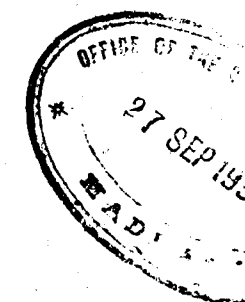


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VETERINARY  
JOURNAL



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(The Journal of The All-India Veterinary Association)



Editor:

P. SRINIVASA RAO, G.M.V.C.,

Veterinary Surgeon, Madras.

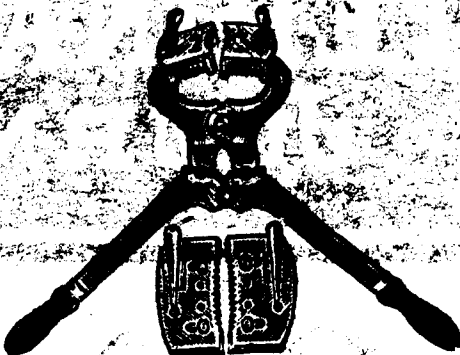
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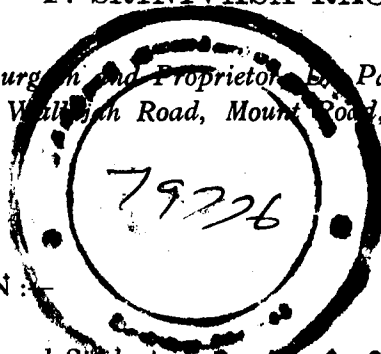
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EDITOR :

P. SRINIVASA RAO, G.M.V.C.,

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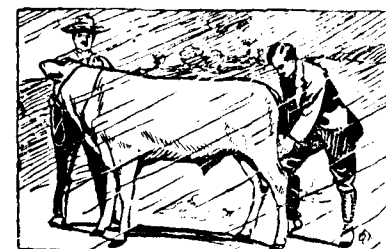
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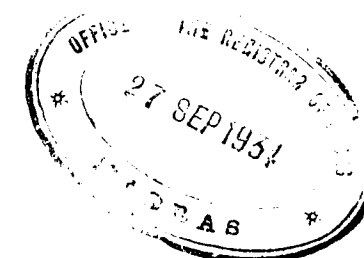
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# THE INDIAN VETERINARY JOURNAL.

(The Journal of the All-India Veterinary Association)

Vol. XI.]

JULY, 1934.

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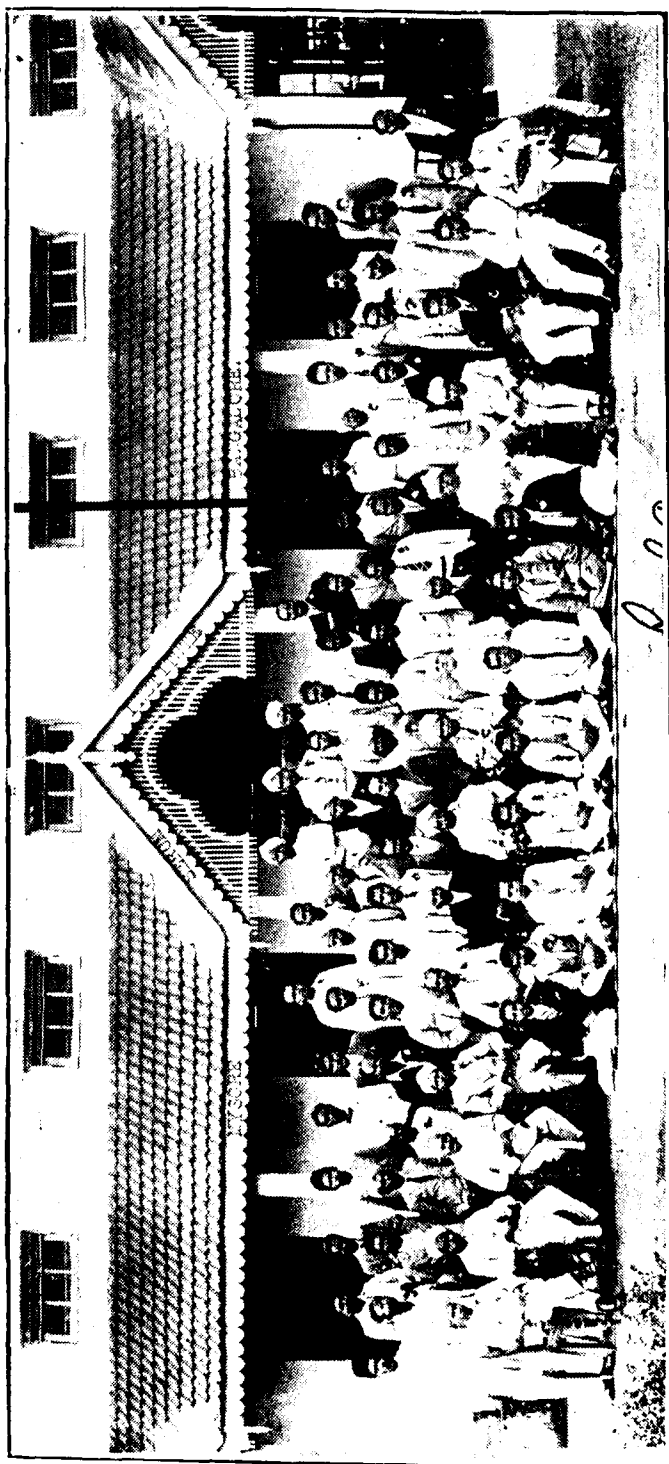
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Group Photo taken at the Sixth Conference of the Mysore Veterinary Medical Association.

# THE Indian Veterinary Journal

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JULY, 1934.

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## Editorials.

### BOVINE NASAL SCHISTOSOMIASIS.

It is only during the last few years that some attention has been paid, in this country, to helminthic diseases of cattle and recently the etiology of the so called Nasal Granuloma of Cattle has been worked out. From 1922 to 1932 the cause of the malady was supposed to be a *Streptothrix*, but no one succeeded in experimentally reproducing the disease in healthy animals—a point which is significant. In the year 1932, three workers in India independently discovered the cause of the disease to be a worm, a *Schistosome*. The papers dealing with their work have appeared in the press and also in this *Journal* from time to time. The existence of *Schistosomes* in the portal system of cattle and horses in India was demonstrated so far back as 1906, but the life histories of these parasites and their action on their hosts has not been so completely understood as in Nasal Granuloma, or to be more precise, Bovine Nasal Schistosomiasis which should be the correct nomenclature of the disease.

We are glad to note that the complete life history etc., of the Nasal *Schistosome* has been worked out, last year, in the Parasitology Section of the Madras Veterinary College and we learn that the experimental infection in calves has been confirmed again this year. In matters Veterinary, Madras has been second to none in India in many respects, and it is a matter for satisfaction to note that it has not lagged behind in questions dealing with Helminthology which is evident by the number of original papers that have been published during the last three years. It is therefore proper to expect Madras to take the lead now in adopting ways and means to eradicate Bovine Nasal Schistosomiasis. Madras did take up this work last year, we learn, by appointing a Special Veterinary Assistant

Surgeon to treat cases of Bovine Nasal Schistosomiasis in a systematic manner, in a chosen area in Chittoor District, but this useful work was stopped, after a couple of months and the reason for this deplorable step is not understood.

It may be that the disease is not rapidly fatal, but it is well-known that the animals suffering from it cannot turn out the usual amount of work expected of them for obvious reasons, consequently the ryots (Agriculturists) are put to considerable pecuniary loss. Even in the cows that suffer from this disease, the milk yield, which is usually poor, gets poorer and that means a further addition to the loss incurred by the ryot. Therefore, it is the duty of the Veterinary Department in every Province to adopt ways and means in preventing the spread of this disease among cattle, and thus prevent the loss to the ryots, since this Department is one among those that contribute to the general well-being of the rural population. In Madras, at any rate, according to a Government Order, Research work only in the diseases of indigenous animals of economic value is expected to be done, and that this has been done at least in the case of one disease, it is up to the Government now to find funds to proceed with measures dealing with its Prophylaxis.

We now know the kinds of fresh water snails that act as the intermediary hosts, the concerned cercariæ that are discharged by these snails into the fresh water of ponds &c., which in their turn are taken in with drinking water by cattle, day in and day out, which gives them the infection. It is also known that the ova of the worms that are in the blood vessels of the nose, work their way out into the nasal discharges through the lesions caused by them, ultimately reach the water of the ponds to which cattle have access for drinking water. The embryos that hatch out of these ova in water enter two kinds of snails to complete their biological destiny. Hence there are two ways open to us of preventing the spread of the disease or in eradicating it completely. The essential method of prevention is to keep the healthy animals from infection. Infection is possible only if the animals drink or come in contact with cercarial infected water in the ponds &c., in which the intermediary hosts exist. If the intermediary hosts, the snails, are got rid off, one link in the chain of the life history is broken and no fresh infection can take place. The snails can be killed by clearing the ponds &c., of weeds on which they feed and also by adding a small quantity of Copper Sulphate to the water of the ponds. Copper Sulphate in very small quantities is poisonous to snails and not to cattle. That drug in small quantities is a tonic to cattle, and since only one application of this drug is usually sufficient to obtain

the desired result there is no fear of any cumulative effects to cattle. Another method is to treat all cattle with Nasal Schistosomiasis, in a group of villages at a time. The cheapest and perhaps the most effective drug required is Tartar Emetic. The recorded evidence shows that it was Madras that first began to treat such cases with Tartar Emetic so far back as 1921. In 1929 it was definitely proved, in Bihar and Orissa, that in Tartar Emetic alone we have a specific against this disease. These two methods, therefore, have to be employed, in conjunction in combating against Nasal Schistosomiasis if any success is to be achieved in eradicating the disease.

The Touring Veterinary Assistant Surgeons during their tours, and to some extent those that are in charge of Veterinary Institutions, can collect information and mark the areas where this disease is found. This work, if done with enthusiasm, can be completed within six months in each Province. As soon as the areas are known, a few extra hands if employed to carry on with the treatment systematically and at the same time to destroy the intermediary hosts in the ponds, etc., of the village, we feel sure that in the next decade this disease will be a thing of the past.

We find that from badly infected localities, the villagers bring their affected cattle to Veterinary Institutions for treatment even if the distance they have to cover is long, but the villagers do this only during the period when they have no agricultural work on hand. Hence it is the work of the Department to take the treatment, etc., to their homes just in the same way as inoculations against Anthrax, Rinderpest, etc. If this is done systematically in one group of villages to begin with, the value of the Department will advertise itself. Educative propaganda, with the aid of magic lantern shows on the life history of the worm, of the intermediary host, its destruction, etc., should also be done side by side in the group of villages where treatment is carried on and also in the surrounding villages. If the Department can show its usefulness in this direction in a few chosen areas, the expenditure involved will obviously pay itself many times over and one can foresee that the existing demand for Veterinary aid will increase appreciably, and naturally, to that extent, the department will also expand.

In this part of India there is the belief which has shaped itself into a "saying" that Nasal Schistosomiasis and the so-called Chronic luxation of patella in cattle are incurable. Here again it would appear that Madras first showed to the ryots that the luxation of patella is curable—a paper on which appeared in this *journal* in 1924. Many animals have since been treated in other provinces. Nasal Schistosomiasis has also been proved to be curable provided no reinfection takes place after treatment. There are

enough reasons therefore that the Veterinary Department of the various Provinces should take up this question and prove to the world at large what useful work they are doing to relieve the distress of the suffering dumb creatures and thus add to the improvement of the lot of the silently suffering ryots of India. By helping the agricultural population in this direction, the Government helps itself.

### CIVIL VETERINARY SERVICES IN INDIA.

#### V

#### BENGAL

The province of Bengal was no better than the rest of India in the matter of its organisation to deal with the diseases of the agriculturists' cattle and other live-stock prior to the year 1900. And thousands of cattle succumbed year after year to the ravages of the contagious diseases, notably Rinderpest, although the Indian Cattle Plague Commission appointed by the Governor-General in Council in 1869, submitted its report with particular and elaborate reference to the Bengal Presidency.

The first practical step towards the formation of an agency to combat the outbreaks of diseases of stock, was the establishment of a Veterinary College in Calcutta. But the pay and prospects of those entering the new career afforded by the College were so meagre that it failed to attract in sufficient numbers young men of the right type of social status, and education. In course of time, however, matters improved to a considerable extent and the formation of a Department with a trained staff of assistants was rendered possible. In the annual report of the Department for the year 1904-05 we read that "The work of the Department continued to make steady progress during the year. The question of the reorganisation of the Veterinary establishment in the Province is under the consideration of Government, and particular stress has been laid on the fact that one Imperial Officer is quite unable to cope with the work single handed. In fact, this appears to have been recognised over 4 years ago, since when the work of the Department has materially increased. Another point which has been urged as essential for the conduct of the Department is that the Superintendent should have the sole control of the distribution and working of the subordinate establishment."

The number of hospitals and dispensaries in the Province during this period was 23 and the number of itinerant assistants was 24.

It must be mentioned here that the hospitals and dispensaries were under the management of the District Boards. We have had occasion to say in our previous reviews how unsatisfactory this

arrangement was and we see from the report of the Superintendent, Civil Veterinary Department that the Bengal District Boards were no better in this respect, for this is what the Superintendent had to say about the Patna dispensary. "I regret to say that I found the Committee appointed to supervise the work of this dispensary entirely neglected to visit the place once throughout the year, which shows they take no interest in it whatever. My remarks and those which my Inspectors made in the visitors book with reference to improvements etc. might as well have never been written for all the good they did."

In this province the District Boards had also to find funds for the itinerating staff. In his annual report for 1905-06, the Superintendent writes, "To ensure prompt and effective measures being taken for prevention and suppression of outbreaks, it is absolutely necessary to increase the itinerating staff, and this will be done as soon as men are available and the District Boards can find funds."

A second Imperial Officer was appointed to the Province in 1906, but this was found to be inadequate to meet the requirements of the College and the executive branch of the Department. This is what the Superintendent says "To further emphasise the want of at least another Officer who could devote his time to this work, Major Raymond, in June 1903, said his staff were then working at high pressure, and as a result most of them were either actually on the sick list or showing the effects of a long and arduous session. At that time there were four lecturers on the staff, two of them European to teach a total of 30 students. This year we had one European and three native lecturers with one native lecturer on probation to educate the maximum number of students the College has reached in our session, viz. 142 students. Although further comment appears to me to be unnecessary, I feel it incumbent on me to place on record my conviction that, even with the return of Mr. Burke and the appointment of an Imperial Officer whose sole duties are to be in connection with the College, the appointment of the second Imperial Officer for the College is urgently required."

During the following year, there were two more Imperial Officers under training and the number of hospitals and dispensaries increased to 23.

According to the Government review of the activities of the Department during the year, "The Bacteriological Laboratory of the College has been completed and equipped with furniture and apparatus. The extension of the Glanders and Farcy Act to Calcutta and its suburbs has added very considerably to the work of the Principal."

"Inoculation for Rinderpest continues to make satisfactory progress. The number of these inoculations was 24,074 as compared with 22,613 in 1903-04."

Important changes were introduced in the organisation of the Department with effect from 1908. The Office of the Principal was separated from that of the Superintendent in charge of the executive branch.

The scheme for the re-organisation of the Civil Veterinary Department received final sanction of the Secretary of State for India and the service was made pensionable. The scheme provided for the appointment of Provincial and Subordinate Civil Veterinary Service Officers, viz. 9 Deputy Superintendents, 30 Inspectors and 22 Veterinary Assistants.

A Post-Graduate course of training under the direction of the principal of the Bengal Veterinary College was instituted for Assistants selected for promotion. In his report for 1911-12 the Superintendent says as follows:—"The year which has drawn to a close has brought about many changes. First, the introduction of the Provincial Veterinary Service on the 1st April 1911; second, the partition of Bengal with 33 districts, into the new province of Bihar and Orissa with 21 districts (the remainder being allotted to Bengal); and third, the proposed abolition of the post of Inspector-General, C. V. D., and placing the Department in India under the Agricultural Adviser to the Government of India. As regards the bearing of the first two questions on the general efficiency of the Department in this Province, they will, I believe, be followed by marked improvement in the class of men admitted and in the work of the Assistants and staff in general. In respect of the third, it is unnecessary to make any remarks except that it is a step which leads anywhere but toward progress." The Director of Agriculture in his letter dated 1st August 1912, forwarding the annual report of the Superintendent, Civil Veterinary Department to Government, expressed himself as follows:—"The introduction of the Provincial Veterinary Service with effect from 1st April 1911, has improved the prospects of the Veterinary Department considerably and must lead to greater efficiency. Its effects will be felt more fully year by year. The constitution of the new Province of Bihar and Orissa and the abolition of Inspector General of the C.V.D., scarcely come within the purview of the year under report. The criticism passed on the latter measure by the Superintendent, C.V.D., is out of place and should not have found a place in his report."

It is to be regretted that the students presenting themselves for admission at the Bengal Veterinary College are few in number and

backward. Possibly the introduction of the new Provincial Veterinary Service may lead to a better class of students applying for admission. The prospects, however, of Veterinary Assistants, especially of Itinerant Veterinary Assistants, must be improved if better men are to be secured. The travelling allowance of Itinerant Veterinary Assistants has been fixed too low to enable them to meet their expenses on tour. The life, too, which the Itinerant Veterinary Assistant has to lead, constantly touring in the interior, is a hard and un-attractive one. Proposals will be submitted shortly for raising the travelling allowance of Itinerant Veterinary Assistants."

The pay and prospects of the Itinerating Veterinary Assistants all over India are still far from satisfactory and by no means commensurable with the hard and un-attractive touring life in the interior of the districts.

In their review of the annual administration report of the Bengal Veterinary College and the Civil Veterinary Department, for the year 1913-15, Government observed that "The falling off in the attendance at the College is due partly to the reluctance of most District Boards to increase the Veterinary staff in their employ, and partly to the inadequacy of the prospects open to the lower branches of the Veterinary Service. Measures for removing both these obstacles are under the consideration of Government."

Comment is needless. For, here as elsewhere, the system is at fault. So long as the District Boards are required to find men and money to provide for the veterinary needs of the province, no progress can be made.

In 1915-16 the strength of the Department was 1 Deputy Superintendent, 6 Inspectors, 4 Staff Assistants, 6 Reserve assistants and 82 District Veterinary Assistants, but the demand for Veterinary Assistants continued to increase. When the Great War broke out some of the Officers of the Department, both Imperial and Subordinate, volunteered for military service and thus the actual working strength was reduced.

The mortality from contagious diseases of cattle rose from 8232 in the previous year to 26208 in 1917-18, Rinderpest being responsible for 21126 deaths.

How meagre and tardy was the improvement in the pay and prospects of the Subordinate staff of the Department is evident from the Government review of the Superintendent's report for the year 1918-19:—"This is what Government said "To improve their prospects, their pay has been raised from Rs. 30-10/5-70 per mensem to

Rs. 50-10/5-100 per mensem. The Governor in Council trusts that the improved prospects will attract a large number and a better class of students to Bengal Veterinary College and thereby improve the efficiency of the Department."

