinary Inspectors and to submit the same to the Executive Committee for transmission to proper quarters through the Superintendent, Civil Veterinary Department, Assam.

iii. A resolution requesting the General Secretary to draft a Memorandum to be submitted to the Hon'ble Minister in charge of Education with proposed deputation of Veterinary Graduates' Association, Assam, regarding the pay and prospects of Veterinary Assistant Surgeons and Veterinary Inspectors in Assam.

iv. A resolution in connection with the letter dated 21-2-28, from the General Secretary to the Hon'ble Minister for Education through the Superintendent, Civil Veterinary Department, Assam, for deferring the date of deputation for acceptance.

v. A resolution requesting the in-corporation of Professional papers at the third Annual Conference to be held back in view of small resources at the disposal of the Association and only the names of the writers with their subjects be sent to the press for insertion in the Printed Proceedings.

vi. A resolution requesting Messrs. S. Ghose and N. N. Dutta, the President and the Asst. Secretary of the Graduates' Association, Assam, respectively to be present in the next meeting when their letter of resignation was to be disposed of.

vii. A resolution sanctioning the T. A. Bills of the Deputationists who went to Shillong to wait upon the Hon'ble Minister in charge of Education on 6-8-1928.

viii. A resolution sanctioning the bill of the Manager, Cachar Press, for printing the minutes of the third Annual Conference and authorising the General Secretary for payment of the same.

ix. A resolution sanctioning the T. A. bill of Mr. P. C. Datta, Veterinary Asst. Surgeon, Hailakandi for attending the deputation which was to wait upon the Hon'ble Minister for Education at Silchar on 26-2-1928.

x. A resolution vesting the General Secretary with powers to charge actual T. A. for journey to Silchar in connection with the matters of Association.

xi. A resolution passing the account of the Association which was presented before the Committee by the General Secretary.

xii. A resolution requesting the Committee for appealing to the members to clear up their arrears.

xiii. A resolution authorising the General Secretary to submit a printed Memorandum on behalf of the Association to the Statutory Commission as drafted by the General Secretary at his earliest opportunity and to make payment of the printing charges of the said Memorandum to the Press concerned.

xiv. A resolution requesting the General Secretary to put up the letters of resignation of Messrs. S. Ghose and N. N. Dutta, the President and the Assistant Secretary respectively at the general meeting for consideration and in the meantime to request Messrs. Ghose and Dutta to withdraw their letters of resignation in the interest of the Association.

xv. A resolution appointing Mr. N. N. Sen to audit the accounts of the Association.

xvi. Messrs. A. R. Chaudhury and S. N. Das having signified their unwillingness to hold the next Annual Conference at Maulvibazar as previously arranged a resolution was adopted authorising the General Secretary to select a new place for the same.

Save and except the audit of accounts all other resolutions were passed unanimously and action taken.

It would appear from the resolution No. 4 of the 3rd Annual Conference that the deputation which was to wait upon the Hon'ble Minister for Education was deferred till the return of W. Harris Esqr. from Home and Mr. Ghose was requested to wait upon him on his return from leave which he did on 13-2-28. The interview lasted for 3 hours during which all questions were discussed at length. The Superintendent gave a patient hearing and promised sympathetic consideration of our grievances.

A second deputation waited on the Hon'ble Minister for Education with Mr. S. Ghose as spokesman accompanied by Messrs. S. M. Sen Gupta and B. Quader on 6-8-28, who pressed all matters embodied in the Memorandum. The interview lasted for over an hour and a half in course of which the Hon'ble Minister was pleased to hold out hopes of redress.

A memorandum was submitted on 30-12-28, by the Secretary of the Veterinary Graduates' Association, Assam, to the Indian Statutory Commission during their visit to Shillong for providing safeguards relating to the interests of the employees under the Department which might be affected by the inauguration of the coming Reforms.

A memorial was submitted to His Excellency the Governor of Assam by the General Secretary on 8-5-28, urging the necessity of improving the pay and prospects of the members of the profession.

As a result of various agitation on the part of our Association the benign Government of Assam, was pleased to change the official designation of Veterinary Assistants to Veterinary Assistant Surgeons as in other provinces and also granted a partial relief by the revision of scale of pay which is yet quite inadequate compared with the pay and prospects of other technical departments in the Province.

It will appear from the resolution of Executive Committee that the President (Mr. S. Ghose) and the Asst. Secretary (Mr. N. N. Dutta) tendered their resignation for reasons unknown, by which the Association has sustained a great blow. The Association owes a deep debt of gratitude to Mr. S. Ghose for bringing into existence the Association which has proved so useful to you and removing through his strenuous exertions, all the obstacles lying in the way.

Our thanks are also due to Mr. N. N. Dutta, the Asst. Secretary, who ungrudgingly placed his services at the disposal of the President whenever an occasion arose.

The Executive Committee decided to place letters of resignation tendered by Messrs. Ghose and Dutta before the general meeting and in the meantime requested the said gentlemen to withdraw the same if possible. Mr. N. N. Dutta was pleased to comply with the request while Mr. Ghose was adamant.

Now gentlemen, you can easily imagine the difficulties your Secretary had to face. Notwithstanding all these troubles, the Association has made immense strides in the path of progress and uplift so far as the interests of the members are concerned. Had it received active and financial support as expected better results might have been achieved.