In 1920-21, the administrative control of the Department was transferred from the Director of Agriculture to the Principal, Bengal Veterinary College, he being the Senior Veterinary Officer in the Province and he was made the head of the Department with the designation "Veterinary Adviser to Government of Bengal." During the year revised scales of pay were sanctioned, both for the Imperial and Provincial Veterinary Services.

In their review of the Annual report of the Superintendent, C.V.D., for 1921-22 in connection with the preventive inoculation for the control of Rinderpest, Government observed: There is no doubt that the short period of protection afforded by the ordinary method is to some extent responsible for the antipathy which exists against preventive inoculation. Government believe that the rate of progress would be considerably hastened if the serum-simultaneous method of inoculation, which confers immunity of a more or less permanent character on the animals protected, could be generally adopted. The difficulty however is that this method of inoculation can only be practised by a much more highly trained staff than is at present available. The Superintendent mentions that certain District Boards opposed the submission of indents for the quantity of serum required, and proposed that the cost of serum should be met by charging fees for inoculation. While Government recognise that many District Boards have to exercise strict economy in order to make their income cover their expenditure, they regard inoculation against Rinderpest as a duty which cannot be neglected in a Province where the population is so largely dependent upon agriculture, as in Bengal. The levy of fees would undoubtedly give a serious set back to the spread of inoculation." The above is a clear exposition of the state of affairs but the Government have failed to recognise the essential principle that the cost of protecting agricultural live-stock against contagious diseases should be made the first charge on provincial revenues and not strain the slender resources of a District Board with it.

The head of the Veterinary Department continued to complain against the District Boards for not making adequate provision to meet the growing demand for veterinary aid in the province year

after year and the Government in the annual review stressed the point for the serious attention of the District Boards, but there was no appreciable change for the better.

We get a glimpse of the partial recognition of the true cause from the report of the Director, C. V. D., for the year 1924-25. He says, "that cost of serum is felt to be a heavy burden by the District Boards in this Province. Formerly, the cost of anti-rinderpest serum was two annas per dose, but now it has been found necessary to raise the price to meet the increased cost of production. Serum charges are met from Provincial revenues in the Punjab, United Provinces, Central Provinces, Bombay and Madras, and it is understood that proposals in this connection are at present under the consideration of the Bihar and Orissa Government. To make serum treatment more popular I suggest that the same system be introduced in this Province also, and the money thus saved to the District Boards be utilised by them in increasing their Veterinary staff".

On this the Government remarked that the subject will receive their sympathetic consideration, but Rinderpest continued to levy its toll. In 1925-26 the disease was prevalent throughout the province and was responsible for 24695 deaths.

Although in the following year the Government accorded administrative approval to the proposal to supply Local Bodies with free serum for inoculation against epidemic diseases and to the employment of 9 extra Staff Veterinary Assistant Surgeons and an Officer of the rank of Inspector for carrying out propaganda work, it did not materialise.

The Government review of the annual reports of the Civil Veterinary Department, Bengal, and the Bengal Veterinary College for the year 1927-28 explains the situation as follows:—"The Director, not without justification, couches his general remarks in a tone of some despondency. Want of funds have prevented several important schemes being brought into being, such as the free supply of serum, the appointment of 9 extra Staff Veterinary Assistant Surgeons, and the appointment of a Veterinary Inspector for propaganda work. Nor has it been possible to make any progress with the long-standing question of the revision of the pay of the Veterinary Assistant Surgeons. On the side of Local Bodies who employ and bear two-thirds of the cost of the Subordinate Veterinary staff there is too often evident an apparent failure to appreciate the important bearing that the control of epidemic diseases, together with the ordinary care of animals, has on the prosperity of the country. This attitude is reflected also, as the Principal, Bengal

Veterinary College, observes, in the steady fall in the number of District Board stipends awarded to students at the college. Consequently, the staff shows little or no expansion and in one case a local body has got rid of the Veterinary Assistant Surgeon whom it had hitherto been entertaining. It must be admitted, however, in all fairness to Local Bodies, that the increasing calls which are made upon limited financial resources particularly on the side of medical and public health work make it inevitable that they should cut down expenditure somewhere and veterinary interests are not the only ones that have suffered. After all, the Government seem to have recognised the real cause of the trouble, but, there is no indication of any action being taken to remedy the state of affairs.

It is deplorable that the organisation of the Department to deal with the contagious diseases of cattle should, even after the lapse of over 30 years, be still so unsatisfactory as to allow Rinderpest to levy its heaviest toll in the Province. For this is what the Government have said in their review of the annual report of the Civil Veterinary Department for 1931-32:—"During the year under review there was an increase in the mortality of animals from contagious diseases as compared with that of the preceding year. Rinderpest, which was prevalent throughout the province, took the heaviest toll, being responsible for 71 per cent. deaths reported from bovine diseases."

It is abundantly clear from this brief survey of the Civil Veterinary Department, Bengal, covering a period of over 30 years since its inception, that its development and expansion have not been in proportion to the needs of the Province, owing to the step-motherly treatment which it received at the hands of the Government. We are convinced that the history of the Department would have been altogether different if there had been a strong public opinion in Bengal to voice the Veterinary needs of the Province.

## INDIAN VETERINARY JOURNAL

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## General Articles.

### MEAT POISONING

BY

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**Definition:**—The term "meat poisoning" may be said to include all cases in which severe illness, more or less sudden in its onset and often proving fatal, is caused in man by the consumption of meat containing some unwholesome ingredients, more particularly containing virulent bacteria or toxic bacterial products. The term is not intended to apply to cases in which symptoms are caused by chemically well-defined poisons, introduced intentionally (with homicidal intent) or accidentally (lead dissolved out of the solder of tin, or the glaze of earthenware), into the meat. By 'meat poisoning' we mean only such outbreaks as are due to poisons of bacterial origin (toxins) or to the micro-organisms by which such toxins are produced. Again, it may well be pointed out here that the term 'ptomaine poisoning' is not synonymous with 'meat poisoning', although the symptoms of the illness in man in both instances are not very much different. Ptomaines are certain alkaloidal substances that are formed during the decomposition and break-down of the proteins of the food, and when they are ingested by man, they cause cases of poisoning. In most cases of 'bacterial food poisoning' the food remains apparently normal in appearance and the symptoms are due not to breaking down of the proteins but to infection with a specific organism. Often there is nothing whatever either in the appearance or odour of the infected meat to give a hint as to its deadly properties. Under these circumstances it is not surprising that even experienced meat inspectors should be led astray. A striking and melancholy example of this occurrence took place at Ghent in 1894 (Van Ermengem 1896 and Dieudonne 1908). A meat inspector of considerable experience undertook to examine some sausage meat that was suspected of causing illness in some persons who had consumed part of it. He passed the meat as suitable for human consumption, and by way of showing his confidence in his opinion, he partook of some slices himself and gave some to the employees of the slaughter-house. These persons suffered from enteritis of varying degrees of intensity and recovered. The inspector himself, however, was attacked by choleraic symptoms of the severest type to which he succumbed in five days. At the autopsy there was distinct evidence of haemorrhagic and gangrenous gastro-enteritis, fatty degeneration of the liver and acute interstitial nephri-

tis. From the sausages, and especially from the remains of those consumed by the inspector, a highly toxic and virulent strain of *Bacillus enteritidis* (Gaertner) was isolated. The same bacillus was obtained from the internal organs, blood and the intestinal contents of other patients.

**Classification:**—Poisonings which are to be traced to consumption of meat can be very conveniently classified, according to Lovell (1932) into the following four groups, under the headings of the causative bacterial organisms:—

- (1) Meat poisoning as a result of infection of meat with members of the *Salmonella* group of bacteria. (Micro-organisms which belong to the group of the *Bacillus enteritidis*.)
- (2) Botulism, produced by *Bacillus botulinus*. (An obligate anaerobe.)
- (3) Meat poisoning as a result of infection of meat with staphylococci.
- (4) Meat poisoning due to the toxic action of other bacteria.

**(1) MEAT POISONING AS A RESULT OF INFECTION OF MEAT WITH MEMBERS OF THE SALMONELLA GROUP OF BACTERIA.**

The following table gives the most important types of bacteria belonging to the *Salmonella* group with their disease producing role in animals and man:—

| TYPE.              | Disease producing role in                                                                                                                                                                                                                    |                                                         |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
|                    | Animals.                                                                                                                                                                                                                                     | Man.                                                    |
| Paratyphosum A ... | Once isolated from a pig (Broudin 1927).                                                                                                                                                                                                     | Paratyphoid fever.                                      |
| Paratyphosum B ... | Reported as found in animals, but extremely unlikely that they are true <i>Bact. paratyphosum B</i> .                                                                                                                                        | Paratyphoid fever—Doubtful if it causes food poisoning. |
| Aertrycke ...      | Enteritis in mice, rats, guinea pigs, associated with swine fever in pigs, calf enteritis, "Keel" disease in ducks, fowls, occasionally parrots, canaries and pigeons. Rarely in sheep causing enteritis. Baboons in captivity, skunks, etc. | Food poisoning.                                         |

| TYPE.                                    | Disease producing role in                                                                                                                                                       |                                                                        |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
|                                          | Animals.                                                                                                                                                                        | Man.                                                                   |
| Derby ...                                | Pigs with swine fever ...                                                                                                                                                       | Food poisoning.                                                        |
| <i>Bacteria suispestifer</i> (American). | Pigs with swine fever in America one strain from blood and liver of foxhound.                                                                                                   | Occasionally food poisoning septicaemia.                               |
| <i>Bacteria suispestifer</i> (European). | Pigs with swine fever in Europe one strain from monkey in captivity.                                                                                                            | Food poisoning, mild pyrexia, enteric, septicaemia, abscess formation. |
| Newport ...                              | Recovered from the blood stained faeces of dog.                                                                                                                                 | Food poisoning.                                                        |
| <i>Morbificans bovis</i> ...             | One strain from cow, puerperal metritis.                                                                                                                                        | Food poisoning.                                                        |
| Enteritidis ...                          | Enteritis in rats, mice, "Keel" disease in ducks. Induration of udder and septicaemia conditions of cows—probably enteritis of calves pig probably associated with swine fever. | Food poisoning.                                                        |
| Dublin ...                               | Calf dysentery and diarrhoea. Spontaneous epidemic in mice.<br><br>(Extracted from Lovell, 1932).                                                                               | Food poisoning, continued fever with septicaemia meningitis.           |

The bacteria belonging to the *Salmonella* group possess the following character:—

- (a) Short and coliform in morphology, of 0.2 to 0.4 microns usually arranged in pairs: they resemble the bacteria of haemorrhagic septicaemia.
- (b) Gram-negative.
- (c) Motile, resembling the typhoid bacilli and possess peripherally arranged flagellae.
- (d) Superficial colonies on gelatin are quite polymorphous, distinguishable from *Bacillus coli* colonies by their less lobate character and transparent borders.
- (e) They do not form indol.
- (f) They do not coagulate milk, but after about 10 days reduce its capacity somewhat. Milk then may be rendered slightly transparent and may take up a yellowish colour. Milk becomes markedly alkaline after a brief period of acidity.
- (g) They always ferment dextrose and other sugars with abundant gas formation. These bacteria, however, do not affect lactose and this sharply separates them from bacteria of the coli-aerogenous group.
- (h) They cloud bouillon but no odour is given out.
- (i) They grow rapidly on the usual laboratory media: on potatoes the growth is frequently barely visible.

The most important out of the types given in the table are Gaertner's *Bacillus enteritidis* and *Bacillus aertrycke*. The former derives its name from Prof. A. Gaertner of Jena, who isolated it in connection with an outbreak of meat poisoning at Frankenhausen and first clearly described it in 1888. Bacilli of this type have since been isolated by Van Ermengem from the outbreaks at Morseele, Gent and Bruges, by Fischer at Rumflett and Hausted and by several others. The distinctive character of this bacillus is its serological affinity with genuine Typhoid. The latter derives its name from the place in Belgium where it was first isolated by de Nobele. It has also been detected as the cause of meat poisoning outbreaks at Breslau by Flugge, at Meirelbeke by de Nobele, at Dusseldorf by Trautmann, at Hatton and Chadderdon by Durham, and on several other occasions by different workers. Serologically, this type is quite distinct from ordinary typhoid and from Gaertner's bacillus, but is more or less identical with paratyphosus B as obtained from cases of typhoidal character in the human subject—cases apparently unconnected with meat poisoning.

The bacteria comprising the Salmonella group are distinguished from the more or less related species (like certain varieties of *Bacillus coli* and Typhoid bacilli) by their great virulence, characteristic production of toxins which are resistant high boiling temperatures even and absence of any marked odour in infected meat. The following table gives the main distinctions between the Typhoid bacilli, meat poisoning group of bacilli and *Bacillus coli* :—

CULTURAL CHARACTERS OF TYPHOID, MEAT-POISONING GROUP AND COLI BACILLI.

| Organism             | Fermentation of |              |                           | Milk                           | Neutral red | Indol | Pathogenicity for animals. |
|----------------------|-----------------|--------------|---------------------------|--------------------------------|-------------|-------|----------------------------|
|                      | Glucose         | Lactose      | Dulcitol                  |                                |             |       |                            |
| Typhoid              | Acid            | No change    | No change                 | Acid or alkaline, not clotting | No change   | None  |                            |
| Meat poisoning group | Acid and gas    | No change    | Acid and gas              | Strongly alkaline, cleared up  | Changed     | None  | Yes (usually)              |
| Coli                 | Acid and gas    | Acid and gas | Fermented by some strains | Strongly acid, clotted         | Changed     | Yes   | Sometimes                  |

Note: Paratyphosus A stands very close to typhoid, only differing from it of its ability to ferment glucose.

Savage and White (1925) consider that *Salmonella* bacteria are responsible for 70 per cent. of cases of food poisoning. The nature of meat poisonings produced by this group of bacteria consists either in an intoxication of the human body with chemical poisons (toxins, toxalbumens, toxigenic substances) developed by the micro-organisms in the animal body, or else in an infection with the bacteria themselves, or a combined action of both. In the so-called paratyphoid meat poisoning the metabolic products of bacteria are not poisonous in themselves, but they increase the action and aggressiveness of the bacilli. In general, the symptoms of the disease set up by these bacteria in men are: An acute attack of inflammatory gastro-enteritis, simulating Asiatic Cholera, sometimes accompanied by muscular weakness or ataxy, coming on within a few hours of the ingestion of the incriminated meat; violent vomiting and purging, accompanied by intense pains in the head and abdomen and followed by hypothermia, cold sweats and collapse, death often taking place within twentyfour hours of the commencement of the symptoms. Mortality hardly exceeds 2 to 5 per cent. Convalescence is slow. The severity of the disease varies according to the nature and intensity of the poisons in consumed meat, by their quantity, preparation, etc.

There is extensive evidence to show that the various forms of septic and pyaemic affections of food animals are the principal causes of meat poisoning in man. These affections frequently induce emergency slaughter, and it is not surprising that by far the greatest number of meat poisoning cases are ultimately traced to animals slaughtered when on the point of death, usually from some septic or diarrhoeal condition. Slaughter in such cases has usually been effected under private or subsequently unascertainable conditions. The practical inference is, of course, the abolition of private slaughter-houses and the rigid inspection of all food animals before and after slaughter.

To what extent the bacteria belonging to the *Salmonella* group are responsible in the setting up and development of septic and pyaemic conditions has not yet been definitely ascertained. Again, the toxic ingredients in the diseased food animal may be distributed throughout the entire carcass or they may be confined to any localised area or organ. In both instances the virulence of the meat, and with that the degree of intensity of the poisoning, will vary widely. The virulence of meat depends on the severity and nature of the malady of the food animal at the time of slaughter, the bleeding of the carcass and on the nature of storage of meat and its preparation.

It is often difficult, nay impossible, to determine how a particular sample of food has become contaminated. The meat foods that are most frequently incriminated for causing meat poisoning in man

are those commonly known as "made-up" foods, such as sausages, meat pies, pickled, potted and tinned meats. These are foods made from pieces of meat and the chances of tracing an animal from which they are derived are limited. Furthermore, such foods are subjected to considerable manipulation, and are more liable to bacterial contamination. They are mostly foods which are heated, often insufficiently, to sterilise them and then cooled, a procedure which aids bacterial growth, and finally the preparation of such foods is frequently carried out as an adjunct to other business such as slaughter-house work. The chief difficulty is, therefore, concerned with the reservoir of *Salmonella* bacteria, for if more knowledge is gained on that point, then the paths of infection may be more easily found. The food may become contaminated in one of two ways:—

1. The meat may be sound at the time of slaughter and be subsequently contaminated, either by animals or human beings acting as 'carriers' of *Salmonella* bacteria.
2. The meat may have originated from an animal which is itself suffering from a *Salmonella* infection.

Beef and veal are more frequently found to be the source of meat poisoning than other kinds of meat. Outbreaks of food poisoning associated with mutton appear to be rare. Pork occupies an intermediate position as a source of danger. Further, in this connection, birds, particularly ducks and their eggs are not without danger to human beings. It is important to note that although sound food may be infected during its preparation, yet animals used for food can and do sometimes suffer from *Salmonella* infection. These animals are a source of great danger to human beings and it cannot be too strongly emphasised that emergency slaughtered animals constitute the chief danger. This lends support to the importance of antemortem inspection of food animals. Greatest care should be exercised in the inspection of all carcasses to be used as food, more especially of those from sickly animals. Animals, especially calves and adult bovines, showing abscesses, gastro-enteritis and umbilical and puerperal infections should be preferably held up for sometimes for slaughter, and if slaughtered their flesh should be excluded from consumption.

#### TESTS.

(1) De Nobele convinced himself that the muscle juice of animals infected with micro-organisms of the *Bacteria enteritidis* group possesses pronounced agglutination properties toward the latter. According to this investigation, it would be sufficient to test the muscle plasma in quite high concentrations (1 to 10 to 1 to 20) with each of the representatives of micro-organisms concerned. As the expressed muscle juice of healthy animals does not agglutinate the micro-organisms in question, even in a concentration of 1 to 1, a definite result could

be obtained by this test within two hours. It would be necessary to resort to the cultural method only in case the agglutination gave negative results. It would be advantageous to keep the meat to be examined for twenty-four hours after slaughter at a temperature of 18 to 20°C., and to make the culture inoculations only after that time. By this procedure a marked increase of the micro-organisms is obtained, which are not numerous immediately after slaughter. On the other hand, through this method the results of examination unfortunately much longer delayed. In scientific or forensic examinations regarding the poisonous qualities of meat, the sero-diagnosis method possesses a great importance for the distinction of the suspicious bacilli found thereby. Also for the diagnosis of poisoning in men and animals by meat, the agglutination test of the blood of affected individuals may be of value.