Gentlemen, you are all aware that the office-bearers of this Association are stationed at different centres and they have not had the opportunities of meeting together occasionally to have free discussion on matters relating to the affairs of the Association. That is the reason why the Secretary was to select a locality where the largest number of office-bearers was available with the least inconvenience. Silchar was selected, therefore, as the proper place for convening the meeting of the Executive Body. Moreover Silchar happened to be the Head Quarters of your President, Vice-President, Asst. Secretary and Treasurer as well as of some of the members of the Executive Body. In the circumstances most of the office records as well as Remington Typewriter were kept there for the smooth working of the Association. But as misfortune never comes single, the general apathy of the members coupled with flood havoc of 1929, at Cachar had stranded the Association in a quandary. Many of the records became illegible and some were lost while the Remington Machine was greatly damaged and put out of order. It is very unfortunate that I have had to submit statements unsupported by records at my disposal. The letter of the Asst. Secretary and Treasurer of your Association (Mr. N. N. Dutta) giving a vivid description of the flood havoc of 1929, will speak for itself.

RECEIPT.		EXPENDITURE.	
	AMOUNT.		AMOUNT.
By the balance sheet for the session 1927 received from the General Secretary Mr. H. C. Sen		Postal stamps and telegrams	
(By Mr. N. N. Dutta	Rs. 47-3-3	T. A. for deputation ...	Rs. 64-8-6
Postal S. Bank deposit	„ 92-5-0	by P. C. Datta	
Interest on - do. -	0-14-9	Rs. 73-12-0 by N.N. Dutta	Rs. 112-12-0
Subscription from members :—		Rs. 39. ...	
By General Secretary	Rs. 143-0-0	Printing charges for the proceedings of the 3rd Annual Conference and the Memorandum of the V. G. A., Assam to the Statutory Commission, etc.	Rs. 84-8-0
By Asst. Secretary.	„ 39-0-0	Stationery	„ 6-14-0
Refund received from Mr. S. Ghose, spokesman of the deputation which waited on the Hon'ble Minister for Education at Shillong.	Rs. 12-12-0	Miscellaneous	„ 13-15-6
		Expenditure shown by Mr. H. C. Sen as per voucher when he handed over charge to Mr. N. N. Dutta	Rs. 47-3-3
			Rs. 333-12-3
		In the Postal Savings Bank Account	Rs. 3-3-9
		With the General Secretary	1-2-0
Total	Rs. 335-3-0		Rs. 335-3-0

1. The administration of Dilute Hydrochloric Acid and its efficacy in perforate palate, by Mr. P. C. Dutta G. B. V. C.
2. The value of Camphor in Hæmorrhagic Septicæmia and Anthrax, by Mr. N. N. Dutta, G. B. V. C.
3. Clinical cases :—Distokia, by Mr. L. R. Das, G. B. V. C.

time when it was looked upon as a mere luxury and the treatment of a vet, was considered far less efficacious than that of a village quack. It is a matter of great congratulation that by dint of your honest and devoted work you have been able to remove a good deal of the prejudice against you and villagers to-day search and look for you nearly as much as they do for treatment of human diseases. This is a good and promising sign but this is not enough. I wish you were not as handicapped in your work for want of funds as you are. If the Government of Assam could have spent on your department a little more than what they are doing now probably you could have shown to your credit much greater achievements in this province than elsewhere. Those who are interested in the public affairs and are working for the amelioration of the condition of the masses are convinced that they cannot succeed in their mission unless they with your assistance make the live-stock free from disease and save them from premature deaths. Really the improvement of the economic condition of our ryots is bound to be idle talks so long as we cannot take full advantage of your scientific aids in improving and preserving our cattle property. You are in a very delicate position to-day, you know that your assistance to the public has not been as effective as it should have been but you have no means to remove the difficulties in your way. On the other hand our village-folks have been also placed in sea. They are to-day looking more and more to your scientific aid because those of them who used to know medicine for treatments of animals are gradually disappearing. The situation is that in most cases they neither get the benefit of the modern nor of the old method of treatment. I believe, Gentlemen, that it is time that the Government gave more serious attention to the matter. This department must be either made more useful or the show must be finished. The doctrine of either mend or end—resorted to by certain schools of political thoughts does not apply more strongly to any other department of Government activities than to yours.

The latest scientific treatment against Rinderpest, I mean the Goat Tissue Virus Vaccination is showing wonderful results. Every ryot has right to expect that the benefit of this treatment should be made available to their cattle everywhere. But for want of a suitable number of hands you cannot really give assistance in all quarters where they are needed. On many occasions the Veterinary Surgeons can only come to rescue when a good deal of havoc has been already done. But if only this treatment could have been more easily and generally available in every nook and corner, I believe the department could have not only more than justified their existence but also would have been a source of great blessing. It is well-known that the Veterinary Assistant Surgeons constitute the only working employees of the department, others are only inspecting officers. The strength of the Veterinary Assistant Surgeons in Assam is now 60 or so but the cattle population according to Linlithgow Commission's report is 5,786,000 excluding sheep and goats and other animals. This means that there are over a lakh of cattle for each Veterinary Assistant Surgeon to treat for disease and inoculate or vaccinate against epidemics. This certainly is an impossible piece of work and the inevitable result of the state

of things is that our poor ryots lose their cattle which constitute their main asset. Every one must admit that the Veterinary Assistant Surgeons are really over-worked in Assam. Madras Veterinary Department had 274 employees year before last. Statistics however show that they treated 1131 animals and inoculated by serum Goat virus 532 animals per head. But in Assam last year the average work done by each V. A. S. was 1975 animals treated and 1623 animals inoculated by serum and Goat virus methods. Besides, there were over 25,700 castrations performed. This shows that the average work here is more than double the average done by each Veterinary Assistant Surgeon in Madras. Yet the Veterinary Department here could not achieve any tangible result from public point of view; and if the present state of affair continues the Vety : Dept : will never achieve anything to their credit. The Linlithgow Commission rightly suggested that there should be one V. A. S. for every 25,000 animals. If the Assam Government want anything out of the Veterinary service they must first of all increase the staff accordingly.

I think it is high time for the Government of Assam to formulate a 5 years or 10 years plan for the improvement of the department. In Bengal such a plan is in operation for which Rs. 50,000/- has been allotted from the contribution received from the Central Government for rural development. But the reply of the Government will be where is money? And that is an all baffling question. I may perhaps point out that Government spend much less on Goat virus than what they did on serum. Formerly serum worth about Rs. 20,000/- used to be purchased. Now only about Rs. 500/- is spent on Goat virus. The economy thus effected should have been more profitably used in increasing the strength of the service. Such a plan if can be adopted should in my opinion include the following amongst others.

(a) Increase of the strength of the Veterinary Assistant Surgeons to the proportion of 25,000 animals per head.

(b) Wholetime propaganda officers with full equipments for the purpose.

(c) Better equipment of the Veterinary Dispensaries and the Veterinary Hospitals. In Madras they have X-ray apparatus as well as arrangements for ultraviolet ray treatment. In Assam such a thing is yet a dream. But for accurate diagnosis and better and speedy treatment and control of the diseases, improvement of equipments is of urgent need.

(d) Control of diseases communicable to human being from the animals. For example the cause of Rabies in human being in cent per cent cases is due to bite or scratch from the Rabid animal. But there is no arrangement in the Department, to control it. Instances about Tuberculosis Anthrax, etc., may be cited.

(e) Milk and meat inspection. Milk and meat are carriers of diseases in many cases. But there is no departmental arrangement

to check it. The Veterinary Graduates by their qualification are better fitted for this work.

(f) Control of cattle movements from place to place. This is essentially necessary if spread of the diseases epidemic or otherwise is to be successfully checked.

Gentlemen, I am a lay man quite unfamiliar with your science. But I know this much that in you there is a great capacity of improving the hard lot of our agriculturists who are really the backbone of the country and who are feeding us. *With them we rise and fall.* You have driven them to a position in which they are helplessly looking forward to you for assistance. Their cattle is not so valuable as would enable them to pay for your rather expensive treatment. On the other hand if you do not enable them to utilise your valuable assistance, cattle can never be expected to improve in their value. The whole thing is moving in a circle. I do not know how the problem can be solved. Yours is the only department immune from top-heaviness. There is no room for retrenchment here as far as we can see. What is needed is rather more expenditure. If the principle of robbing Paul to pay Peter can be safely adopted anywhere I think it can be with reference to your department which should be improved even at the cost of some other department.

Gentlemen, I hope I have not been very pessimistic and I expect that nothing that I have said would curb your enthusiasm in any way. I trust you will carry on your noble work of research in the interest not only of your human brethren but also out of a deep sense of sympathy for our dumb and uncomplaining fellow creatures. The same Almighty Father who has created us all shall surely give us our due share of pleasure and happiness in this world. And let this thought encourage and succour you in performance of your duties. Your honest exertions must surely draw the attention of the public to your hard lot. And I close this poor address of mine with an ardent hope that time is perhaps not very distant, when you will be able to get your due return for the work that you do in the cause of humanity and God's creation.

APPENDIX V.

The following gentlemen then addressed the gathering.

(a) Mr. K. C. Sarman in the course of his speech spoke about the poor condition of our cows resulting in falling easy prey to diseases with fatal results. He also spoke about the poor milk yield of our cows.

(b) Mr. P. Singh, Rtd E. A. C., in course of his speech said, that not a month passed when he had not to send an animal to the Gauhati Veterinary Hospital for treatment and congratulated the staff for the keen interest taken by them. The result of treatment, however, was not in all the cases successful, but he attached no blame to the officers

as the patients were dumb and could not express their sensation and ailments. The cattle owners were also responsible to some extent as they could not provide sufficient food and attention to their animals.

He expressed satisfaction at the report of the Chairman of the Reception Committee about the improvements in treatment of diseases by scientific methods. He then dilated on the development of Veterinary science—how it started with the Egyptians and later was developed by Romans, French and the English and said that thereafter the Civil Veterinary Department was started in India. He then said that the ratio of work and the staff as reported by the Chairman of the Reception Committee was deplorable. The work was enormous and the staff was very poor in strength.

He added that Assam was an agricultural country with cattle as main stay for cultivation and expressed the hope that the staff should be increased with better pay so as to enable them to look after the care of every patient.