(2) For the recognition of poisonous qualities in meat the examination for bacteria could be carried out by *Basenau's method*.

#### METHOD.

Bacteriological meat inspection was first recommended by Basenau for cases of doubtful affections, especially in emergency slaughters, in which an unobjectionable positive result cannot be obtained in any other way. In such inspection bacterial blood intoxications are included first of all, and a diagnosis even in these cases may prove quite difficult. Basenau himself gives the following direction: "It is practicable to undertake the examination twenty-four hours after slaughter, as all the meat-poisoning bacteria grow even at a low temperature, thereby increasing their numbers, which facilitates the examination. In this study it is presumed that after slaughter the stomach, intestines, etc., were removed in the usual order. This excludes the possibility that bacteria, which may be found in the interior of the meat, have reached the point through post-mortem invasion from the intestines. According to numerous experiences which have been confirmed by A. Chillees, micro-organisms are not present in the interior of the meat of healthy animals even for a longer time following slaughter. From the interior of the meat, which is rich in connective tissue, cover-glass preparations are made and gelatin plates are inoculated. Gelatin plates suffice perfectly for this purpose, if Foster's gelatin with a high melting-point is used. At the same time two mice are fed with raw pieces of the meat and two others are fed with meat which has been exposed to 100°C. for one hour. If no microorganisms are present in the smear preparations, and if no colonies will develop within twenty-four hours on the plates, the meat should be released without any further action. If these preparations or plates establish the presence of bacteria, the meat should be temporarily held in a suitable place and the results of the animal experiments, which when positive, appear in most cases within three days, should be taken into consideration for final judgment. Should the mice, which were fed with the raw meat die, while those given the boiled meat remain well, it serves to prove that the toxic substances were destroyed by boiling. Then in accordance with present experiences, the meat can be released for consumption without danger to human health, after a sufficient sterilisation in the steam apparatus. If no sterilising apparatus is available, the proof of the presence of a large number of bacteria in the meat would be sufficient for its condemnation. Should the mice fed with the boiled material containing the bacteria succumb, the meat should be withheld from commerce and permission should only be given for its technical utilisation."

(3) As a simplification of Basenau's plating method, Ostertag recommends sowing on slant agar, as agar tubes can be carried easily in a sterile condition.

(4) Drigalski recommends surface sowings on alkaline lactose-litmus-agar with particles of the spleen and muscles and in addition the inoculation of similar particles into slightly alkaline nutrient bouillon at 22° C. until the following day for the purpose of growing the organism, and afterward inoculation of new plates for the growth in bouillon. If the growth on the plates shows predominantly bluish, transparent colonies, a specific infection of the concerned animal (*Bacillus enteritidis* Gaertner) is indicated.

## (2) BOTULISM.

**Definition :—**Botulism may be defined as an intoxication of man produced by certain poisonous substances manufactured by *Bacillus botulinus*. In older literature it is also known as "Allantiasis" or "Sausage Poisoning," (Lat. *botulus*—a sausage.) The name 'Sausage poisoning' originates from the fact that the earliest critically observed case of the malady, as reported by a Schwabian physician, Justinus Kerner, in 1820, was connected with the ingestion of injurious sausages. Later on also numerous severe cases of the same malady were traced to eating decomposed, semi-fluid, sour and malodorous sausages by many German workers. They believed that the disease was caused by the products of ordinary protein decomposition. According to Ostertag, most of the cases of sausage poisoning occurred in Wurttemberg, Bavaria and Baden, because of the great development of sausage manufacture there, huge consumption of sausages and the ignorance that prevailed there in the preparation of certain kinds of sausages.

Van Ermengem, (1897) a Belgian scientist, was, however, the first to discover that botulism or sausage poisoning is due to a highly specific disease producing micro-organism, *Bacillus botulinus*. He found this from portions of ham that had given rise, in December 1895, to an outbreak of 20 cases of botulism at Ellezelles in Belgium. Three of the patients died. The pig from which the ham had been taken was quite normal in appearance. The part of the ham which remained was examined by him and proved not to be decomposed, but had a musty, rancid odour. This piece of ham was rather pale in colour. Furthermore, according to the statements of all the consumers, it possessed a bad taste. From the toxic ham and the spleen of one of the dead persons Van Ermengem succeeded in cultivating anaerobic bacteria which possessed the power of producing a very active toxin. This toxin induced in the experimental animals all the symptoms of botulism, thus showing that *Bacillus botulinus* is one and the only cause of botulism.

**Bacteriology :—**The *Bacillus botulinus* is a large straight rodlike bacillus with rounded ends, Gram positive, feebly motile, possesses 4 to 8 flagella, and it resembles the oedema bacillus to a certain extent. It is 4 to 6 microns long and 0.9 to 1.2 microns broad. It is a strict anaerobe and forms oval spores which are situated near or at the ends of the bacilli. It

grows luxuriantly on alkaline media at 18 to 25°C., and the cultures exhale a sharp rancid odour of butyric acid. At temperatures higher than 37°C. it grows rather sparingly and without the formation of toxins. The spores, however, are not of a very resistant type as they are killed by exposure to 80°C., heat for one hour. The bacillus forms an extraordinarily poisonous toxin. Boiled pork rendered alkaline and containing 1 per cent. each of grape sugar and peptone 2 per cent., gelatin, forms an excellent medium for obtaining a highly toxic and luxuriant growth. It is a very remarkable fact that the bacillus does not grow on pork containing 6 per cent. salt. Well-pickled foods always contain a sufficient (about 10 per cent.) quantity of salt, therefore, are not infected with it. Again, the toxin of botulism is rendered inactive by heating to temperature of 70°C. for one hour. Boiling, therefore, is a good prophylactic against botulism. Furthermore, the toxin is easily destroyed by light. Van Ermengem has classified *Bacillus botulinus* in a group of bacteria called "toxigenic saprophytes," which do not multiply in the living body but act only through their virulent toxins, resembling in this respect the higher vegetables like *Atropabelladonna* (deadly nightshade), *Strychnos nux-vomica* or *Claviceps purpurea*, which produce toxic principles, virulent only when taken into the alimentary canal.

**Symptoms of Botulism in Man :—**The toxin of *Bacillus botulinus* chiefly affects the central nervous system and the symptoms are very suggestive of atropine-poisoning. They consist in disturbances of vision, such as dilatation of the pupil, and paralysis of oculomotor (mydriasis), trochlear, abducens facialis (ptosis), lachrymal and trigemini nerves. These optical symptoms are pathognomonic. In addition, the cases exhibit general indisposition, dryness of throat, bodily pains, pronounced debility, vomiting, persistent constipation, retention of urine, or more rarely diarrhoea. According to Van Ermengem (1913) botulism is characterised as follows :—

1. By an increased or decreased secretion of the saliva and mucus of the mouth, pharynx, etc.
2. By a more or less marked external or internal ophthalmoplegia (blepharoptosis, mydriasis, paralysis of the accommodation centre, diplopia, internal strabismus).
3. Dysphagia, or aphagia, aphony, persistent constipation, retention of urine.
4. Absence of fever and of sensory and cerebral disturbances.
5. With these symptoms respiratory and cardiac disturbances are often associated which may cause death more or less suddenly with symptoms of bulbar paralysis.
6. Finally, the characteristic symptoms (mydriasis, ptosis) appear, at the earliest, 12 to 24 hours after eating the suspected food material. They are often ushered in with temporary gastro-intestinal symptoms. These develop gradually and do not appear until after several weeks.

**Mortality :—**The death rate in cases of botulism is about 25 to 30 per cent. much higher than in other types of meat poisonings.

As mentioned before, the symptoms of botulism are entirely due to a bacterial toxin produced by *Bacillus botulinus*

which being an anaerobe requires anaerobic conditions in which to develop its toxin. The vehicle of infection, therefore, is frequently some type of food packed under conditions excluding free air passage, such as, tinned meats, fruits and vegetables and sausages prepared from objectionable meat from cases of emergency slaughter and unclean sausage casings. There is plenty of evidence to show that *Bacillus botulinus* is a normal inhabitant of the surface layers of the soil, and that it may therefore easily gain access to vegetables, fruits and meat.

**Preventive Measures:**—For the prevention of botulism, Van Ermengem has formulated the following principles—(Van Ermen-gem 1925.)

1. Preserved food substances, which are exposed to anaerobic bacteria, must never be consumed in a raw state, but should be properly cooked.
2. Preserved food substances which by a rancid or butyric acid-like odour arouse suspicion should be excluded from consumption.
3. For pickling, only such brine containing at least 10 per cent. common salt should be employed, as the *Bacillus botulinus* cannot multiply in this solution.

In addition, instructions should be issued to the public on the proper preparation of sausages from absolutely sound and wholesome meat. From a therapeutic point of view the antitoxin serum prepared by Kempner for treatment of botulism is worthy of consideration. Again, the public should be warned against eating any meat that is decomposed, rancid or otherwise malodorous. Stress should further be laid against eating strongly spiced sausages, as sausages that are carelessly prepared from diseased and decomposed meat are often strongly spiced or otherwise treated to conceal their disagreeable taste and dangerous qualities.

### (3) MEAT POISONING AS A RESULT OF INFECTION OF MEAT WITH STAPHYLOCOCCI. (LOVELL 1932).

Cases of meat poisoning have recently been reported from America in which staphylococci are considered to be the cause. Jordan (1918 and 1925) has described several cases in which the vehicles of infection were layer cake, chicken gravy, Christmas cake and cheese. From these various foodstuffs staphylococci have been isolated, both the albus and aureus varieties. He has recorded cases of about 109 human volunteers who swallowed varying quantities of sterile broth filtrates of these staphylococcal cultures. Symptoms of

vomiting and diarrhoea appeared within two to four hours after partaking from 2 c. c. to 10 c. c. of the filtrate. The symptoms and incubation period of the experimental and naturally occurring illness were nearly identical. It is stated by Jordan (1931) that staphylococcus food poisoning differs in several respects from *Salmonella* food poisoning. The incubation period is very short from two to four hours: symptoms are very severe, accompanied by great prostration, but recovery occurs, there being no recorded death. The sterile broth filtrates of cultures of the causal staphylococcus produce characteristic symptoms when swallowed even in such small doses as 2 c. c. According to Dack, Cary and Harmon (1928) even 145 c. c. of *Salmonella* filtrate is innocuous when swallowed by human volunteers. The source of the staphylococcus contamination of food has not been determined, although cows' milk and human throats have been suggested as possibilities.

### (4) MEAT POISONING DUE TO THE TOXIC ACTION OF OTHER BACTERIA, SUCH AS *BACILLUS COLI*, *PROTEUS VULGARIS*, ETC.

Under this head are included cases of meat poisoning caused by the ingestion of meat containing poisonous toxins of certain organisms that lead a saprophytic existence in dead matter and do not, as a rule, produce any specific infectious disease in living man or animals. Such organisms are not found in muscular tissue at the time of slaughter, but only gain access to the meat as a result of post-mortem invasion. Quite often such disease-producing meat is apparently normal looking but sometimes it is visibly changed and decomposed exhibiting unpleasant alterations of appearance and consistency, smell and taste due to the action of putrefactive bacteria.

By the term "putrefaction" is meant a highly complex process, or rather a complex of processes, whereby large molecules of proteins are broken up into progressively smaller groups and ultimately into relatively simple or actually elemental end-products such as, ammonia, carbon dioxide, methane, mercaptan, sulphuretted hydrogen, water, free nitrogen, hydrogen, etc. The term "decay" differs from "putrefaction" to a certain extent. Decay proceeds on the surface of the substratum in the presence of an excess of oxygen and eventuates very quickly in the complete splitting up of the proteins or other complex organic molecules, without the evolution of offensive by-products, while putrefaction, on the other hand, proceeds in depths of the organic substance, where there is little or no atmospheric air, and goes on step by step, each stage being characterised by the formation of special products, some very offensive, of diminishing

degrees of complexity. From the chemical standpoint the following stages may be distinguished :—

- (a) Products of protein hydrolysis—proteoses and peptones.
- (b) Amino-acids such as leucin and tyrosin.
- (c) Aromatic compounds, such as phenols, kresol, indol, skatol, etc.
- (d) Amines, diamines, etc. Ptomaines belong to this group, as putrescin (tetra-methylene-diamine)— $\text{NH}_2 \text{CH}_2 \text{CH}_2 \text{CH}_2 \text{CH}_2 \text{NH}_2$ , cadaverine, (penta-methylene diamine), etc.
- (e) Simpler bodies, like ammonia, carbon dioxide, methane, sulphuretted hydrogen, free nitrogen and hydrogen, etc.

The above stages do not necessarily occur consecutively, they may be arrived at as the result of processes going on simultaneously but with different degrees of intensity in various portions of the decomposing mass.

The most interesting substances amongst these are those comprised under the head (d), viz., ptomaines. They play an important role in the production of outbreaks of meat poisoning. Ptomaines are alkaloid products of bacterial activity and are very complicated in character, only a few of them being partially volatile. Short of analysis, it is impossible to tell whether meat of any kind contains any ptomaines, though staleness and symptoms of decomposition afford presumptive evidence that they may be present. Moreover, they are products of two classes of bacteria, the aerobic, present comparatively near the surface, and the anaerobic, present in deeper tissues. Most of them being practically non-volatile, cooking has no effect on them. By cooking the bacteria themselves may be destroyed, and the further production of ptomaines arrested for the time being, but the ptomaines actually present in the food are not rendered innocuous even by prolonged application of high temperature.

All ptomaines are not necessarily poisonous. Some are non-poisonous, or at any rate, less so than ammonia, such as putrescin. Cadaverine, neuridin; others like muscarin ( $\text{C}_5\text{H}_{15}\text{NO}_3$ ) neurin ( $\text{C}_5\text{H}_{15}\text{NO}$ ), Cholin ( $\text{C}_5\text{H}_{15}\text{NO}_2$ ), sepsin ( $\text{C}_5\text{H}_{15}\text{N}_3\text{O}_2$ ), etc.

According to Van Ermengem, two saprophytes are most important in the etiology of this group of meat poisonings. They are the *Bacillus coli* and *Bacillus proteus* with its numerous varieties, like *Proteus radians*, *Bacillus cellulaeformis*, *Proteus vulgaris*, etc. The injurious action of these bacteria consists principally in the formation of toxins, which are not destroyed by ordinary cooking, boiling or roasting of meat, although they are somewhat attenuated. *Proteus* is a highly pleomorphic bacillus endowed with a powerful peptonizing enzyme by virtue of which it liquifies the culture-gelatin in a highly characteristic manner. It is

an actively motile bacillus, non-sporing; it usually forms grey colonies sometimes greenish or fluorescent. Together with the sporing forms like *Bacillus subtilis* and *Bacillus mesentericus*, *Proteus* exhausts the oxygen in the depths of the substratum and thus renders possible the growth of the organism to which is due the abominable odour of genuine putrefaction. These organisms are strict anaerobes, motile and often provided with terminal spores, like *Bacillus putrificus coli*. In addition to *Proteus* and the *Putrificus* group of anaerobes, *Bacillus coli* is very often present in putrefying mixtures, either in its typical form or in one or more of its manifold varieties. It plays the same role with regard to carbohydrates that *Proteus* and *Putrificus* do with regard to proteins.

The manifestations of these meat poisonings vary considerably, and are similar to those which are observed in other kinds of poisonings by meat. Nausea, vomiting, diarrhoea, giddiness, headache, dizziness and debility occur, which may increase to fainting; while in children and weak persons cholera-like symptoms have also been observed. Recovery is the rule, but deaths have been observed, especially in children.

The recognition of the poisonous quality of meat belonging to this group is practically impossible, as has been pointed out before, as objective changes are frequently entirely absent, notwithstanding the presence of the poisons. In decomposing meat signs of putrefaction are tested by Eber's test which is based on the fact that when ammonia and hydrochloric acid vapours combine gray to white sal ammoniac clouds form. In this test one part pure hydrochloric acid, three parts alcohol and one part of ether are mixed together and preserved in a closed vessel. A test tube 2 cm. in diameter, 10 cm. in length, receives enough of the reagent to cover the bottom of the glass to a depth of about 1 cm. It is then corked and shaken once. A sample of the material to be examined is then rubbed with a clean glass rod, or, if its consistency is still quite firm, a small piece of the material the size of a pea is fixed to the rod by adhesion. The rod thus prepared is quickly dipped into the glass filled with the fumes of hydrochloric acid, alcohol and ether, so that its lower end sinks to a depth of 1 cm. above the surface of the fluid and so that it does not touch the walls of the vessel. If ammonia is present, a cloudiness appears after a few seconds, which sinks down at the end of the glass rod or surrounds it. This reaction increases in intensity with the degree of putrefaction. This test is not applicable to pickled meats on account of the presence of trimethylamine. The same applies to fish, sardines, etc.

For the prevention of this group of meat poisonings it is necessary to exclude all such meat from traffic in which putrefaction has been demonstrated, or which shows manifestations of decomposition. Only meat of impeccable and unobjectionable quality should be purchased for use, and wherever some doubt exists as to the quality of meat, it should be thoroughly boiled, roasted or cooked before use. Chopped meat should not be allowed to be kept for long periods in summer season.

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# NASAL GRANULOMA OR NASAL SCHISTOSOMIASIS IN CATTLE.\*

BY

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I have ventured to read the following few lines before you on this now well-known subject of Nasal Granuloma or Nasal Schistosomiasis in cattle, because it appears to me to be one of the serious diseases of cattle which confronts the profession and demands our immediate and concerted action to eradicate it by curative and preventive measures. It is admitted that this disease is of economic importance to the ryot on the one hand and of considerable professional interest to the Veterinarian on the other. From a humanitarian point of view the distressing symptoms exhibited by an affected animal never fail to attract the notice of a passer-by and excite his pity.

Known as Korattai or Penisum in the Tamil Districts and Busa or Mukku Pinchi in the Telugu parts, this disease has been prevalent in many parts of this Presidency for a very long time, but how long I do not know. This disease is known to every ryot as one of the two incurable diseases of cattle the other one being the so-called "chronic luxation of patella."

Unfortunately the ryot does not recognise the disease until it is sufficiently advanced. His only anxiety then is to get rid of the affected animal, as soon as possible, because he thinks it is incurable. He takes it to the nearest cattle market and sells it for any price he can get. Thus, an affected animal passes on from hand to hand which actually comes to spreading the disease from village to village. This has been going on for the past several years and we have now a large number of villages infected with this disease. Let no one imagine that I am exaggerating things when I say that a single affected animal is quite enough to infect the cattle population of a whole village if the necessary conditions for the spread of the disease exist there. This I submit is my personal experience of at least one village where almost every animal contracted the disease from a single affected bullock brought into that village.

From the year 1931-32 onwards the number of cases that sought treatment at the Veterinary Hospital at Tiruvannamalai and the number of villages from which they were brought have increased. I have to-day a list of 16 villages belonging to Tiruvannamalai Taluk all within a radius of about 10 to 12 miles where this disease is pre-

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valent now. In addition cases were brought for treatment from villages belonging to Gingee, Tirukoilur, Tindivanam and Kallakuruchi Taluks of South Arcot District. From the information gathered from ryots in the weekly cattle market at Tiruvannamalai and by my examination of animals that are exhibited for sale there, I am led to believe that the disease has covered a vast tract of ground and our task of combating it is really very great.

Since I am placing before my professional brethren my personal experience with this disease, I think I will be pardoned if I were to tell you, in a few words, all that I learnt about it from the very beginning of my professional career. It was about the year 1919, that I first came across a batch of animals suffering from the disease in a village adjoining Thathyangarpur near Thorayur in Trichinopoly District when I was a Touring Veterinary Assistant Surgeon. I did not know what it was then. All the same I started treating those cases, by cutting off the growths, and washing the nostrils with solutions of copper sulphate, sodium chloride etc. This treatment of course, gave no satisfaction to any one including myself. But wherever this disease was prevalent, I had a large number of cases for my tour case register. I was at that time informed by my seniors that it was a common complaint in some of the villages and no specific treatment was known.

The year 1921, marks an important period in the history of our profession. It was in that year that our confrere Mr. Parthasarathi Naidu announced to us, in an article published in the Madras Veterinary Journal his successful treatment of Nasal Granuloma in cattle with antimonium tartaratum. Since then, this treatment has been adopted by many and we have had the benefit of their experience from their reports published. As a result of knowledge accumulated in this manner we are now in a position to say that antimonium tartaratum is a specific for Nasal Granuloma in cattle or more correctly, Bovine Nasal Schistosomiasis.

**Definition:**—This may be described as a chronic inflammatory condition of the nasal mucous membrane of cattle induced by the activity of a parasite—*Schistosoma Nasalis* and its ova which cause the formation of diffused nodular growths of varying sizes which ulcerate and discharge a muco-purulent material containing the ova of the Schistosome or the parasite or both causing at the same time progressive occlusion of the nasal passage and thereby rendering the respiratory action of an animal difficult and painful.

The respiratory sound produced by such an animal is very much akin to a snore and for this reason, perhaps this disease is called by some as 'Snoring disease', and Korattai in Tamil language signifies

this. Since we know the exact cause of this complaint now, the correct scientific term to be employed appears to be Bovine Nasal Schistosomiasis.

**Animals affected.**—Cattle, cows, bulls and bullocks that go out for grazing are affected, suckling calves have not been seen to be affected. In one instance the nasal washings from a calf of 7 months, born of a cow suffering from the disease, submitted to the Principal, Madras Veterinary College contained ova of the schistosome. The owner definitely told me that this calf never went out of the house at any time. How this calf got the disease requires to be explained.

Buffaloes are said to be affected, but I have not seen any yet. In a village where about 70 per cent. of the cattle were suffering from this disease, the sheep and lambs exhibited symptoms very much resembling those in cattle i.e., ulceration and thickening of the nasal mucous membrane together with the muco purulent discharge. Materials from these cases submitted to the Principal proved negative. A sheep showing very bad symptoms was purchased from this village and sent to the college for investigation, under the personal instructions of the Director, Veterinary Services, Madras. This animal also did not reveal any sign of schistosome infection.

**Etiology.**—The cause of this disease remained a mystery till quite recently. It is now definitely understood through the reports published by various research workers in the different important laboratories in this country that a schistosome is responsible for its causation. This discovery has not come a day too soon. Nevertheless every field worker ought to be thankful to the research workers for the very valuable knowledge given to us through their toils. The life cycle of this parasite has been worked out and we now know what line of attack we have to adopt in the eradication of this disease.

This parasite being a schistosome, requires an intermediate host for its propagation. This host is known to be a fresh water snail of a particular kind. Its life cycle may be described as follows. An affected animal throws out a number of ova of the schistosome through its nasal discharge, in water, while drinking in a pool or tank. These ova burst and liberate very actively swimming objects known as miracidia. These swim fast in the water and begin their search for the snail, the intermediate host. They pierce through the snail its digestive gland and undergo development into cercariae. These cercariae emerge out of the snail. These are endowed with powers of swimming and remain in water only to pierce through the skin or mucous membrane or devoured in water by a susceptible animal to complete their life cycle. In the animal these cercariae enter the circulation by getting into the blood vessels and finally get

pumped by the heart and reach their place of predilection—the nasal mucous membrane. In this region they become sexually matured in the veins and begin laying eggs which in trying to come out of the animal's nasal mucous membrane produce certain changes which constitute the lesions of the disease.

**Symptoms.**—Every animal that comes to an institution for treatment is more or less in an advanced stage of the disease, manifesting all the characteristic symptoms, *viz.*, a snoring noise that could be heard several yards off, extended neck and dilated nostrils with a thick mucopurulent discharge, and a mass of diffused granular growths that almost block the nostrils. In the early stages, however, the symptoms do not attract any attention. There is a slight hyperaemia of the mucous membrane accompanied by a discharge which can be easily mistaken for ordinary catarrh. After a time the mucous membrane becomes ulcerated and the discharge assumes a thicker consistency. This when cleaned presents an area with a number of small spots from which blood oozes out as though pricked with a pin. The next stage is the well advanced condition described already. It is then that the animals are unable to work and eat. They seem to fight for breath when they take up a mouthful of straw. Consequently they lose condition and become debilitated.

**Diagnosis:**—The snoring noise, the extended condition of the neck, the occluded nostrils and the thick discharge therefrom will enable one to suspect nasal granuloma in an animal even from a distance. Microscopical examination of the discharge will clear any doubts that might arise in respect of animals in the initial stages of the disease.

**Microscopical Examination:**—A drop of the fresh nasal discharge from a suspected animal on a glass slide under a cover slip seen under low power reveals the ovum or the meracidium. The ovum is boomerang shaped and contains the meracidium which may be still or moving. The escaped meracidium is very active and is seen moving like a paramicium. The parasite can sometimes be obtained from deep scrapings. This also moves about fairly rapidly and becomes still after a time.

**Treatment:**—Varied were the treatments to which an affected animal was subjected before the use of tartar emetic was known. Scraping the growths and washing the nasal cavity with astringent and antiseptic solutions were the treatments adopted by us. In the country parts, quantities of juices of various herbs are poured into the nostrils. Some cut off the growths and cauterise the surface with quick lime. A large number of animals could often be

seen with branded marks across the nose in many infected villages. This is done with the belief of giving some relief to the animal's breathing difficulties. The least harmful treatment seems to me the practice adopted by some, of pouring some bland oil into the nostrils to soothen the passage and to enable the animal to expel the thick discharge more quickly and thereby render its breathing easy.

Now that we know the rational treatment for this disease, the adoption of any of the previous methods of treatment of rubbing copper sulphate etc., in my opinion, amounts to cruelty to the affected animal.

Antimonium-potassium-tartarate is the drug employed in this disease. It is given intravenously, and when administered with due care with regard to the dose and technic, is a curative agent, and its cost is within reach of every poor ryot.

**Dose.** I employ a dose of 3 to 4 grains of antimonium tartar for every 100 lbs. body weight depending upon the condition of the animal. The injection is repeated every four days. This period may be varied according to individual cases.

The injections are given at about 10 A.M. and after the injection of the drug the animals may be allowed to go back to their villages even to a distance of 6 or 7 miles after 3 or 4 P.M. About 4 to 6 injections are required to bring about the cure. The dose is tolerated well and does not set up any reaction. With this dosage 40 animals were treated in the year 1931-32, 120 animals in 1932-33 and over 150 cases in the current year invariably with good results. I say invariably because some of the ryots stop away after one or two injections and some re-visit after prolonged and irregular intervals.

**Technic:**—The required quantities of the drug are weighed and put into separate test tubes containing normal saline and sterilized by boiling. A 20 c. c. Hypodermic Syringe with 2 or 3 needles is also sterilized by boiling. The cooled solution is drawn into the syringe and is ready for injection. The animal is cast and secured. The jugular vein is raised by an assistant by applying pressure on the jugular furrow at the base of the neck. The hairs on the raised vein are clipped off at a convenient spot and the surface painted with Tincture Iodine. The skin is pierced through first and then with the point of the needle the vein is felt and is punctured a little away from the skin puncture. By slightly drawing the piston towards the operator, the blood flows into the syringe and discolors its contents, if the needle is in the vein. Now the piston is pushed down gently and when the whole quantity has been injected the piston is again withdrawn drawing thereby a small quantity of the blood. This

not only ensures that the injection has been correctly made but also removes the chances of any drop of the solution getting under the skin. The seat of injection is firmly held with the thumb and the fore finger of the left hand and the needle is then withdrawn and iodine is again painted at the seat of puncture.

*Precautions and points of interest:*—1. A cow in calf about two months aborted after the very first injection. Therefore pregnant animals may not be treated unless the owner is prepared for that loss and the condition of the animal is so grave.

2. Very weak and debilitated animals may first be examined and treated for sharp molars if necessary, atonicity of the digestive tract etc. and then subjected to treatment.

3. Animals with the history of pain in the chest, difficulty in going up hill with a load, occasional coughing and tympanitis, poor feeding and improper rumination may be suspected for traumatic pericarditis or cystic lungs and may be avoided or treated only after careful examination.

4. Animals which do not eat properly, look dull and do not ruminate satisfactorily after an injection should be watched, treated and when everything is normal subjected to treatment again.

5. If one course of treatment does not bring about a cure, the owner may be instructed to bring the animal again for another course after a month and the dose increased.

6. If one animal in a pair is brought for treatment, it is always safe to send for the other animal and examine it, not forgetting the microscopical examination of the discharge in doubtful cases, and to treat that animal also.

7. If one is not sure that the needle has entered the vein and after repeated trials fails to puncture it on one side, the other side may be tried. If by that time the solution in the syringe has become discoloured making it difficult to see the blood coming up the syringe, the contents of the syringe may be discarded and a fresh solution may be used. I beg to suggest that under no circumstances the solution be injected in a doubt, because the consequences are very serious. Not only is the poor animal made to suffer great pain unnecessarily but the ryots also will be frightened and will not come for treatment after such an experience.

*Affected animals and how they spread infection:*—It is believed by many a ryot that an affected animal removed to a non-infected locality is cured of the disease. This is not only an incorrect but a dangerous belief. I am afraid that this mistaken belief is one of the causes that has led to the spread of the disease over a vast area.

An affected animal remains so for a very long time even when taken to a free area. I do not know if it ever gets cured spontaneously. I know of a cow which had a mass of growth in the nostrils with the attendant discharge and difficult breathing for over two years. It has not been going out for grazing these two years. Still it is showing definite lesions and the clinical symptoms of the disease have not decreased. The moment some of the affected animals are taken out of the scene of infection because they do not get the daily dose of infecting cercariae in drinking water from the infected tank or pond, they appear to get better to some extent. This improvement apparently depends upon the degree of infection they have had.

The danger of the removal of an infected animal to a non-infected area where it is likely to mix with the village herd and drink water from the common tank must be apparent to everyone now. But there appears to be no danger of such animals spreading the infection in a non-infected town where there is no chance of their going out for grazing and infecting a common well or tank.

*Prophylactic measures:*—The discovery that this disease is caused by a schistosome, prophylaxis appears to be easy theoretically speaking. If that intermediate host is destroyed the disease will naturally disappear. This host is a snail and the snail is easily destroyed by weak solutions of sulphate of copper and by keeping pools and tanks free of weeds. Therefore tanks from which village herds drink water are to be cleared of the moss and treated with this simple and cheap remedy. This was tried in a village Nammiandal where the disease was very widely prevalent and where a large number of cases were treated with antimony tartar injections. Injections did good, and after the adoption of preventive measures, not a single case has come from that village for treatment now.

M. R. Ry. Rao Sahib H. C. Sampath Iyengar Avergal, District Veterinary Officer, Vellore visited this village and has seen some of the cases that were cured by this treatment.

Quite recently I visited a village with a friend of mine as he was informed that nasal granuloma was prevalent there. On enquiry, I found that the disease was prevalent in that village a few years ago. The disease was introduced by the purchase of a pair of affected bullocks and the whole village cattle got the disease and suffered from it for some years. Now the village is completely free. I found out that there was complete failure of rains during a year and every tank became dry. Since then the disease has disappeared from the village and most of the affected animals were sold away for very small amounts and some of them died.

Now gentlemen, I have placed before you all that I considered, in my humble opinion, important and useful as a result of my

observations during the past over 7 or 8 years in the belief that they will be of interest and use to at least some of the members of our profession who are interested in it. I request that those who have had better experience than myself to give out their experiences so that we may all share that knowledge.

I have not mentioned certain points connected with this subject because I have no personal knowledge or experience of them, for instance the use of antimoson which is said to be better than antimonium tartarate, the loss of some animals in certain areas, even with very moderate doses of antimonium tartar, etc. I trust, many will speak on those points from their own experience.

Before I finish, I beg to express my indebtedness to Doctors R. Subbarama Iyer, M.B.B.S., D.T.M., and P. Chandu Nambiar F.R.C.S., Civil Assistant Surgeons in charge of Government Hospital Tiruvannamalai for their help and to thank Mr. M. Anantnarayana Rao, for kindly going through this paper and giving me necessary information on the life cycle of the parasite and the mode of infection.

I take this opportunity to express my very sincere thanks to Khan Bahadur Mohommad Tamuzzidin Quadri Sahib Bahadur, Revenue Divisional Officer, Tiruvannamalai and M.R.Ry. R. Venkata Reddiar Avl., Tahsildar, Tiruvannamalai for kindly impressing on the ryots the value of curative and prophylactic treatment against this disease and also personally visiting one of the villages on more than one occasion when the investigation of this disease was being carried out by M.R.Ry. M. Anantnarayana Rao, Avl.

### FILARIA HAEMORRHAGICA IN CATTLE AND ITS TREATMENT.

BY

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This disease is fairly common in Indian cattle, although very little is said about this in Veterinary literature. The animals affected are mostly plough bullocks. Cows are rarely affected and the disease has not been met with in buffaloes. The malady is usually common in summer months and declines with the onset of winter. Slightly raised nodules containing parasites, appear, beneath the skin. These nodules break down and local haemorrhages result.

The etiological factor responsible for the formation of the nodule is a parasite known as *Filaria haemorrhagica*, so named from

the haemorrhages it produces on the skin. The parasite has been described as follows:—

It is a white filiform parasite, the male of which is 28 mm. long and is possessed of two markedly unequal spicules. Female is 40-70 mm. long and has the vulva situated near the anterior end. The cuticle of the anterior extremity is covered with numerous elliptical and circular papilliform elevations (hence the name *Parafilaria multipapillosa*). Male and female live side by side in the subcutaneous and intra muscular connective tissue of horses, oxen and mules. The life history and intermediate host are unknown (Baylis).

**Symptoms** :—The usual symptom is the formation of a nodule beneath the skin. This breaks down producing local haemorrhage. Such a nodule if dissected or pressed brings out the filaria parasite. The regions affected are usually the back, neck, chest, quarters, legs, perineum. The haemorrhages may be very many or scanty depending upon the severity of the infection. In a severe case the general condition of the animal is impaired and it becomes rather difficult for the farmer to keep the bullock in work. There is no general constitutional disturbance but the animal gets debilitated through haemorrhages and easily tired.

**Treatment** :—Treatment may not be called for in the milder cases but in certain bullocks, unless the infection is severe and there is multiple formation and breaking down of the nodules. One per cent. Tartar Emetic solution administered intravenously in doses of 100 c. c. has given excellent results; one injection has effected a cure in the majority of cases. The breaking down of the nodules ceased almost immediately after the injection. In some cases the disease re-appeared after a fortnight of the injection, in a milder form, but as the evolution of the parasite is not known, it could not be definitely said whether it was due to reinfection or to a recrudescence. In such cases a second injection is necessary, when the recovery is complete and permanent, and reinfection is not likely to occur during the remainder of the season.

**Technique** :—The Tartar Emetic solution may be prepared by dissolving 15 grains of the drug in 150 c. c. of boiled water. This is then filtered before use.

About ten cases have been treated by the above method with very encouraging results. These results have also been confirmed by some of my colleagues, but it is desired that this treatment may be given a more extensive trial and the results communicated through this Journal.

My thanks are due to Mr. J. F. Shirlaw, M.R.C.V.S., Professor of Pathology, Punjab Veterinary College, Lahore, who has very kindly gone through the article and made the necessary correction.

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## Clinical Articles.

### PASTEURELLOSIS IN A BUFFALO

By

M. MASUD, B.A., M.R.C.V.S., Lahore.

Pasteurellosis in cattle is one of the greatest problems the veterinarians have to tackle in India. The disease although so common in low lying areas in the country that it decimates our cattle especially the buffaloes every post rainy season, yet sometimes



Case showing the enormous Swelling of the vulva with Petechiae, it proves a mystery which often defies the keen eye of an experienced clinician, and is not brought to light without the help of laboratory methods of diagnosis. Such atypical cases are not uncommon. In

a recent outbreak at Lahore some cases were encountered in which neither the throat oedema nor any appreciable degree of respiratory trouble was present. However a hot huge painful swelling occurred at the vulva. Unfortunately only one case was admitted to the hospital and observations made. The owners of the rest of the animals did not agree to their animals being admitted to the hospital, and it was rather inconvenient to treat and look after them where they were. The writer finds no mention of such cases on record and so would like to describe the case which was suspected for malicious poisoning with 'ratti' (*Abrus Precatorius*) or arsenic powder administered by a vaginal puncture. (Such cases have been often suspected in India). The case is described below :—

A six year old buffalo admitted to the hospital on 23-11-33. Dull, listless, off food, looking very much exhausted. Temperature 103° F., respirations almost normal. Pulse frequent and wiry—100 per minute. Huge swelling of the lips of the vulva with congestion of mucous membrane. Tremors of the abdominal muscles. Fresh preparations from the exudate in the swelling and the blood film negative. Vulva washed and fomented and a stimulant draught given, but the animal died the same night.

*Post-mortem Examination* :—Reddish fluid in the peritoneal, pericardial and thoracic cavities, peritonitis and slight congestion of the parietal pleura. Myocarditis and endocardial haemorrhages in the left ventricle. Slight emphysema of the apex of right lung. Acute abomasitis and enteritis with petechial haemorrhages, kidneys slightly congested. Vulva inflamed and lips very much swollen. Surrounding connective tissue oedematous, thickened with small haemorrhages. Blood film from heart showed bipolar organisms with some anaerobes. Culture from heart blood prepared. A rabbit was inoculated with 5 c.c. of this culture. Died within 20 hours and Bipolar organisms were recovered from heart blood.

*Discussion* :—The above case was apparently considered to be a case of malicious poisoning with 'ratti' administered per vulva and it was only after the postmortem examination that the suspicion of "haemorrhagic septicaemia" arose. Further the microscopic examination of smears from the lesion and blood remained negative till the death of the animal and this fact has been observed and recorded by other workers also. The bipolar staining organism obtained from heart blood after death was very scanty in the smear, but grew very luxuriantly on serum agar.