(c) Dr. G. S. Das in the course of his speech congratulated the members of the Association and said amongst other things that about ten years back he had occasion to be at Palasbari with the Veterinary Assistant. They were engaged in epidemic works in their respective spheres. Some other officers went there and they were made to make a move from the inspection Bungalow which was the only halting place there. He then said that they got no response from the villagers about their accommodation and had to stay at a far off place in a wretched house. That was the state of affairs then. Last year, he continued, he went to Chaigaon to attend to epidemic works and people often enquired of him about "Bhuyan Doctor" meaning Mr. F. C. Bhuyan, the local Veterinary Asst. Surgeon. That showed, he proceeded, that the Veterinary work made very good progress in gaining popularity. But he was surprised to find no Veterinary Dispensary between Goalpara and Gauhati... a distance of about 90 miles. He requested the President to urge the Government to have a Veterinary Dispensary at Chaigaon.

(d) Rai Saheb S. Ghosh, Superintendent, Civil Veterinary Department, Assam, in the course of his speech spoke about the important activities of the Department and convinced the audience about the progress, the Civil Veterinary Department has made in the matter of cure of animal diseases and improvement of the Local cattle.

BOMBAY VETERINARY MEDICAL ASSOCIATION.

Proceedings of the Annual General Meeting held on the 29th of December, 1936:—

The Annual General Meeting of the above Association was held at the Bombay Veterinary College on the 29th of December 1936, just after the Ninth All-India Veterinary Conference. There were nearly 40 members present.

The Annual Report of the Managing Committee submitted by the President was taken as read.

The Minutes of the last Annual General Meeting were read and signed.

Resolved that the following members be the office-bearers for the year 1937:—

Khan Saheb N. D. Dhakmarvala	...	<i>President.</i>
Mr. P. G. Date	}	<i>Jt. Hony. Secretaries.</i>
" J. G. Gokhale		
" V. N. Kulkarni		
" C. N. Desai	}	<i>Hony. Treasurer.</i>
" R. G. Sathe		
" D. S. Laud		
" H. B. Shirsathe and		
" P. C. Bapat.		
" M. K. Garudacharya	}	<i>Members of the Managing Committee.</i>
" A. G. Khair		
		<i>Hony. Auditors.</i>

A gold medal was awarded to Mr. Y. N. Marathe, the retiring Hony. Treasurer of the Association, in appreciation of his long and valuable services to the Association by the President Khan Saheb Dhakmarvala.

A vote of thanks to the President and the retiring members of the Managing Committee terminated the proceedings.

BOMBAY VETERINARY MEDICAL ASSOCIATION.

Balance-Sheet and Accounts of the Bombay Veterinary Medical Association from 1st June 1935 to 31st May, 1936:—

Receipts.		Expenditure.	
Opening Balance	Rs. 635-7-10	Travelling Expenses	Rs. 16-4-0
Life Member 1.	" 25-0-0	Printing Receipt	
New members for 1935 (33)	" 231-0-0	Books (5)	" 5-0-0
Rejoined Members (4)	" 8-0-0	Foolscap Stationery	" 0-8-0
Arrears from 1 member for 1931	Rs. 3-0-0	Postage	" 12-14-0
Arrears from 7 members for 1932	Rs. 14-0-0	Total	Rs. 34-10-9
Arrears for 1933 from 18 members	Rs. 36-0-0	Closing Balance	Rs. 1,173-14-1
Arrears for 1934 from 28 members	Rs. 56-0-0	Total	Rs. 1,208-8-10
Arrears for 1935 from 93 members	Rs. 186-0-0		
Interest	" 14-0-1		
Total	Rs. 1,208-8-0		

Checked and found correct.

A. G. KHAIR,

M. K. Garudacharya.

2-8-1936.

Y. N. Marathe,

Hony. Treasurer.

1-6-1936.

BOMBAY PRESIDENCY SUBORDINATE CIVIL VETERINARY OFFICERS' SERVICE ASSOCIATION.

*Proceedings of the Second Conference held in the Bombay Veterinary
College, Parel, on 30th December, 1936.*

Members Present.

Messrs.

1. P. V. Nagarsheth.
2. H. B. Sirsathe.
3. C. N. Desai.
4. M. N. Ronghe.
5. T. R. Khaladkar.
6. S. S. Patkoare.
7. J. Z. Kalal.
8. D. B. Sapre.
9. V. K. Chatuphale.
10. K. B. Trievedi.
11. R. B. Phadnis.
12. M. K. Zavery.
13. G. S. Balekundri.
14. N. G. Kulkarni.
15. N. I. Chopda.

Messrs.

16. M. K. Garudachar.
17. A. B. Agte.
18. Y. V. Limaye.
19. E. R. Kulkarni.
20. S. B. Hanchlikar.
21. P. C. Bapat.
22. V. B. Dinkar.
23. D. B. Sapre.
24. S. N. Nimbalkar.
25. A. C. Patel.
26. R. G. Pandya.
27. C. S. Desai.
28. R. R. Alur.
29. M. D. Vaishnav.
30. M. H. Bhat.

Besides the members mentioned above, Deputy Superintendent Mr. M. G. Kulkarni and the Deputy Director Mr. V. N. Kulkarni were also present.

V. R. Phadke Esquire, G.B.V.C., J. P., Principal, Bombay Veterinary College, was proposed to the chair in befitting terms by Mr. C. N. Desai and seconded by Mr. H. B. Sirsathe and he took the chair amid cheers.