It is more or less an admitted fact that the infection occurs per os though it has not been proved conclusively by experiments which have been only partially successful. The failure of some of

these experiments is attributable to the absence of wounds or scratches on the buccal mucosa. This mode of infection carries great weight in view of the fact that even small amounts of culture inoculated subcutaneously invariably produces the disease. On account of the seasonal prevalence of the disease and the analogy of similar organism in human plague, the possibility of the disease being carried by an intermediate host has been suggested. The inoculation by an insect seems very reasonable in the light of the success of experimental inoculation. In the above case therefore one would strongly suspect the possibility of the organism getting inoculated into the vaginal mucous membrane from the soil through the vulva, or through some minute scratch or abrasion on the vulva. This could not be detected after the development of the lesion, and no signs of traumatic injury was found. However even the presence of a slight vaginal catarrh could help towards establishing the lesion. Again the localised forms of pasteurellosis are quite common whether there is evidence of septicaemia or not. Could not this be a case of localised form, the organism having originally gained entrance to the body per os? No history of any inflammatory condition of the uro-genital tract, recent parturition, or heat could be traced. In the presence of these it could have been reasonably surmised that due to some local defect in the vitality of the part, it proved a good medium for the propagation of the organism ending in such an unusual lesion. But the occurrence of more than one case with identical lesions rules out the possibility of local inoculation or derangement and the writer is inclined to think that it was one of the various atypical forms which the disease often exhibits.

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**SOME OBSERVATIONS IN THE TREATMENT OF BOVINE NASAL GRANULOMA.**

BY

B. DORASAMY IYENGAR, G.M.V.C.

*Veterinary Inspector, Hanamkonda, Hyderabad-Deccan.*

Bovine Nasal Granuloma was seen by me for the first time at Inugala, in Madira Taluqa of Warangal District, Hyderabad State, during the last summer, where I camped and toured in the surrounding villages inspecting cattle. During my stay at Inugala, I visited some tanks and ponds and about a mile from the village there is a channel, which is being used by the Dhobies for washing clothes. Here I found snails. It is not certain if these snails are responsible for producing the disease. It is said that the cattle go out for grazing in that direction, and from this it is evident that the source of infection is this channel, from which they drink water.

It is possible to think that cattle get affected outside the dominions also because the working cattle go out with carts to such places as Bezwada. Since the disease is found in Heifers and Cows it is proof positive that the infection is local for obvious reasons. From the foregoing it is concluded that the disease is confined to Inugala and the source of infection is local.

The next point is about the treatment with intravenous injection of Tartar Emetic. Without getting into details, I shall simply state that a three per cent 2½ c. c. solution, of Tartar Emetic per hundred pounds body weight, was injected.

Twenty two animals were treated and the following observations deserve recording :—

| No. | Name of Owner.         | Kind of animal. | Age.    | Weight.   | Dose.   | Date of treatment.      | Remarks.                                                                                                                                                                                |
|-----|------------------------|-----------------|---------|-----------|---------|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Karnad Potchi Reddy    | Bull            | 7 years | 1000 lbs. | 25 C.C. | 12-4-1933 and 18-4-1933 | Typical case. Injections produced no bad effects of any kind. Cured with two injections.                                                                                                |
| 2   | Talpa Reddy Kotareddy  | Bullock         | 6 "     | 704 "     | 17 "    | 12-4-1933 and 18-4-1933 | Inflammation of the dewlap and second injection pushed through and the animal improved. Third injection done without complications. Cured.                                              |
| 3   | Karnati Basvi Reddy    | Bull            | 4 "     | 605 "     | 15 "    | 12-4-1933 and 18-4-1933 | Inflammation of the dewlap and cured after the second injection.                                                                                                                        |
| 4   | Yerramalla Potch Reddy | Bullock         | 8 "     | 569 "     | do.     | 12-4-1933               | Cured with the first injection.                                                                                                                                                         |
| 5   | Yem Reddy Atchreddy    | Bull            | 6 "     | 676 "     | 16 "    | 12-4-1933 and 18-4-1933 | Two injections without any complications, improved. Snoring sound continued when eating grass. Refused further treatment for fear of complications. Any amount of advise was of no use. |
| 6   | Yerramalla Naga Reddy  | do.             | 4 "     | 452 "     | 11 "    | 12-4-1933               | One injection. No complication. Cured.                                                                                                                                                  |
| 7   | Karnata Kottareddy     | Bullock         | 8 "     | 668 "     | 16 "    | 12-4-1933 and 18-4-1933 | Two injections. Swelling of the dewlap and on seats of injection. Fomentation with hot ashes and Tincture Iodine paint, recovered from the swelling. Cured.                             |
| 8   | Vem Reddy Ram Reddy    | do.             | 6 "     | 809 "     | 20 "    | 12-4-1933 and 18-4-1933 | Two injections. Swelling of dewlap after first injection. Second injection done with difficulty. Abscess formation at the seat of injection, treated for it. Cured.                     |
| 9   | Yem Reddy Ramreddy     | Heifer          | 1½ "    | 279 "     | 7 "     | 12-4-1933 and 18-4-1933 | 2 injections. No swelling of any kind both the times. But she fell down unconscious about half an hour after the second injection. Cold water was dashed                                |

| No. | Name of Owner.        | Kind of animal. | Age     | Weight.  | Dose.   | Date of treatment.      | Remarks.                                                                                                                                                                                                                                                                                                                                                                   |
|-----|-----------------------|-----------------|---------|----------|---------|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10  | Yerramalla Kondareddy | Bull            | 5 years | 639 lbs. | 16 C.C. | 12-4-1933 and 18-4-1233 | over the head and copious drafts of butter-milk were administered. Regained consciousness got up and walked to her shed. Immediately after, she began to purge profuse watery stools which continued for 3 days. She was given rice Gruel for the purge. Cured of N. G. (this is serial No. 15 of the previous month.)                                                     |
| 11  | do.                   | Bullock         | do.     | 600 "    | 15 "    | 8-4-1933 and 12-4-1933  | Two injections. Swelling of the dewlap and also in seats of injections, hot fomentation and Tincture Iodine paint. Cured.                                                                                                                                                                                                                                                  |
| 12  | Yerramalla Kistareddy | do.             | 10 "    | 628 "    | 16 "    | 12-4-1933 and 18-4-1933 | Three injections. Got swelling at the seats of injections. Relieved with hot fomentation and Tincture Iodine paint. Cured.                                                                                                                                                                                                                                                 |
| 13  | Yerrampoosa Ramreddy  | do.             | do.     | 600 "    | do.     | do.                     | Two injections. No complications of any kind. Cured.                                                                                                                                                                                                                                                                                                                       |
| 14  | Yerramalla Kotareddy  | do.             | do.     | 500 "    | 12 "    | 12-4-1933               | Severe inflammation of the dewlap with first injection second injection done with difficulty due to the inflammation and a little solution got into the subcutaneous tissue. The result was severe inflammation with sloughing of a patch of skin about a span in diameter. Sore attacked by flies, maggots formed. Treated for all this and cured of these and also N. G. |

| No. | Name of Owner.                                   | Kind of animal. | Age.    | Weight.  | Dose.   | Date of treatment.                        | Remarks.                                                                                                                                                                                         |
|-----|--------------------------------------------------|-----------------|---------|----------|---------|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 15  | Yerrnapoosa Pira Reddy                           | Heifer          | 3 years | 433 lbs. | 11 C.C. | 12-4-1933                                 | One injection. No complications. Cured.                                                                                                                                                          |
| 16  | Yerrnapoosa Ramreddy<br>(Same man serial No. 13) | do.             | 1½ "    | 279 "    | 7 "     | do.                                       | do.                                                                                                                                                                                              |
| 17  | do.                                              | do.             | do.     | 329 "    | 8 "     | do.                                       | do.                                                                                                                                                                                              |
| 18  | Yerramalla Thimmareddy                           | Bullock         | 7 "     | 696 "    | 17 "    | 12-4-1933<br>and<br>22-5-1933             | Two injections. Improvement with first injection. Went to Bezvada after second injection and did not come even after 8 days. The solution was diluted up to 36 C. C. to avoid irritating effect. |
| 19  | Yerrnapoosa Pera Reddy                           | do.             | 20 "    | 739 "    | 20 "    | 8-4-1933<br>12-4-1933<br>and<br>18-4-1933 | Three injections. The animal was reported to have got over the disease, but had gone out and did not come all the days I stayed.                                                                 |
| 20  | Karuati Ayyapu Reddy                             | Heifer          | 1½ "    | 230 "    | 6 "     | 18-4-1933                                 | One injection. No complications. Cured.                                                                                                                                                          |
| 21  | do.                                              | Cow             | 6 "     | 400 "    | 10 "    | do.                                       | do.                                                                                                                                                                                              |
| 22  | Chakala Narsi Gadu                               | Bull            | 10 "    | 645 "    | 30 "    | 22-5-1933                                 | One injection of 7½ grains of the drug in 30 C.C. of water in order to avoid any local complication. Animal went to Bezvada and did not come back. Reported to be cured.                         |

*Conclusion* :—I am of opinion that the solution diluted three times will prevent all local irritation and will be as efficacious.

The dose of the drug works up to 1½ grs. per 100 lbs. body weight. Since in some cases there were digestive disturbances, etc., the dose may safely be reduced to 1 grain per 100 lbs body weight and will be efficacious.

Last, but not least, I have to heartily offer my thanks to Mr. M. R. Mahajan, M.R.C.V.S., who so kindly taught me the disease in all its aspects and let me carry out my routine of work in this connection.

### HERNIA VENTRALIS—UTERI\*

BY

ABDUL MAJID N. SIDDIQI, G.P.V.C.,

*Veterinary Assistant Surgeon Karachi, Sind.*

A big sized goat, aged 6 years, about to deliver, was brought to the R. C. Veterinary Dispensary for treatment for Mammitis. The mammae were extremely enlarged, so much so that they were nearly touching the ground. On palpation at the back of the udder, under the perenial region, the body of the foetus could be felt. On examination through the vagina, the os uteri was found to be closed and the uterus dropped down. It was diagnosed to be a case of Ventral Hernia, which contained the whole uterus and the foetus. The owner could not give any previous history of the case as to external injury or hurt, but he said that the goat was in that condition for the past one week or so.

As the period of gestation was full, removal of the foetus by operation was decided upon, with the consent of the owner. After rendering the seat of operation aseptic a longitudinal incision about 4 inches long was made at the most prominent part, below the perenial region. A thick clot of blood was noticed and on its removal the uterus was in view which was gently pulled out and opened. Two kids (one male and one female) were taken out alive and their umbilical cords ligatured and cut. As the uterus could not be reduced to its normal position hysterectomy was performed.

The operation was successful but the patient succumbed immediately after on account of previous exhaustion and shock.

Both the kids remained alive and did well.

\* Paper read at the 2nd Conference of Sind Subordinate Civil Veterinary Service Association, held at Karachi, on 21-3-34.

## SUCCESS OF TR. LOBELIA AETHERIS IN TETANUS.\*

BY

F. K. SOLANGI, G.B.V.C.,

*Reserve Veterinary Assistant Surgeon, Karachi, Sind.*

Readers of *Indian Veterinary Journal* may remember that an article on this subject by Mr. Mohomed Daood L. V. P., (Punjab) appeared in October 1932. When I read that article I had an ambition to try this treatment as soon as an opportunity occurred.

On 10th November 1932, a hackney carriage horse, dun c. b. gelding fell and injured his knees and was brought to the Hospital for treatment.

Apparently the injury was so grave that the owner was advised to have the animal injected with anti-tetanus serum to avoid the risk of contracting the disease (tetanus) but as the owner was too poor to get the serum, the dumb creature was left to the mercy of Nature.

The usual aseptic measures concerning the wound dressing were adopted and everything was going on well.

Five days after the commencement of the dressing, the owner brought the horse in the morning for treatment as usual but complained that the animal did not show the same appetite the previous night as before and it found difficulty in walking to the hospital.

Further examination revealed that the animal was developing symptoms of Tetanus. It was resolved to give Tr. Lobelia Aetheris and 5 c. c. of that drug with an equal quantity of normal saline solution was injected subcutaneously on the neck of the animal.

The same treatment was repeated with one day's interval and the animal recovered after 4 injections, and the dressing was continued to the knees till it healed.

The second case on which I had chance to try Tr. Lobelia Aetheris was a Chestnut c. b. mare used in a hackney carriage.

The owner brought the animal to the Hospital on 26th January 1934, saying that it was stiff and could not eat.

A thorough examination was made and found that the animal had a very bad form of thrush in both hind feet, which probably was the source of infection. The frogs were attended to and the same line of treatment as described above was adopted.

\* Paper read at the 2nd Conference of Sind Subordinate Civil Veterinary Service Association, held at Karachi, on 21-3-34.)

The animal got over the attack of Tetanus after 4 injections and it was discharged on the 7th February 1934.

A little swelling is generally noticed at the site of injection but disappears with fomentation.

## LOIN DISEASE OF CATTLE.

BY R. S. NARAYANAN, G.M.V.C.,

*Alor Star, Kedah, Malay States.*

Loin disease in cattle and buffaloes, "Sakit Tampar Punai Tenah" termed in Malay language, has been observed in this country. As indicated by the informative title, the disease manifests itself in sudden and complete inability of the animal to get up. The disease occurs in the "paddy-stalk" fields or "range grass" areas in animals of over six months old, and it has never been observed to occur in animals fed with dairy rations.

The onset of the visible evidence of the disease is usually abrupt to the surprise of the owner. From among his apparently healthy herd he suddenly observes that one of his animals is unable to rise. Such animals continue to feed without any temperature. The animal usually remains in a costo-sternal position, looks bright and alert. Micturition is found to be normal but defaecation is completely suspended. There is paresis of the loins and absence of tail movement. No swelling or abnormal hardness of the muscles or pain is noted over the loins or back or on rectal examination under the lumbar muscles etc. The paresis slowly extends to the anterior region, and the animal no longer maintains the costo-sternal position but rests on one side of the body with stretched neck. Even at this state the animal is able to take food and water. In the later stages (about the 2nd day) there is slight subnormal temperature (99.8°F) accompanied by deep respirations.

*Post-mortem notes* :—Nothing characteristic. Haemorrhages on the endocardium and particularly of the ventricle of the side on which the animal continually rests but not in animals killed in the early stages of the disease. Lungs, liver and spleen normal. Kidneys slightly congested. The mucosa of the abomasum, small and large intestines show congestion. The latter lesion is more or less constant.

The disease could not be transmitted to rabbits and guinea pigs. No specific organism was detected in the blood or smears taken from the different organs. Blood smears show slight anisocytosis, which condition is more or less constant in about 5 per cent. of the healthy animals examined.

The malady is peculiar in many ways. It differs from acute poisoning as there is no evidence of marked distress or acute symptoms.

By carefully analysing the history, symptoms and post-mortem lesions one has to contend that the malady is merely a digestive derangement.



Loin Disease of Cattle.



Loin Disease.

There are reports of loss of cattle from this condition each year. The loss is more or less regular. It occurs during dry or frosty weather (January to April). When the affection makes its appearance the cases encountered are scattered in different parts of the paddy tracts of the State. The disease appears to have no relation to the nature of the soil. The disease is seldom reported until it is far advanced. With the coming into force of the State legislation restricting exportation and slaughter of the female animals, the increased incidence of the malady is reported by the owners with a view to obtain the necessary permission for slaughter.

The writer has successfully treated one bull reported soon after the owner observed it, by giving 20 grs. of Pot. Permanganas in a pint of water at an interval of 2 hours followed by a drench containing Mag. Sulph. Nux. Vomica and Gentian. In the course of a week the animal made complete recovery.

As the basic trouble is apparently paresis of the intestinal tract death may be due to toxæmia brought about by the retention of the intestinal contents.

### BOVINE DYSENTERY OR WHAT IS IT?\*

BY

S. SESHADHRI IYENGAR, G.M.V.C.,  
Chidambaram, Madras.

Adverting to my article about this in one of the previous issues of this *Journal*, I find none were kind enough to come forward to clear my doubts.

It had been already informed that I had not met with cases of this kind in any place except here. I had already informed that this affection is a seasonal outbreak. This was first seen here by me in July 1931, and subsequently before December. In 1932 also cases were treated from the end of June. This year also it commenced in July and so far 25 cases were treated and there was one mortality, a this animal was very weak. In addition to the symptoms already noted, this year tympanitis was the first noticeable one in most of the cases.

The result of microscopical examinations had already been informed. I have not seen any disease with such symptoms in any of the text books. I write this again to clear some of my doubts, so that further investigation will be done as per the advice.

I request my brethren to enlighten me on these points:—

- i. What is the cause of the disease and what is the name.
- ii. Will infection of Strongyles, amphistosomes, etc., produce such symptoms.
- iii. What is the reason for the seasonal outbreak.

Oleaginous emulsions cure the disease.

The other peculiarity I find is that buffaloes are immune and not even a single case was brought within these three years.

Faeces from many animals were sent for microscopical examination. Of these 3 were declared to contain strongyles and trematode 6 to contain only Strongyles, 1 to contain ova of schistosomes spinidalis and strongyles, 1 to contain coccidia, 1 to contain Strongyle

\*Read at the All-India Veterinary Association Madras Branch Conference March 1934.

and amphystosomes, 1 to contain amphystosomes and the remaining negative. From a study of these, it is not to be said positively that the cause of these symptoms must be due to worms. Why should it not occur in other places? In a majority of cases it appears that strongyles play an important part. We must also think why should it commence in June or July every year? What will be the cause?

### AGALACTIA.\*

BY

V. PARAMESWARA MENON, G.M.V.C.,  
Puttur, Madras.

A Mysore cow, O. P. No. 1150, was admitted for treatment with the history that she had a normal delivery a week ago, and that her udder was completely dry, and there was not even a drop of milk for her calf. She had a full udder immediately before and after delivery, which began slowly to thin down in size day after day since calving, and at the time of admission *i.e.*, on the 12th day after delivery, she looked like a dry cow. The cow was not suckling her calf, when the latter made attempts to drink milk.

There was no induration of the mammary glands in any quarter, and there was no mastitis present. Her temperature, pulse and respirations gave no indications to suspect for any particular disease. Her appetite was good, and she took her normal ration of oil cakes and cotton seeds. She did not even refuse any portion of dry or green fodders. She was chewing her cud and alright. Dung and urine were also normal. Apparently for all purposes she looked healthy, had it not been for the total drying up of the milk yield. She was reported to have been giving 6 to 8 pounds of milk during the last lactation period about three years ago.

An intra-jugular injection of 80 c. c. of 1 per cent solution of Trypan Blue was administered on 7-1-34. The next day, *i.e.*, on the 8th instant the following mixture was prescribed.

Tonic powder 3 i  
Ammon. Chloride 3 iii  
Pul Nux Vomica 3 ii  
Soda Bicarbonas 3 IV  
Aqua ad O i  
M. F. T. Haust sig. atonce.

9—1—34. Continued the mixture. Milk yield for the animal was 1½ pounds.

\*Read at the All-India Veterinary Association, Madras Branch Conference, March 1934.

10—1—34. The mixture was repeated. To-day she gave 3 and odd pounds of milk in the morning and about 2 pounds in the evening. She suckled her calf. The milk was slightly tinged blue due to Trypan Blue, but there was no taste.

Plain tonic powders for four days' use were supplied with instructions to be given in a pint of cold water every morning, and the animal was discharged. She was also recommended to be given two rupees weight each of Fennel and Aniseed powders well mixed up with her ration for a course of one week.

The cow is now reported to be yielding six to seven pounds of milk a day.

Was the temporary drying of the milk due to incipient "Pyro"?

### PERFORATION OF THE STOMACH IN A PANTHER

BY M. L. GHOSAL, G.B.V.C.,

Veterinary Surgeon, Bikaner State.

*Subject* :—A young male panther, 6½ feet long, of the State Zoo Garden.

*History* :—The animal had his usual feed and was quite well on 12-5-34, next morning it was found lying half dead in the cage, with rigors of the shoulder muscles, short and shallow breathing and it expired at about 9 a. m.

Post-mortem examination at 5 p. m. revealed very bad smelling liquid stomach contents emptied into the abdominal cavity through a perforating wound, about one inch, in the stomach near the pyloric orifice.

Stomach contained pieces of small bones, of which one was about 3½ inches in length with pointed end in one extremity which obviously was responsible for this perforation.

### Hotchpotch for Veterinarians.

Colloidal manganese hydroxide in the treatment of Retained Placenta in cows:—When two pints of a 3 per cent. solution are injected into the uterus, contractions of the uterine wall are said to occur with resultant expulsion of retained membranes.

*Veterinary Abstracts Vol. 1 No 1.*

\* \* \* \*

The new method of obtaining small-pox vaccine from chicken eggs instead of from calf lymph, is the great achievement of Col. W. D. H. Stevenson and Dr. G. G. Butter. It promises the possible production of bacteria-free-virus for vaccination on a large scale, and is not so arduous or so expensive as the production of calf lymph.

*Veterinary Abstracts Vol. 1 No 3.*

\* \* \* \*

There is a deficiency of cystine, a sulphur containing organic compound, in the finger nails of some persons that are affected with arthritis. Sullivan and Hess injected colloidal sulphur into the blood stream of six arthritic patients, and noted that the symptoms of arthritis abated, and the cystine content of the finger nails returned to normal. Science 78:2021.

*Veterinary Abstracts Vol 1, No. 4.*

\* \* \* \*

Who has used a magnet?

Every experienced practitioner has had more or less difficulty in removing the small needle that was swallowed by the thick-necked dog, because it is not easy to definitely locate some of these unless one works under the fluoroscopic screen. But who can tell us if a large magnet is of use in these cases and use of them is practical?

*North American Veterinarian, March, 1934.*

\* \* \* \*

"Culture is that which remains with a man when he has forgotten all he ever learned."

*North American Veterinarian, March 1934.*

\* \* \* \*

Collecting bills used to be an occupation. In recent months, it is more in the nature of a pursuit. C.R.D.A. News.

*North American Veterinarian, March 1934.*

\* \* \* \*

"Cheap" turns diamonds to glass; gold to rust, happiness to misery, sunshine to darkness, beauty to drab. The New York Pharmacist.

*North American Veterinarian, March 1934.*

\* \* \* \*

Coccidiosis of dogs responds favourably to the use of Colloidal iodine used in enemas and also given per os.....

\* \* \* \*

Nose drops in the treatment of distemper:—The following formula used three or four times a day helps to keep the nasal tract open and breathing is much easier for the patient.

There are three chief groups of parasites of horses: (1) Arthropods, those with jointed appendages and a chitinous exo-skeleton, including mites, ticks and flies, (2) protozoan parasites, and (3) helminth parasites which include the round worms, of which over forty different species in one sub-division affect the horse.

*Veterinary Medicine, March 1934*

\* \* \*

Foster and Cort have shown that dogs that have become resistant to hookworm after repeated infection develop the disease when placed on inadequate diet and that a return to an adequate diet leads to recovery even though the feeding of embryos of the *ancylostoma caninum* be continued.

*Veterinary Medicine, March 1934.*

\* \* \*

Foetal extract for skin conditions.

Recent medical literature contains some very interesting reports on the use of Foetal Extracts in the treatment of various skin conditions. The product has been used experimentally as a prophylactic and curative treatment for measles in children with rather encouraging results.

Its inhibiting effect on certain tumorous growths has been reported by Dr. Murphy of the Rockefeller Institute and it is interesting to note that the product seems to have an inhibitory action on infectious warts in animals. It is possible that the clinical use of this product will serve to establish its value in certain eczematous and other pathological skin conditions.

*The Jen-Sal Journal, Jan—Feb., 1934.*

\* \* \*

Boiling milk for a period of four or five minutes serves to make the product more digestible by effecting a softer curd. This fact is taken advantage of in infant feeding and may well be considered in the small animal field in puppy feeding.

*Jen-Sal Jour. Apr—May, 1933.*

\* \* \*

Raw egg yolk is rather readily and easily digested by dogs and combined with milk makes a very desirable ration, while the uncooked egg whites are slowly digested and tend to cause digestive disturbances.

*Jen-Sal Jour. Dec. 1933.*

\* \* \*

**A new intravenous treatment:—**The use of a dilute solution of Hydrochloric acid intravenously has come into rather popular use by a number of physicians in the treatment of various acute and chronic infections. This therapy has been applied by a number of Veterinarians for the treatment of Canine Distemper with apparently good

results. The latest addition to this therapy is the use of the same treatment for Mastitis in Cattle and while not a specific, seems to be of definite value in all types of Mastitis except where chronic induration of the udder tissue is observed. The therapy in the application of this treatment is properly classified as colloidal therapy.

*Jen-Sal Jour. Dec. 1933.*

*Nose drops in the treatment of distemper:*—The following formula used three or four times a day helps to keep the nasal tract open and breathing is much easier for the patient.

Phenol

Tr. Iodine aa 4 drops.

Mineral oil qs. 1 ounce.

Mrx, Sig, half dropperful in each nostril

A useful preparation for swabbing ulcers of the mouth cavity and other conditions affecting the mouth is made as follows:—

Phenol 1 part

Tr. Aconite 2 parts

Tr. Iodine 3 parts

Glycerine 4 parts.

Mix. Use a swab twice a day.

The above formula deadens the pain when applied and is as very effective as a healing agent.

Laparotomy wounds in cats heal better if the operative area is clipped rather than shaved. *Veterinary Medicine, March 1934.*

Abel and associates, Johns Hopkins Medical School, as a result of studies during the past year, have reached the conclusion that tetanus toxin reaches the central nervous system through the blood and not by travelling along nerve trunks as was formerly thought. Only the toxin produced by the botulinus organism is more potent than tetanus toxin. *Veterinary Medicine, March 1934.*

Mad itch, a disease occasionally observed in cattle, is caused by a filterable virus. The disease may be transmitted by inoculation to rabbits, guinea pigs, white rats, white mice, cow, cat, duck, chicken and hog. This malady is very similar if not identical to pseudorabies of Europe. Bio. Abs. 7-9-21523.

*Veterinary Medicine March, 1934.*

## Notes.

The district of Tinnevely in South India with its fertile black cotton soil and industrious Vellala ryots is essentially a rich agricultural district. It has got a number of big animal Cattle Fairs with cattle attending there from distant Coimbatore and Salem Districts and Mysore State. The District Board is naturally alive to the necessity of providing easy veterinary aid to the cattle population there. With this view the revised budget of the District Board has made provision for the starting of four Veterinary Hospitals in the district. This is business like.

The Shiyali Taluk Board in Tanjore District, had resolved in its meeting on 13-2-34 to contribute annually Rs. 2,000 to the Government towards the maintenance of a Veterinary Dispensary to be opened there during the year. Taluk Boards have been abolished and their duties have been taken over by the District Boards. Tanjore is a very rich delta district famous for its rice produce. We hope the Tanjore District Board will carry out the resolution of the late Shiyali Taluk Board and will contribute towards the maintenance of the proposed Veterinary Dispensary there and thus make the veterinary aid easily available to the ryots there.

It is encouraging to see that philanthropic gentlemen like Sowcar Anamatal Siva Gowda of Saklespur and Mr. Siddegowder of Magadi, both in the State of Mysore, have donated funds to provide suitable buildings for the location of Veterinary Hospitals. The buildings at Saklespur were completed in April and the Deputy Commissioner of Hassan District opened the Hospital there, suitably acknowledging the munificence of the donor. When State finances are not available for useful purposes, it is but right that philanthropy should come to the rescue of dumb animals.

Our readers are familiar with the conjuring name of Dr. L. C. Coleman, Ph. D., C.I.E., who was Director of Agriculture in Mysore for a long time. He retired on the 27th of February 1934, from Mysore Service with which he was closely connected for nearly a quarter of a century. An extract in this connection from our local contemporary "The Hindu" of the 1st March 1934, is published elsewhere in this issue for the information of our readers. He was a good friend of Veterinary profession in Mysore; he was the patron of the Mysore Veterinary Medical Association since its inception and he has done much to improve the department and the profession in

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that progressive State. Mysore has suffered a serious loss in his retirement. We wish him long life and happiness in his well earned retirement.

\* \* \*

The question of recognition of the Imperial Institute of Veterinary Research, Muktesar, as a centre for advanced studies in Veterinary Science, leading to the degrees of Ph. D., or D. Sc., was one of the subjects set down for consideration at the Conference of the Universities in India. We were anxious to know how this important subject was disposed of at the Conference. That there is a great need for co-operation between the Universities and the Government Research Institutions is well recognised now. The Madras University has already made the necessary arrangements for the affiliation of the well equipped and ably staffed local Veterinary College and to institute a degree in Veterinary Science (B.Sc. Veterinary). We hope there will be closer contact in future between the Veterinary Colleges and the Universities in India to the great advantage of the country.

\* \* \*

It is gratifying to note that at a weekly luncheon meeting of the Rotary Club, Madras, held in the Gymkhana Club, Mr. P. T. Saunders, O.B.E., M.R.C.V.S., I.V.S., Director of Veterinary Services, Madras, delivered a lecture on the control of Rinderpest in the Madras Presidency. He has in his lecture given much useful information to the Rotarians about the activities of the Madras Civil Veterinary Department in the control of this cattle plague in the country. It is well known to every Indian Veterinary Surgeon what colossal ignorance prevails among even the educated city and town population in such matters in the useful activities of the Veterinary Department in different provinces and States in this country, and where all a Veterinary Surgeon could usefully serve the community and what great economical and public health problems await solution at his hands. It is the sacred duty of every veterinary surgeon to enlighten the public on these and several other matters through talks, public lectures and other propaganda methods.

\* \* \*

We have elsewhere extracted in this issue of the *Journal* a review of the Annual Report of the Imperial Agricultural Research Council of India for 1932-33, for the information of our readers. We find in the report that the Retrenchment Axe had nearly killed the post of Animal Husbandry Expert to the council, but the Council strongly represented to the Government the necessity for retaining the post in view of the great importance of the Animal Husbandry work to the country and succeeded in retaining the post for a further period of

two years with effect from 18th April 1933. The Veterinary limb of even this August Council cannot escape the cruel attention of the Retrenchment Axe.

\* \* \*

We find adequate funds not being available both at the province and at the centre and general lack of due attention to the problems of Animal Health and Animal Husbandry are some of the handicaps to the development of Animal Health and Animal Husbandry. The Veterinary Experts in each province and at the centre should on this account exert themselves and devise ways and means to compel and command sufficient attention and funds even as the Agricultural and Medical Experts have succeeded in these matters in their respective fields.

\* \* \*

Our readers will find elsewhere in this issue of the *Journal* extracts from the proceedings of the Eighth Meeting of the Advisory Board of the Imperial Council of Agricultural Research held at Simla on the 9th August 1933. We note with satisfaction that in spite of the doubts and difficulties expressed by a few members the application from the Mysore Government for a grant of Rs. 20,400 spread over a period of three years for investigation into Johne's Disease among animals was favourably considered to enable the Mysore Veterinary Department to carry on intensive research in this disease. We wish all success to the Mysore Scheme.

\* \* \*

Another important work this Advisory Body did at the meeting was to accord its approval, with no-doubt certain suggestions, to the Draft Bill and the model rules framed thereunder to provide for the prevention and control of Contagious Diseases among animals. The bill, when passed, will be an enabling act and it is left to the Provinces to take advantage of it "if local conditions required". Every Veterinary Surgeon in this country knows how badly some controlling measures are needed to prevent the spread of epizootics which are dangerous to the national wealth and public health. The council has not taken the public into its confidence and does not indicate in the report the lines on which the bill has been drafted. We are however sure that the Government of India will publish the draft bill and the rules thereunder, calling for opinions from all concerned. We have no hesitation in saying that a measure of this kind is long overdue in this country. We heartily welcome it.

\* \* \*

Poultry breeding is no doubt a very valuable subsidiary home industry in the rural parts and it requires all encouragement. Every

body knows that poultry diseases swept the country nearly of all its birds in recent years and that these diseases are a great menace to the industry. When the subject of grants to the poultry breeding came up for consideration, Col. Olver, Messrs. Ware and others were right in emphasising the importance of study of poultry diseases if poultry breeding would prove successful. The Board has wisely agreed that investigation into the poultry diseases is necessary to the progress of poultry industry in this country.

We have often said in these columns that the diseases of sheep and goats in this country have been causing heavy losses in the flocks and steps should be taken to study and control these diseases. Parasitic diseases are among the most troubling diseases among cattle, sheep and goats. It is therefore a good sign that Dr. G. S. Thaper, Reader in Zoology, Lucknow University, has come forward with a scheme for an enquiry into the Helminthiasis of cattle, sheep and goats in the United Provinces and his application for a grant of Rs. 25,460 spread over a period of 5 years was recommended with certain modifications.

We find from the reported proceedings that Col. Olver has been anxious and eager to help and push important schemes concerning the Animal Health and Husbandry in the country under the auspices of the Imperial Council of Agricultural Research. He would be able to do so only if all the Heads of the different provincial and State Veterinary Departments show similar keenness and co-operate with him. This must be done without loss of time, when the valuable help and guidance of Col. Olver is still available to the Council since the post he now occupies is likely to be retrenched in April 1935.

We take the following from "The Hindu" of the 23rd June, 1934. "During the two successive sessions of the Pudukottah Legislative Council, the paramount importance and the urgent need were urged on the Government for strengthening the Veterinary Department in the State with a view to protect the live-stock of the ryots from seasonal and other diseases. Members of the Legislative Council also deplored the helplessness of the ryots to save their cattle in times of such distress and drew the attention of the Durbar to the condition of the ryots. The Durbar after due consideration have strengthened the Department by the addition of three more Veterinary Surgeons. They have also issued orders directing the purchase of 500 doses of

Black-quarter serum at a cost not exceeding Rs. 250 from the Serum Institute, Bangalore."

We heartily congratulate the small State of Pudukottah which, in spite of its small resources, has found it possible to expand the activities of the Veterinary Department. It is a clear realisation of the extreme usefulness of the Veterinary Department to the welfare of the poor Agricultural Ryots of the State and we only wish that the authorities responsible in the Madras Presidency would follow suit and open more Veterinary Hospitals in the Province to meet the crying needs of the poor ryots.

## The Birthday Honours.

Our hearty congratulations to the recipients of the following Birthday Honours:—

- (1) *Khan Bahadur* on Khan Sahib Jehangir Dhanjibhai Buxy, Deputy Director of Veterinary Services, (Retired), Bombay Presidency.
- (2) *Rao Sahib* on Mr. Joachim D'Costa, Temporary Deputy Director of Imperial Veterinary Serum Institute, Izatnagar, Muktesar, U. P.
- (3) *Khan Sahib* on Mr. Mohammad Abdul Kadir, Assistant Director, Veterinary Service, (Retired), Central Provinces.

## Association News

### PROCEEDINGS OF THE SIXTH CONFERENCE OF THE MYSORE VETERINARY MEDICAL ASSOCIATION, BANGALORE.

The Conference was held in the spacious hall of the Mysore Serum Institute, Hebbal, Bangalore, at 3-p.m., on Saturday the 19th May 1934 and the following two days. Among the visitors who attended the Conference were Dr. S. Venkata Rao, K. Badami, L. Ag. Ph. D. (Cantab), Principal, Agricultural School, Bangalore, Major Martin, R. A. V. C., (Retd), Bangalore, and M. S. Sastry, G.B.V.C., General Secretary, All-India Veterinary Association, Trivellore.

The proceedings began with invocation. Invocation over, Mr. K. Krishna Iyengar, G.B.V.C., Superintendent, Civil Veterinary Department, Mysore and President of the Association welcomed the members and visitors and made a short speech narrating briefly the salient features in the past year.

He proposed Mr. A. K. Yegnanarayana Iyer, M.A., Dip. in Agriculture, (Cantab), N. D. D. (Eng.), Director of Agriculture, to the Chair. This was seconded and supported by Mr. S. D. Achar, G. B. V. C., Superintendent, Mysore Serum Institute and Hon. Secretary of the Association and Subedar T. V. Manika Raj respectively. Mr. Yegnanarayana Iyer occupied the Chair amidst loud applause.

The Secretary Mr. S. D. Achar then read his report on the working of the Association during 1933-34 and submitted the statement of Account of receipts and expenditure.

Proposed by Mr. P. U. Nair G.B.V.C., and seconded by Mr. K. Srikantiah the report was duly adopted.

The Secretary then read letters from Mr. G. V. Ramanathan, Director of Industries, Dr. P. Srinivasa Rao, G.M.V.C., Editor, *The Indian Veterinary Journal*, Madras, Dr. M. Issac and a few Veterinary Inspectors regretting their inability to be present on the occasion and wishing the Conference all success.

Then the Chairman requested Mr. M. S. Sastry, G.B.V.C., Special Veterinary Surgeon, Rural Development Scheme Trivellore, (Madras) and General Secretary, The All-India Veterinary Association, to speak a few words on the working of Rural Development Scheme at Trivellore, with special reference to the Socio-Economic and special surveys undertaken in the area. Responding to the request, Mr. M. S. Sastry briefly narrated an account of the work that was being done in the Rural Development Area at Trivellore, (Madras).

Then the Chairman thanked Mr. M. S. Sastry for the ready response and the valuable account of the work carried out in Trivellore and then he delivered his presidential address. The chairman also read the letter from Sir Charles Todhunter Private Secretary to H. H. The Maharajah of Mysore and said "Sir Charles and Lady Todhunter, in spite of arduous duties of administration, are very much interested in live-stock improvement work, showing mercy to dumb animals."

The following resolutions were then taken up:—

1. Resolved to request the Director of Agriculture in Mysore through the Superintendent, Civil Veterinary Department, Bangalore, that all the District Veterinary Hospitals be supplied with Anti rabic vaccine free of cost for the treatment of animals exposed to infection as is being done for human-beings.