Welcome Address was read by Mr. P. V. Nagarsheth, President of the Association.

Letters of sympathy expressing inability to attend but wishing success for the Conference were read.

Mr. M. N. Ronghe, Secretary of the Association read the report of the Association from the year 1931 to 1936 and it was unanimously adopted.

Mr. C. N. Desai, Treasurer of the Association read the Balance Sheet and Accounts of the Association from 1st April, 1931 to 1936, and it was unanimously adopted.

The following papers were read and discussed :—

- (1) "Cancer of horn" by Mr. S. M. Nimbalkar.
- (2) "Milk injection in skin diseases" by Mr. M. D. Vaishnav.

Bombay Presidency Subordinate Civil V. O. S. Association 399

The following resolutions were put before the Conference. They were discussed and passed unanimously :—

(1) That this Conference requests that a new selection grade of Veterinary Assistant Surgeons on Rs. 125-10-175 be created and fixed at 10% of the cadre and be designated as District Veterinary Officers and they may be furnished with Magic-Lanterns and Slides on Veterinary Science as future promotion chances to Inspector's post (which are only three) are very remote for 125 Veterinary Assistant Surgeons.

Proposed by Mr. C. N. Desai, seconded by Mr. S. B. Hanchlikar and passed unanimously.

(2) That this Conference requests that some experienced Veterinary Assistant Surgeons be engaged on Village Uplift Work one in each Division.

Proposed by Mr. P. C. Bapat, seconded by Mr. R. B. Phadnis and passed unanimously.

(3) That this Conference requests that a Post-Graduate Course be opened at the Bombay Veterinary College to freshen the Professional knowledge and every man in the Department be kindly given a chance to undergo the course after 10 years of service just as is done in the Medical Department.

Proposed by Mr. R. B. Phadnis, seconded by Mr. P. C. Bapat and passed unanimously.

(4) That this Conference requests to reconsider the question of House Rent Allowance to Reserve Veterinary Assistant Surgeons as it will cause a real hardship to the poorly paid Subordinates.

Proposed by Mr. G. S. Balekundri, seconded by Mr. S. N. Nimbalkar and passed unanimously.

(5) That this Conference requests the Director of Veterinary Services, Bombay Presidency, Poona, to reconsider the question of the charges for private practice and to please allow Rs. 2/- within Municipal area and Rs. 5/- outside, per visit.

Proposed by Mr. M. K. Zavery, seconded by Mr. E. R. Kulkarni and passed unanimously.

(6) That this Conference requests the Director of Veterinary Services, Bombay Presidency, Poona, to fix a tenure of 5 years for each Dispensary and 3 years at bad climate places.

Proposed by Mr. A. B. Agte, seconded by Mr. V. K. Chatuphale and passed unanimously.

The President, Mr. V. R. Phadke delivered a short speech thanking the Conference for selecting him as President of the Conference.

The following office-bearers were elected for the next year :—

Mr. P. V. Nagarsheth.	<i>President.</i>
Mr. H. B. Sirsathe.	<i>Vice-President.</i>
Mr. M. N. Ronghe.	} <i>Secretaries.</i>
„ S. S. Patkar.	
Mr. C. N. Desai.	<i>Treasurer.</i>
Mr. A. B. Agte.	} <i>Members of the</i>
„ M. K. Zavery.	
„ M. D. Vaishnav.	
„ E. R. Kulkarni,	
„ T. R. Khaladkar.	
„ G. S. Balkundri.	
„ K. H. Maniyar.	

A vote of thanks to the previous year's office-bearers was proposed by Mr. C. N. Desai and seconded by Mr. M. K. Zavery and was passed unanimously.

A vote of thanks to Khan Saheb Dhakmarwala, Chairman, and also to the members of the Reception Committee of the College Golden Jubilee Celebration Committee for making arrangements for the lodging and boarding of delegates was passed unanimously.

A vote of thanks to the Director of Veterinary Services, Bombay Presidency and also to the Principal, Bombay Veterinary College for allowing the use of the College Building for the Conference, was passed unanimously.

A vote of thanks to the President of the Conference, Prof. V. R. Phadke, G. B. V. C., J. P., was passed unanimously for conducting the business of the Conference successfully.

BOMBAY,
30th December, 1936.

V. R. PHADKE.
President.

WELCOME SPEECH

BY

*Mr. P. V. Nagarsheth, G. B. V. C., President, Bombay
Presidency Subordinate Civil Veterinary Officers' Service Association,
President and Professional Brothers,*

As President of the Bombay Subordinate Civil Veterinary Officers' Service Association, I esteem it a great privilege and honour to accord you, for the second time, a cordial welcome. I trust that with your help and guidance our discussions, deliberations and desires will prove fruitful in achieving the results which we aim at by holding such a Conference.

In the first place I have to express my sincere thanks to the Principal Prof. V. R. Phadke for kindly accepting our invitation to preside over this Conference. I need hardly say that we appreciate it very much since amongst his multifarious and responsible duties in connection with the Golden Jubilee of the Bombay Veterinary College and also of His Excellency the Governor of Bombay Lord Brabourne's visit to-day in the evening he has accepted our request and we congratulate ourselves for having him amongst us and his presence here to-day is a clear proof of his great sympathy towards this Conference. The first meeting of this Association was started as early as 1927, under his Presidentship and we are glad that he is now the Principal of the College which is an unique honour for a graduate of the College. We wish him all success and wish that he would get the chance of becoming the Director of Civil Veterinary Department, Bombay Presidency, before his retirement.