This was carried by a large majority of votes (41 to 19).

2. Resolved to request that the Government be addressed to employ Veterinary Graduates in all Taluks, under village panchayats, where there are no Veterinary Dispensaries at present, on similar lines as the Engineering and Sanitary subordinates are being employed.

This was lost by a very large majority of votes (6 to 40).

At this stage, the Conference was adjourned to meet next morning.

Before the members and visitors dispersed for the day, they were treated to an enjoyable tea party on the spacious grounds of the Serum Institute.

## II Day's Proceedings.

The second day's proceedings commenced with the business meeting. The first item of the agenda was the alteration of the bye-law Rule No. 13 & 14.

Proposed by the President.

*That the duties of the Secretary and Treasurer be continued in one, as the duty of the Treasurer is only to receive the subscription and issue receipt.*

The proposition was put to vote and was carried by 40 votes against 6.

Then the election of the Members of the Managing Committee for the new year was taken up.

Mr. L. R. Sethupathi and Mr. Patanker were tellers and the following were elected:—

1. Mr. S. D. Achar.
2. „ K. Ranganatha Rao,
3. „ K. R. Ramachandra Rao,
4. „ P. U. Nair,
5. „ B. V. Venkatachar,
6. „ K. Srikantiah,
7. „ M. Subba Rao.

The Committee Members met after the meeting to elect the office bearers for the next year.

Mr. K. Krishniengar, Superintendent, Civil Veterinary Department, was elected the President, Mr. S. D. Achar, the Vice-President and Mr. P. U. Nair, the Honorary Secretary and Treasurer for the year 1934-35.

Business meeting over, the following papers were read and discussed:—

1. A Note on Fowl Cholera and the antigenic value of vaccine. By Mr. G. N. Srikantiah, G. M. V. C.
2. A case of complete paralysis in dog. By L. R. Sethupathi.
3. Retained Placenta, its removal and treatment in Dairy cattle. By Mr. M. Bhima Rao, G. M. V. C.
4. Oral Administration of Chloroform in cattle. By Mr. P. K. Shama Rao, G. B. V. C.
5. "Odds and ends" of some clinical cases in Veterinary Practice. By Mr. K. N. Subba Rao, B. A., L. V. P.
6. A case of Fracture of the Femur. By Mr. N. Krishnamurthy, G. B. V. C.
7. Tr. Lobelia etheris in Tetanus in a monkey. By Mr. K. J. Subramaniam, G. M. V. C.
8. A case of Dystokia. By Mr. N. Krishnamurthy, G. B. V. C.
9. Faetal Dystokia in a buffalo and cow. By Mr. K. J. Subramaniam, G. M. V. C.
10. Guberoga. By Mr. K. J. Subramaniam, G. M. V. C.

The Conference adjourned to meet again next morning.

## III Day's Proceedings.

## Reading of Professional Papers.

1. Fluke-infestation in cattle. By Mr. T. Krishna Rao, G. M. V. C.
2. Gastro Enteritis in dogs. By Mr. Mukundam.
3. A Note on the Deficiency Diseases of Cattle—met with in the State. By Mr. K. Ranganatha Rao, G. M. V. C.
4. Goat Virus against rinderpest. By Mr. S. D. Achar, G. B. V. C.
5. Tissue Vaccine for rinderpest. By Mr. P. U. Nair, G. B. V. C.

Papers over, the following resolutions were taken up:—

3. Resolved to request the Director of Agriculture in Mysore to prevail upon the Municipalities and Local Bodies to employ only qualified Veterinary Graduates for inspection of slaughter houses and meat markets, control of infectious and communicable diseases of animals, and for inspection of animals used for public conveyances.

Carried unanimously.

4. Resolved that in the interests of humanity and mercy that the Veterinary profession stands for, measures be taken to establish societies for the prevention of cruelty to animals at all district head-quarters and to achieve this, the Association be requested to approach Government to promote the formation of these societies, since S. P. C. A. Act No. 11, 1890, extends throughout the State.

Carried unanimously.

With closing remarks by the Chairman, a hearty vote of thanks to the Chair and three hearty cheers to H. H. The Maharajah, the Conference terminated.

(Sd.) S. D. ACHAR, G.B.V.C., F.G.,  
Honorary Secretary.

## PROCEEDINGS OF THE THIRTEENTH SESSION OF THE U. P. VETERINARY CONFERENCE.

The 13th Session of the U. P. Veterinary Conference was held at Lucknow on the 17th February, 1934.

Mr. S. K. Mukerjee, Head Assistant, Civil Veterinary Department, U. P. Lucknow, welcomed the members. Then the following programme was gone through.

18th February 1934.

1. Sprain of Ligamentum Neucas. By P. L. Sharma, V.A.S., Agra.
2. Canine Typhus. By Mr. Ram Saroop, V.I., Sitapur.
3. Chronic Sore Feet (Chronic Kandi) in an old elephant. By G. R. Khan, V.A.S., Sitapur.
4. Goat Virus to Immunise the cattle against Rinderpest. By S. Udam Singh, V.I., Lucknow.
5. Clinical Cases. By Mr. Abdul Rashid Khan, V.A.S., Kosi Kalan.
6. How to Improve. By Mr. Abdul Aziz Khan, V.A.S., Hasanganj.
7. Resolutions.

8. Annual Report of U. P. Veterinary Association by the Secretary. Election of the office-bearers.
9. Closing speech of the President.
10. Thanks to the Chair.

## Resolutions.

1. Resolved that this Conference places on record its deep sense of grief at the sad and sudden demise on 1st August, 1933, of late Captain S. G. M. Hickey, Director, Civil Veterinary Department, United Provinces and Patron of the Association, and offers its heart-felt condolence to his bereaved family.

Moved from the Chair and carried.

2. Resolved that this Conference places on record its deep sense of sorrow on the sad demise of Khan Sahib Sheikh Amir Ahmad, Retired Deputy Superintendent, Civil Veterinary Department, United Provinces, and Wali Mohammad Khan, Veterinary Assistant Surgeon, Oral, District Jalaun and sympathises with the members of the bereaved families.

Moved from the Chair and carried.

3. Resolved that this Conference records its deep sympathy with the sufferers that have fallen victim to the recent earthquake in Bihar and other parts of India.

Moved from the Chair and carried.

4. Resolved that the Director, Civil Veterinary Department be requested to ask the Chairman of the District Boards to grant the half holiday on Sunday to the incharge Veterinary Assistant Surgeons of Hospitals similar to the concession given to the Medical officers.

Carried unanimously.

5. Resolved that the Government be requested to modify the rules regarding the transfer of the Veterinary Assistant Surgeons within the district by the Chairman, District Board, to the extent that the Chairman, District Board, should consult the Director, Civil Veterinary Department, before transferring the Veterinary Assistant Surgeon in the district.

Carried unanimously.

6. Resolved that with the view of public safety, the Local Government be requested to make it compulsory for every Municipal Board to provide one or two dog boxes at the Sadar Veterinary Hospital for keeping the dogs suspected of rabies under observation.

Carried unanimously after amendment.

7. Resolved that Veterinary Inspectors are required to keep the stock of departmental forms and registers to supply to Veterinary Assistant Surgeons of the circle besides their Office records, tent and other Government equipments necessary for the performance of their duties but they are provided no office or office rent. It is requested that the Government be moved to grant at least Rs. 10 a month as the office rent.

Carried unanimously.

8. Resolved that this Conference request the Government to give Annual increment to the Veterinary Inspectors in the old scale instead of 5 years time scale promotion as in the case of with all other services of the department both in the old and in the new scale.

Carried unanimously.

9. Resolved that this Conference offers its gratitude to the President of the British Indian Association, Special Manager, Court of Ward, Balrampur Estate and the Manager, Kapurthala Estates in Oudh-Bahraich for placing their palatial buildings at the disposal of the Conference.

Moved from the Chair and carried.

The Annual Report was presented by the General Secretary and it was adopted by the house.

### LIST OF OFFICE-BEARERS AND MEMBERS OF THE EXECUTIVE COMMITTEE OF THE U. P. VETERINARY ASSOCIATION FOR THE YEAR 1934.

|                                                                                                    |                            |
|----------------------------------------------------------------------------------------------------|----------------------------|
| Khan Bahadur Sheikh Niaz Mohammad Saheb, G.P.V.C.,<br>Officiating Director, C.V.D., U.P., Lucknow. | ... President.             |
| Mr. T. S. Davis, G.B.V.C., Superintendent C.V.D., Agra                                             | ... Vice-President.        |
| Sardar Udey Singh Siddhu, G.P.V.C., Veterinary Inspector,<br>Lucknow circle                        | ... General Secretary.     |
| Mr. S. M. Raza Husain, Superintendent, C.V.D.,<br>Lucknow                                          | ... Jt. Secretary, (life). |
| Mr. Mohammad Abdullah Quershi, G.P.V.C., Veterinary<br>Inspector, Bareilly                         | ... Financial Secretary.   |
| Mr. Abdul Wahab Hameed, G.P.V.C., Veterinary Assistant<br>Surgeon, Moradabad                       | } Editors.                 |
| Mr. R. K. Nath, G.P.V.C., Superintendent, Cattle Farm,<br>Court of Wards, Balrampur                |                            |
| Mr. Qazi Mohammad Abdul Bari, Head Clerk, Office of<br>the Superintendent, C.V.D., Agra            | .. Auditor.                |

Twelve members were then elected and 4 were nominated to the Executive Committee.

### SIND C.V.D. SUBORDINATE SERVICE ASSOCIATION.

Proceedings of the Second Conference of the Sind Civil Veterinary Department Subordinate Service Association held at Karachi on 21st and 22nd March 1934.

#### Members present.

- |                                |                           |
|--------------------------------|---------------------------|
| 1. Mr. C. S. G. Haji.          | 5. Mr. A. C. Shivnani.    |
| 2. Mr. Abdul Majid N. Siddiqi. | 6. Mr. S. T. Lachhramani. |
| 3. Mr. S. A. Gulrajani.        | 7. Mr. J. R. Banna.       |
| 4. Mr. W. K. Abasi             | 8. Mr. A. M. Memon.       |

### Second Conference, Sind C.V.D. Subordinate Service Association 61

Proceedings of the Conference were opened by J. H. G. Jerrom Esq., M.R., C.V.S., I.V.S., Superintendent, Civil Veterinary Department, Sind and Rajputana at the Central Hall of his Office, Victoria Road, Karachi at 10.0 a.m. on 21st March 1934.

Mr. C. S. G. Haji, President of the Association read his welcome address and proposing formally the Superintendent, Civil Veterinary Department, Sind and Rajputana to be the President of the Conference said that the President-Elect had from time to time encouraged our Association and having remained as the head of the Department for a long time knew our needs very much and as such he has great pleasure in proposing him for the Presidentship of the Conference.

Mr. Abdul Majid in seconding the proposal said that he having remained in close contact with most of the Veterinary Assistant Surgeons in Sind, while as Inspector, was sure that every one had highest regard for him as a kind and sympathetic Officer and the best guide in our Professional matters. The proposal was carried amidst cheers and the President was garlanded by Mr. C. S. G. Haji.

The President then asked the Honorary Secretary to read the Report.

Mr. S. A. Gulrajani accordingly read his report on the working of the Association which was unanimously adopted. Short and suitable speeches were made by Messrs. Abdul Majid and W. K. Abasi reviewing the past work of the Association and emphasizing the necessity for taking more interest in future.

Letters received from the members expressing inability to attend the Conference and wishing success to it were then read.

Papers on following subjects were then read and discussed :—

1. A case of Actinomycosis in a buffalo heifer by Mr. J. R. Banna, G.B.V.C. Veterinary Assistant Surgeon, Hyderabad (Sind).
2. A case of Tuberculosis Nephritis in Camel (by the above mentioned gentleman).
3. Success of Tr. Lobellia Aetheris in Tetanus by Mr. F. K. Solangi, G.B.V.C.
4. Hernia-Ventralis-Uteri in a goat by Mr. Abdul Majid G.P.V.C.
5. Errors in Diagnosis by Mr. Abdul Majid, G.P.V.C.
6. Cases of Agalactia in Cows by Mr. S. T. Lachhramani, G.B.V.C.

Mr. W. K. Abasi stated his experience in treating a good number of cases of Equine Surra with Naganon successfully. During discussion the President gave valuable advice on these and various other subjects and encouraged the members to record more interesting cases frequently.

The resolutions published below were then moved.

At the conclusion Mr. Jerrom addressed the Conference and with a vote of thanks to the chair the First Session of the Conference terminated at 1.30 p. m.

In the evening Mrs. Jerrom entertained the members of the Conference with sumptuous refreshments and tea, and conversed on social and other matters.

A group photograph was then taken.

Drs. L. M. Hira and J. M. Dhirmalani, Municipal Veterinary Surgeons were at home to the members at 7 p. m.

Next day in the morning demonstrations of morbid specimens, microscopic slides, anatomical charts etc., were held at the R. C. Veterinary Hospital, Karachi, and then the members paid a visit to the Slaughter Yard of Karachi Municipality under the kind arrangements of Drs. Hira and Dhirmalani.

In the evening the members of the Conference and other local Veterinarians were entertained with refreshments and music by Lala Keshavedas, Head Clerk to the Superintendent, Civil Veterinary Department, Sind and Rajputana, and the Conference thus came to a happy end.

The following Resolutions were passed at the Conference.

1. *This Association places on record their deep sense of sorrow and grief at the sad demise of Mr. G. D. Wakhnis, the late Veterinary Assistant Surgeon, Mirpukhas, and sympathizes with the members of his family and authorizes the Honorary Secretary to send the copy of this Resolution to his relations.*

Moved from the chair and carried unanimously.

2. *This Association sympathizes with the sufferers of Earthquake effects in Bihar and other Provinces and requests all the members to voluntarily subscribe and collect funds for remitting to the Viceroy's Fund through the Honorary Secretary.*

Carried unanimously:

3. *It is resolved that in view of the abolition of one of the posts of Veterinary Inspector the wording "out of which two shall be Inspectors" in rule No. 11 be expunged.*

The Secretary, while proposing pointed out that the modification of the rule was necessary owing to the abolition of one of the posts of the Inspector.

Carried unanimously.

4. *This Association stresses on the necessity of calling the meetings of Managing Committee of the Association regularly and resolves that in order to encourage the same, single third-class railway fares and actual cost of journeys be given to the members for attending such meetings from the funds of the Association.*

The Honorary Secretary in proposing the resolution pointed out that no meeting of the Managing Committee was held ever since the formation of the Association with the result that nothing substantial was done after holding the Annual Sessions. Evidently expenses were the hitch. But it was unanimously suggested that as the tabling of such a resolution alone was enough to stimulate holding of meetings and as funds did not permit such an expenditure, the question may be deferred.

5. *This Association requests the Superintendent, Civil Veterinary Department, Sind and Rajputana to kindly take timely action lest the scale of pay sanctioned for new entrants in the Subordinate Civil Veterinary Department of the Presidency proper is applied to those of Sind, in view of the fact that their pay even in the year 1912 was Rs. 55 and requests further that he will kindly try to see that the new entrants of the Subordinate Civil Veterinary Department, Sind, get at least the scale sanctioned for Subordinate Medical Service in Sind whose present pay viz. Rs. 60-7-200 even at present is lower than that of the Subordinate Civil Veterinary Department, Sind, viz., Rs. 75-4-155-10-225 and the Government have in this way always accepted the principle that the pay of Veterinary Assistant Surgeons in Sind should be more than that of a Subordinate Medical Officer in Sind.*

In support of this resolution the members compared the Pre-War salaries of various other Departments with their own which was Rs. 55 on a start, and pointed out that though in the revised scales of all other Departments, the start-

ing pay has been fixed at highest rates than it was before war and it was anomalous to find that start on lesser pay of Rs. 50 was provided for this Department only. The maximum pay has also been kept less than that of all other Departments, though the course of training, initial qualifications for the same and nature of duties are in no way inferior to those of other Departments.

They further pointed out that the consideration for which this Department in Sind received special pay before war still remain the same, as no one from Sind goes as yet for training without the Government Aid. The Government could not in fairness get hands from other Provinces even if they could be had cheaper and that principle of need and supply could not be applied in the case of these Services in Sind.

The resolution was carried unanimously.

6. *This Association requests the Superintendent, Civil Veterinary Department, Sind & Rajputana to move the Government that they will kindly reconsider their decision that the grant of the dispensary allowances attached to certain Veterinary Dispensaries should cease on the restoration of emergency cuts and requests for the retention of the same.*

Supporting the resolution the mover and others emphasizing the necessity of retention of these allowances at least for the Dispensaries in District Head Quarters and other important towns, where the cost of living was more than that of other places said that the work at these Dispensaries was comparatively more in importance and amount and the Senior Officers were put in charge of these, and if these allowances are removed, none of such Officers will like to go to such places where they will have to work more and incur additional costs. Anyway it will affect the efficiency and reduce the zeal of workers without such attraction.

The conditions for Medical and Veterinary Departments were different still in this respect. Nowadays there is at least one aided Medical Dispensary in each taluka in addition to number of private ones. Whereas there was hardly one Veterinary Dispensary for a division and naturally the Veterinary Assistant Surgeons had to work more, they had also in addition to attend regularly to out door work in 3 to 4 Taluks. Consequently their life unlike that of medical men was not stationary which necessitated them to maintain two homes.

The medical men at all such important places had the benefit of having lot of private practice too as compared with none for Veterinarians.

Conditions for this Department in Sind differ from those in Presidency proper where too these Dispensaries were now in almost every Taluka and the principle of need and supply could be safely applied there but not in Sind, as no one as yet took up this course without substantial aid from Government, the fact that cost of living in Sind was comparatively higher than that in Presidency proper could not be overlooked.

The resolution was carried unanimously.

7. *This Association requests the Government to appoint a Senior Veterinary Assistant Surgeon as Personal Assistant to the Superintendent, Civil Veterinary Department, Sind and Rajputana, as is done in many such Government Department.*

The intention of the proposal was to replace the appointment of the Head Clerk to the Superintendent, Civil Veterinary Department, Sind and Rajputana.

by a Veterinary Assistant Surgeon as Personal Assistant and the members while supporting pointed out that the resolution was moved with a view to open an avenue for a graduate, who as a rule being Matriculate too, could very well do any other Office Work now done by Clerks who are also Matriculates only at the most. A man of technical knowledge in the Superintendent's Office will be of a greater service to him in disposing of professional and other matters. The heads of all Departments had at least one man qualified in relative Science in their Office for the purpose.

A reference was also made to the fact that a Graduate at the helm of Head Office work will be in a better position to represent the difficulties and requirements of his colleagues in the District and that as the man will be one of the cadre of the subordinate establishment he will be transferable and that the change will not in any way be expensive for the Government.

The opposition pointed out that the proposal would affect the prospects of the Junior Clerk of the Superintendent's Office and the suggestion was made that as the Department was yet too small and the Superintendent could attend to the professional matters alone, the question may be deferred and the proposal was withdrawn by the mover.