Secondly, I have to express my sincere thanks to E. S. Farbrother, Esqr., Director C.V.D., Bombay Presidency, for presiding at our last Conference at Poona in the year 1931. It is by his efforts that many of the resolutions passed at the last Conference are given effect to. The Conference recommended in its Resolution No. 5 to fill up vacancies of Lecturers and Veterinary Assistant Surgeons at the Bombay Veterinary College from C. V. D. Subordinates and Mr. Farbrother has already taken men from C. V. D. into the College and Glanders Department. We have to congratulate our Vice-President, Mr. M. G. Kulkarni for being appointed as Deputy Superintendent, Glanders and Farcy Department and also Mr. M. K. Garudachar member of our Managing Committee for being appointed as a Lecturer in the College. Besides, as resolved at the last Conference vaccinations against Rinderpest are carried out to a large extent everywhere in the Presidency as Virus is now prepared at the Bombay Veterinary College. We wish that as the grades of the Veterinary Assistant Surgeons are now revised to Rs. 125 that a Selection grade of Rs. 125-10-175 be created for 10 per cent of the staff who would have specialised professionally in some way as there are only three posts of Veterinary Inspectors and chances of promotion are very remote to 125 men for 3 posts of Inspectors. We also wish that a post-graduate class be opened at the Bombay Veterinary College to raise the professional standard of employees. The subjects of Cattle

Breeding and Poultry Diseases require to be introduced in the syllabus of the Bombay Veterinary College so that the Veterinary graduates can do much for the improvement of cattle and poultry.

The Association has on its roll 86 members. There are only 108 Veterinary Dispensaries in this Presidency with a population of one crore of Bovines. The present cadre of Veterinary Assistant Surgeons is totally inadequate to cope successfully with problems presented in research and executive professional work. We earnestly hope that each Taluka of nineteen Districts of our Presidency be provided with a dispensary at a very early date. We are sure that under the regime of our present sympathetic Viceroy Lord Linlithgow this will be carried out very soon.

In conclusion I have to say that I have touched on few points requiring attention of our Conference and I trust that with your hearty co-operation, our deliberations, discussions and decisions will benefit the profession and earn for it its due share and recognition.

I have to thank the Director of Veterinary Services and Principal of the College, Prof. Phadke for kindly allowing the College premises to be used for the Conference.

Balance sheet of the Bombay Subordinate Civil Veterinary Officers' Service Association from 1932 to 1935.

1932.

Receipts.		Expenditure.	
	Rs. A. P.		Rs. A. P.
Opening balance.	5 0 6	Postage stamps.	... 11 11 3
Loan from the Treasurer.	21 0 0	Printing charges of 150 copies of memorial sent to Government of Bombay.	... 20 0 0
Admission fees.	... 3 0 0	Money order commission for sending Rs. 20 to press	... 0 4 0
Fees from members,	... 42 0 0	Railway charges from Madras to Ahmedabad 150 copies of the memorial.	... 2 10 0
		Loan return to the Treasurer.	... 21 0 0
		To balance.	... 15 7 3
Total ...	71 0 6	Total ...	71 0 6

1933, 1934 and 1935.

RECEIPTS.		EXPENDITURE.	
	Rs. A. P.		Rs. A. P.
Balance	... 15 7 3	Interest on Rs. 100 that are in the bank for 1931 and 1932, not withdrawn but deposited in the bank.	... 4 8 0
Fees for 1932.	... 2 0 0		
„ 1933.	... 9 0 0	Fees of 9 members for 1933 returned as it was decided by the managing committee held at Surat on 27-10-33, not to receive fees for 1933.	... 9 0 0
Interest on Rs. 100 in the bank for the year 1931 and 1932.	... 4 8 0	Postage stamps by Mr. C. N. Desai.	... 1 14 6
		To balance	... 15 8 9
Total, ...	30 15 3	Total ...	30 15 3

Bombay,
30th December, 1936.

M. K. JHAVERY,

Author.

C. N. DESAI,
Hon. Treasurer.

**ALL-INDIA VETERINARY ASSOCIATION,
MADRAS BRANCH.**

Proceedings of the General Body Meeting held on 7-3-1937.

A General Body Meeting was held on 7-3-1937, at the Serum Institute, Madras, under the presidency of Rao Sahib K. Kylasam Ayyar, the President, to consider the letter of the President of the All-India Veterinary Association, requesting to give opinion on the resolution passed at the last All-India Veterinary Conference, Bombay. Twenty eight members were present.

The following resolution was moved by Mr. R. Narasinga Rao and seconded by Mr. P. Srinivasa Rao :—

“While welcoming the the proposal of the authorities to impart the highest Veterinary Education to the Indian youth in this country, this General Body Meeting of the A.I.V.A., Madras Branch, held on 7-3-1937, is emphatically of the opinion that the proposed new Central College at Izatnagar is unnecessary and involves needless enormous expenditure—both recurring and nonrecurring and therefore resolves to urge

respectfully the Government of India through the A.I.V.A., to drop the proposals and to advise the Provincial Governments having Veterinary Colleges of their own, to develop them so as to impart the highest Veterinary Education to suit the needs of the country at a minimum cost and with the maximum benefit".

Carried unanimously.

In support of the resolution, the following gentlemen gave their opinion:—

Mr. M.R.V. Panikar was not in favour of a Central College. He said that the existing Veterinary Colleges in the Provinces should be encouraged and assisted to develop into high grade institutions, and two courses may be necessary—one of three years and the other five years course. The Madras Veterinary College is one such which could be easily converted into a first rate one. Further, the newly instituted degree course at this college would be adversely affected by the proposed Central College.

Mr. K. S. Nair said that the sponsors of the scheme of the Central College are thinking of getting for the proposed College Professors and Examiners from abroad, but in the interest of the country the existing colleges should be helped to develop into first class institutions. The college at Madras is capable of giving the highest possible training if only the necessary facilities are afforded. It is only lately that Veterinary Education was put on a somewhat better footing. Our equipment and facilities for teaching are equal to any that may be brought into being for imparting the highest Veterinary Education. The proposed Central College would be a waste and the proposal for its establishment should be resisted by this Association.

Mr. V. Janikiram Ayyar was of the opinion that the scheme to import Professors would not answer the purpose for they will have to get experience first, themselves.

Mr. R. Narasinga Rao was of the opinion that there is absolutely no need for the proposed Central College. The Madras College is best fitted to give the highest possible Veterinary Education.

Mr. P. Srinivasa Rao said that in the United Kingdom there are four or five colleges and there is no reason why there should be only one higher grade college in this country. The cattle population is so large in this country that many more highly trained men are required than a single college could ever turn out.

In the Medical Department highest training is available in all provinces in this country and there is no reason why it should be otherwise in this profession. There is no need for affiliation of these colleges to the R. C. V. S., for the highest training is possible without it as is seen from the example of Canada, Australia, Africa, etc. The provincial colleges should be so developed as to give the highest possible training.

Mr. M. Ramakrishna Pillai was in favour of highest Veterinary training being given in the existing Veterinary Colleges.

Mr. M. Sunderanathan was entirely in favour of the proposed resolution and would commend it.

It was unanimously resolved to hold the Provincial Veterinary Conference during Michaelmas holidays.

With a vote of thanks to the Chair, the meeting terminated.

Madras. }
7-3-1937 }

K. KYLASAMIER,
President.

Notices.

THE ALL-INDIA VETERINARY ASSOCIATION.

Office:—Crawford Market, Hornby Road, Bombay.

15th March, 1937.

According to the rule No. 27 (b) of the revised Rules of the Association adopted in the last All-India Veterinary Conference in Bombay, each of the Provincial Associations, has to elect a member to represent it on the *Council of the All-India Veterinary Association*. Bombay has got to elect two members, as the headquarters province. It is, therefore, requested that Provincial (British Indian and Indian States) Associations will kindly elect representatives and intimate their names and addresses to me as early as possible.

Bombay. }
15-3-1937 }

D. S. LAUD, G.B.V.C., F.Z.S., F.R.H.S.,
General Secretary.

Change of Address.

All communications intended for me may kindly be addressed to P. O. Kurnool, (Madras Presidency), as I have come down here on transfer from Nandyal.

25TH MARCH, 1937, }
P. O. KURNOOL, }
Madras Presidency. }

M. S. SASTRY, G. B. V. C.,
Treasurer,
The All-India Veterinary Association.

BIHAR VETERINARY COLLEGE,**PATNA.***Notice*

The next session of the Bihar Veterinary College will commence from the 1st July, 1937.

1. A candidate desiring admission should submit his application on the prescribed form, together with the following certificates in original, so as to reach the Principal on or before the 1st June, 1937.

(a) Age and moral character certificate from the Headmaster of the School or Principal of the College at which he last read.

(b) University certificate or a certificate from the School or University authorities to show that he has passed the Matriculation Examination.

(c) Medical Certificate of fitness from an Assistant Surgeon.

(d) Letter from his guardian stating that all expenses incurred by his ward during the latter's period of study at the College will be paid.

(e) Letter of identification from some well-known person stating that the candidate is known to him and the statements made in the application form are correct.

2. A candidate for a District Board stipend to assist him while under training at the College should apply *in the first instance* to the Chairman of his home District Board, with the necessary certificates as soon as possible so that when selected he may be interviewed and approved by the Director of Veterinary Services, Bihar, before he is recommended for admission. Such a candidate should in addition to the certificates required in para 1, produce at the time of admission a letter from the Director of Veterinary Services, Bihar, or the Chairman District Board concerned regarding his selection as a stipendiary.

3. An applicant must be a Matriculate of a recognised University. Preference will be given to a candidate who has passed the I. A. or I. Sc. Examination. A good knowledge of English is

essential. Height should not be under 5'—4" and chest unexpanded, not less than 30 inches. A candidate must not be below 16 and over 25 years of age.

4. A non-stipendiary candidate will have to appear before the Governing Body of the College when called for interview.

5. Fees must be paid in advance according to the scale under rule 8 of the College rules, the initial payment due at the time of admission being Rs. 35/8/- only.

6. A candidate will reside in the College Hostel from the date of his admission unless specially exempted.

7. The scale of pay of the Bihar Veterinary Service is as follows:—

Provincial ... Rs. 200-40/2-560-40/3-640.

Subordinate... (a) Veterinary Inspectors.

1st Grade " Rs. 170/-

2nd " " " 135/-

3rd " " " 100/-

(b) Veterinary Assistant Surgeons

Rs. 50/- to 100/-

(fixed travelling allowance. Free house or house allowance in lieu thereof.)

8. Admission forms may be had free on application to the Principal. *Prospectus will be supplied on receipt of -/4/- by Money Order for each copy required.*

PATNA, }
The 11th January, 1937.

R. T. DAVIS, I. V. S.,
Principal,
Bihar Veterinary College.

College News.**DIPLOMA EXAMINATION RESULTS.****Bengal Veterinary College, Calcutta.**

The undermentioned students have passed, in order of merit, the Diploma Examination held in March, 1937.

<i>Serial Number.</i>	<i>Name.</i>	<i>Serial Number.</i>	<i>Name.</i>
1.	Monoranjana Sarkar.	22.	Maung Saw Tun.
2.	Profulla Chandra Basu.	23.	Khondker Matiur Rahman.
3.	Satyendra Nath Banerjee.	24.	Chembanda D. Kalapa.
4.	Khurshid Ahmed Quraishi.	25.	Hitendra Nath Chowdhury,
5.	Yar Mohammad.		
6.	Saroj Kumar Das.	26.	Sarat Chandra Maity.
7.	A. Vincent De Croos.	27.	Zahir-Ul-Hassan.
8.	Naggehalli Venkatachar Doraswamy.	28.	Kamaluddin Md. Yusuff Khan.
9.	L. Venkita Jalam.	29.	Adi Nath Mitra.
10.	Laksman Puri.	30.	Mohammad Takiuddin Ahmed.
11.	Rashad Sulaiman Kattan.	31.	Ruhal Ameen.
12.	Joseph John Palepu.	32.	Vartanzareh Noradungian.
13.	Mavatur Venkatagiri Gundu Rao.	33.	Tiruvengad Rama Iyer Ramchandra Iyer.
14.	Shafi Bahadur Khan.	34.	Susil Ranjan Das.
15.	A. T. Thiaga Rajah.	35.	Debi Prosad Bhatt.
16.	Chowdhuri Mahmood Hasan.	36.	Maung Ba Gywe.
17.	Vaman Balwant Soman.	37.	Lutfi Tahir Bi-Bayati.
18.	Lakshmana Rao Bheema Rao Pedaki.	38.	Supper Kandiah.
19.	Maung Tun Aung Gyaw.	39.	Yeakub Ali.
20.	Rash Behari Gupta.	40.	Bibhuti Bhusan Paul.
21.	Hector Charles Perera.	41.	Amiya Lal Banerjee.

Belgachia, Calcutta,

5th April, 1937.

A. D. MacGREGOR,
F.R.C.V.S., F.Z.S., I.V.S.,
Principal, Bengal Veterinary College.

BIHAR VETERINARY COLLEGE, PATNA.

The following students are declared to have passed the Diploma Examination, held in March and April 1937 :—

1. M. P. Johari.	7. M. Niwas.
2. M. S. Khan.	8. Munir Khan.
3. Y. R. Sinha.	9. Daulat Singh.
4. R. N. Verma.	10. R. D. Singh.
5. G. N. Srivastava.	11. D. P. Yadava.
6. T. P. Banerjee.	12. H. K. Gupta.

R. T. DAVIS, I.V.S.,

Patna,
5th April, 1937.

Principal, Bihar Veterinary College.

BOMBAY VETERINARY COLLEGE.

The undermentioned candidates have passed in order of merit the Diploma Examination of the Bombay Veterinary College, for the Session 1936-37.

1. Soong Min Thau.	9. Manjrekar, S. L.
2. Marathe M. R.	10. Ghalagi, S. B.
3. Ganesh Prakash.	11. Patankar, L. R.
4. Joshi, W. H.	12. Lutfulla, Y.
5. Vaniasingham, J.	13. Chitrav, D. K.
6. Parnaik, D. T.	14. Bishley, P. D.
7. Pillai, T. X.	15. Joshi, G. G.
8. Kripalu, M. G.	

Parel, Bombay,
15th April, 1937.

V. R. PHADKE, G.B.V.C., J.P.,
Principal, Bombay Veterinary College.

MADRAS VETERINARY COLLEGE.

List showing the names of Students who graduated from the Madras Veterinary College in March 1937.

- | | |
|---------------------------|------------------------------|
| I. K. Vaidyanathan. | VIII. { M. S. R. Anjaneyalu. |
| II. Maung Kyaw Zan Aung. | { Saw E. Maung. |
| III. John R. Rodgers. | IX. Maung Kyaw Thein. |
| IV. P. Balakrishna Menon. | X. S. Sankaran. |
| V. { Maung Thaw. | XI. V. Subramaniam. |
| { R. Vijiarangam. | |
| VI. Maung Po Tha Shinn. | |
| VII. Benjamin Abishegam. | XII. { A. Mangalanathan. |
| | { Muhammad Abdul |
| | { Haleem. |
-
- | | |
|---------------|--|
| Madras. | } T. J. HURLEY, M.R.C.V.S., D.V.S.M., I.V.S. |
| Dated 7—4—37. | |
| | <i>Principal, Madras Veterinary College.</i> |

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