8. *This Association requests the Superintendent, Civil Veterinary Department, Sind and Rajputana, to move the Government to make the Veterinary Inspector in Sind a Gazetted Officer.*

In moving and supporting the resolution, the member referred to the list contained in Rule 9 (21) of the Bombay Civil Service Rules Manual and pointed out that these Officers whether included in the Provincial Services or not were Gazetted Government servants. As a rule all Officers appointed by the Commissioner in Sind were Gazetted Government servants and the Veterinary Inspector in Sind was also appointed by him. The scale of his pay was also such that the other Officers drawing the same scale were all Gazetted Government servants. The request was made solely with an intention to improve the status of the Inspector and the Subordinate Service whose member he was.

Carried unanimously.

9. *In view of the orders of the Government that the sectional holidays whenever availed of together with public holidays be counted as casual leave, this Association requests the Superintendent, Civil Veterinary Department Sind and Rajputana to fix annually a list of local holidays as sanctioned by the Commissioner in Sind or the Collector of Karachi to enable the Veterinary Assistant Surgeons to avail of the same privilege as otherwise all public holidays availed of by them are counted as casual leave.*

In moving the resolution Mr. S. A. Gulrajani pointed out that similar resolution was carried last time too, but the Superintendent did not accept the recommendation on the ground that the Medical and Police Departments whose duties were of the same nature did not get such leave and said that though he will be glad to accept all conditions imposed on these Services if the Veterinary Assistant Surgeons were treated like them all around, so far this question was concerned the conditions for Veterinary Assistant Surgeons were quite different to those of others. The Medical Officers in charge of Dispensaries moved out very rarely and the Sub-Inspectors of Police had to move out at the most in one Taluka so that he could return to Head Quarters every night. Whereas Veterinary Assis-

tant Surgeons had to tour in 3 or 4 Talukas and had often to stay out for even a week or so. Thus as the life of Veterinary Assistant Surgeon in Sind was not stationary, he needed more leave. The Government have now ordered that all Sectional Holidays availed of should be deducted from the casual leave and the number of Local Holidays has now been reduced from 7 to 3 in a year, and therefore the grant of these 3 days in a year will not cause any longer absence than that at present. The only advantage will be that they could be added to Public Holidays which otherwise being availed of in addition to casual leave are also counted as casual leave and we are thus prevented from attending our auspicious festivals.

The proposal was seconded by Mr. A. C. Shivnani and almost all the members complained of the hardship, and carried it unanimously.

13. *This Association brings to the kind notice of the Superintendent, Civil Veterinary Department, Sind and Rajputana, that the Government orders about anti-rabic treatment do not allow Veterinary Officers carrying out treatment any fees for treating more than one animal of the same owner at a time in spite of accepting the principle that they should get the same. As the charges of Rs. 5 provided for such cases is even less than that of actual cost of serum etc., they therefore request that the Government may kindly be moved to remove the anomaly by prescribing fixed amount of fees for the Officers carrying on treatment in addition to other costs of medicines and dispensary fees in such cases.*

In moving the resolution Mr. Abdul Majid pointed out that under the existing orders the Officers carrying on the treatment instead of getting any fees were losers. It was seconded by Mr. S. T. Lachhramani but it was suggested that there was no necessity of tabling a resolution by the Association and the Veterinary Assistant Surgeon, Karachi, who was chiefly affected should make a reference to the Superintendent, Civil Veterinary Department, Sind and Rajputana for necessary action and the proposal was withdrawn.

11. *Resolved that the following gentlemen be elected Office bearers as under:—*

Carried unanimously.

|                      |                                      |
|----------------------|--------------------------------------|
| Mr. C. S. G. Haji.   | President.                           |
| „ Abdul Majid.       | Vice-President.                      |
| „ S. A. Gulrajani.   | Honorary Secretary and Treasurer.    |
| „ S. T. Lachhramani. | Auditor.                             |
| „ W. K. Abasi.       | } Members of the Managing Committee. |
| „ A. C. Shivnani.    |                                      |
| „ J. R. Banna.       |                                      |
| „ Mahommed Bux.      |                                      |

## College News.

### PUNJAB VETERINARY COLLEGE.

The following students of the final year class of the Punjab Veterinary College, Lahore, have passed the Diploma Examination, held in June 1934.

#### 4th Year (L.V.P.)

- |                       |                       |
|-----------------------|-----------------------|
| 1. Jawahar Singh      | 9. Dina Nath Kaul     |
| 2. Bashir Ahmad       | 10. Abdul Wahid       |
| 3. Lambodhar          | 11. Abdul Salam       |
| 4. Ghulam Sarwar      | 12. Bansi Lal         |
| 5. Atwar Singh        | 13. Mir Obaidullah    |
| 6. Amar Nath          | 14. Trilok Nath Varma |
| 7. Kesho Nath Trisal. | 15. Kartar Singh      |
| 8. Karam Chand        |                       |

#### Failed in Compartment.

(1) Madhusudan (Medicine). (2) Nanaswamy Rao (Obstetrics). (3) Radha Kishan (Medicine). (4) Gurcharan Singh (Medicine). (5) Daulat Singh (Medicine).

(Sd.) CAPT. U. W. F. WALKER, M.C., I.V.S.,  
Offg. Principal, Punjab Veterinary College.

### MADRAS VETERINARY COLLEGE.

The following Veterinary Assistant Surgeons have been selected for P. G., Course in the Madras Veterinary College for 1934 :—

- |                              |                              |
|------------------------------|------------------------------|
| 1. Dr. P. N. Sivaraman       | 4. Dr. T. A. Visvanatha Iyer |
| 2. „ A. S. Mahadeva Iyer     | 5. „ P. Kadambavanasundaram  |
| 3. „ M. R. Subramanya Sastri | 6. „ S. Krishnamurti.        |

## Extracts.

### Proceedings of the Eighth Meeting of the Advisory Board of the Imperial Council of Agricultural Research, held at Simla on the 9th August, 1933.

*Application from the Government of Mysore for a grant of Rs. 20,400 spread over a period of three years for investigation into Johne's disease among animals. (Subject No. 9 of the Agenda).*

The subject was introduced by Mr. Krishniengar. He explained the scheme and the work done so far in Mysore. Mr. Ware said that it was no doubt true that Johne's disease was spreading in the provinces and work was desired but for this a highly skilled officer was required. He was doubtful whether Mysore was sufficiently advanced to undertake this work. He referred to his scheme for the appointment of an officer at Muktesar for investigation of Tuberculosis and Johne's diseases which was still awaiting the final sanction of the Governing Body. He was, therefore, of opinion that the Mysore scheme should be post-

### Proceedings of the Meeting of the Advisory Board, I. C. A. R. 67

poned till the Central Institute at Muktesar had been strengthened by the appointment of the officer referred to by him. Mr. Quirke, Major Riley and Messrs. Kothawala and Badami all emphasised the importance and urgency of adequate work on this disease. In reply to Mr. Kerr as to the delay in the appointment of the officer at Muktesar, the Chairman explained that the matter will come up for consideration at the next meeting of the Governing Body likely to be held sometime in November 1933. Colonel Olver said that the investigation of Johne's disease was one of the cases in which co-ordination was essential. He informed the Board that the disease was much more prevalent than was hitherto believed in this country and that work should be taken up as quickly as possible. It was as important as Tuberculosis in animals. He was, therefore, of opinion that the scheme should not be held up and that Mysore was able to take up item 3 of the programme of work proposed in the scheme. Mr. Azhar Ali said that if an Officer at Muktesar was required it was for the Government of India to appoint one; all the same he was in favour of the Mysore scheme. Mr. Carpenter enquired whether, if the work in Mysore was to be concentrated mainly on item 3, it would affect the cost of the scheme in any way. The chairman said that it would have very little effect if any. Brigadier Mosley was in favour of work on this disease being concentrated at Muktesar. In the end the Advisory Board passed the following resolution :—

" That the scheme be approved for the purpose of carrying out intensive work on item 3 and such work as can be done on items 1 and 2 of the programme of work. Item 2 requires the resources of a fully equipped veterinary research institution, it is most urgent that a specialist officer should be appointed to deal with the whole problem."

### *Draft bill, and the model rules framed thereunder, to provide for the prevention and control of contagious diseases, among animals (Subject No. 11 of the Agenda).*

In introducing the subject Colonel Olver stressed the importance of an All-India Act for the prevention and control of diseases among animals. He hoped that the Board would endorse the recommendations of the Animal Husbandry Wing of the Board of Agriculture and Animal Husbandry. Mr. Kerr also supported the draft bill and the model rules framed thereunder. Rao Bahadur Naik wanted to know whether the local Governments and thereby the local Bodies and the Agriculturists to whom the Act and the rules would apply had been consulted. In reply he was informed by Colonel Olver that they had been informally consulted but formal consultation will come in when the draft bill and the rules would be circulated to local Governments by the Government of India. The act was an enabling act and it was for the provinces to take advantage of it if local conditions required. Rao Bahadur Naik also suggested that the draft of the notification to be issued by a local Government under clause (3) of section (1) of the Act should first be approved by a Provincial Legislative Council. The Chairman explained that this suggestion would require legal examination and the point was noted for consideration. Brigadier Mosley desired that the "Army" should be excluded from the operation of the Act just in the same way as army animals on Crown land in England are not included in the Contagious Diseases Act. Mr. Kothawala endorsed the views of Colonel Olver and made the following suggestions on points of detail :—

(a) Provision should be made in the model rules for the control of sale of milk from animals suffering from Rinderpest, Foot and Mouth diseases and Anthrax as in the model rules for Tuberculosis.

(b) The words "pasturised or" should be added before the word "boiled" at the end of rule 5 under model rules for Tuberculosis.

(c) In regard to Rule 1 (b) of model rules for Johne's disease—he asked whether the tests mentioned were reliable.

(d) He suggested that South Africa and U. S. A., should be added to the names of countries under the schedule of the model quarantine rules. As regards the authorities from which certificates will be accepted, he could not name them but said that such authorities were available.

(e) He thought that the destruction of temporary buildings under the "Disinfection rules" (Appendix) would mean great hardship to small dairymen.

Mr. Kothavala also suggested the appointment of a committee consisting of veterinary and dairymen to go into the whole matter. The Chairman pointed out that this subject has already been considered in February 1933 by the Animal Husbandry Wing of the Board of Agriculture and Animal Husbandry which consisted of 64 representatives of all branches of animal husbandry and it was therefore not practicable to appoint another committee now. Mr. Ware explained that model rules were liable to modification to suit local conditions. Milk was boiled in this country as a general rule. He had no objection to the additions suggested by Mr. Kothavala under (a) and (d) above. As regards (c) it was always open to the Governor-General in Council to approve any other method or test proved to be reliable by experiments. In regard to (e), both Mr. Kerr and Diwan Bahadur Raghaviah said that it would mean a great hardship to small dairymen. The latter speaker suggested that some compensation may be given to these people on the lines of clause 18 of the draft bill. The legal aspect of the latter proposal was noted for further examination. In reply to Mr. Sayer, the Chairman explained that the co-operation of maritime Indian States and the Portuguese and French authorities in India was always secured to guard against the possibility of the introduction of diseases through their territories. The Board agreed that the draft bill and the model rules to be framed thereunder as amended by the Animal Husbandry Wing of the Board of Agriculture and Animal Husbandry in February 1933 should be adopted on the understanding that the draft rules were suggestions for the consideration of the Provincial Governments and that it would be for the latter to set up their own technical committees to modify the rules to suit to their local conditions.

10th August, 1933.

*Application from the Government of Assam for a grant of Rs. 69,788 spread over a period of 5 years for a scheme of cattle nutrition. Subject (No. 17 of the Agenda).*

Colonel Olver opened the discussion. He said that the scheme had been examined and revised by the Standing Animal Nutrition Committee of the Board and as revised would cost Rs. 90,000 as against Rs. 72,880. Mr. Woodford welcomed the remarks of Colonel Olver and said that there was already a Central Institute and that he did not want his scheme to be postponed indefinitely till the establishment of an Animal Nutrition Institute. He desired that the Board

consider the scheme on its merits but he had no objection to the scheme being referred to the Imperial Physiological Chemist and then being brought forward before the Board. Mr. Ware and Rao Bahadur Viswanath suggested that the scheme should be referred back to the Animal Nutrition Committee. The Chairman then said that there were two proposals before the Board, viz. (1) that the scheme be referred back to the Animal Nutrition Committee for examination and report, and (2) that the scheme be referred to the Imperial Physiological Chemist for further detailed examination of questions of technique. Mr. Ware and Dr. Burns were against the second suggestion. On the other hand, Mr. Carpenter was of opinion that the scheme as revised should be recommended for sanction subject to technical details being referred to the Imperial Physiological Chemist. Ultimately it was decided that the scheme should be taken up on Saturday the 12th August 1933, after the report of the Animal Nutrition Committee had been circulated to the Board.

*Application from the Government of Bombay for a scheme of Poultry Breeding research in Western India, at a cost of Rs. 55,495 spread over 5 years. (Subject No. 20 of the Agenda).*

In introducing the scheme Dr. Burns said that he had since reduced the expenditure on buildings by Rs. 2,500, thus reducing the total cost of the scheme to Rs. 52,995 as against Rs. 55,495 in the original scheme. Mr. Kerr supported the scheme and emphasised the urgent need for work on poultry diseases. Mr. Nizamuddin Hyder was also in favour of the scheme. Mr. Stewart thought that the scheme could not be said to be of All-India importance as the results derived from experiments in Poona would not be applicable to Northern India and he suggested that it would be examined by a Committee. Major Riley was against the Council giving any grant for buildings. Dr. Burns said that he was unable to give a guarantee but was prepared to recommend his Government to contribute as much as possible of the cost of buildings. Rao Bahadur Naik strongly supported the scheme as poultry breeding was one of the principal home industries from the agriculturists' point of view. He was of opinion that the grant should be given even if the Bombay Government did not agree to meet the cost of the buildings. Mr. Allan also supported the scheme. Mr. Sethi said that it was an attempt on the part of Bombay Government to relieve itself of its normal expenditure and said that the scheme should be referred to a committee as suggested by Mr. Stewart. Mr. Plymen said that it was quite true that the home industries had not received so much support from the Board as they deserved. Mr. Wynne Sayer enquired for what reasons the particular breed chosen had been selected; were the Mediterranean breeds more resistant to disease? Mr. Ware endorsed the remarks made by previous speakers but said that he would like to know whether anything had been done in regard to poultry diseases. He was against sanctioning any poultry breeding scheme till something about the control of poultry disease was known. Colonel Olver said that it was unfortunate that the proposal for a research officer for poultry diseases had been turned down. Though it was difficult to spend so much on poultry farms he was of opinion that the Bombay scheme should not be postponed indefinitely. As regards the capital expenditure he thought that it should be suggested to the Bombay Government that cheaper buildings should be constructed unless they were prepared to take them over at the end of five years. He also referred to the importance of poultry diseases. If the scheme was sanctioned it was very essential that arrangements should be made to make a study of such diseases. Mr. Carpenter said that the scheme should be referred to a committee with other similar schemes. Mr. Sane

supported the scheme and said that it was not desirable to postpone it till the disease investigation officer had been appointed. Mr. Baluch explained the work done by the Bombay Department on poultry during the last 21 years. As regards the disease of poultry he said that there had been very few casualties during this period. As regards the breeds on which it was intended to experiment the idea was to select the breed which was economically best and leave out those which were useless. He said that there was a large demand for good eggs which were sold at 14 annas a dozen throughout the year as against the ordinary rate of 6 annas. Dr. Burns said that his scheme was a complementary scheme to the Bengal scheme now under preparation and urged that the question of disease and the proposal for a Central Institute should not stand in the way of his scheme being sanctioned. The Board unanimously agreed that investigation into the importance of poultry diseases was necessary to the progress of the poultry industry. The Bombay scheme it was accepted subject to reconsideration of financial details on the basis that the grants from the Council should be restricted to the nett estimated cost of the experiment, i.e. approximately Rs. 13,000.

#### 11th August 1933.

*Report of the Sub-Committee appointed to consider the application from Dr. G. S. Thaper, Reader in Zoology, Lucknow University, for a grant of Rs. 25,460 spread over a period of 5 years for an enquiry into the Helminthiasis of Cattle, sheep and goats in the United Provinces, (Subject No. 26 of the Agenda).*

Colonel Oliver presented the report of the Sub-Committee appointed to consider the scheme. He said that the Committee had been appointed to see that work was co-ordinated by utilising research facilities available in the country. He explained that Dr. Thaper's work would be mainly confined to systematic identification and the working out of life histories as opportunity occurred. The cost of the scheme had been revised by the Committee and had been brought down to Rs. 19,790 as against the original of Rs. 25,460. Dr. Thaper accepted the suggestions of the Committee and said that he was quite willing to work on the lines now proposed. Dr. Ekambaram strongly supported the scheme. The report of the Committee was adopted and the scheme as amended by the Committee was recommended for the sanction of the Governing Body.

*Report of the Sub-Committee appointed to consider the application from the Government of Bombay for a grant of Rs. 84,580 spread over a period of 10 years for research in sheep-breeding. (Subject No. 33 of the Agenda).*

Colonel Oliver introduced the report of the Committee and said that the cost of the scheme had now been reduced to Rs. 85,122 as against the original of Rs. 92,350 for ten years. Dr. Burns explained that there were great possibilities for sheep-breeding in the country and stressed the importance of this and commended the scheme for the consideration of the Board. Mr. Sethi raised the point that the convention of the Board had been to limit grants for research work to five years but the scheme under consideration was for a period of ten years. The Chairman explained that the general principle was that grants should ordinarily be limited to five years and that it was open to the Governing Body—especially on the recommendation of this Board to vary that period.

#### Proceedings of the Meeting of the Advisory Board, I. C. A. R. 71

There was no bar to the consideration of the scheme on that account. Dr. Burns said that the whole work could be specially reviewed at the end of five years if the Board desired. Mr. Mohd. Azhar Ali enquired as to whether the scheme was of an All-India importance and why the Bombay Government were not willing to contribute anything towards the scheme except the rent of the land. Dr. Shaw said that it will be better if the Board were to recognise that any scheme involving breeding, cross-breeding, etc., takes more than five years to give satisfactory results although with plants the scientific results were obtainable within 5 years. Messrs. Allan and Stewart were against giving any grant for the construction of buildings. In reply to Mr. Carpenter, Dr. Burns said that the Bombay Government will contribute Rs. 7,770 as rent of land and that receipts from the scheme estimated at Rs. 8,390 will also go to the Council. Colonel Oliver raised the question of the sale of flock at the end of five years if the Council decided not to continue the scheme for a period of 10 years and desired that the Bombay Government should take it over at a fair valuation. Dr. Burns was however unable to give any such promise. The general sense of the Board was that the Bombay Government should be asked to provide for the cost of buildings and fencing and that the usual condition of the grant being limited to five years be waived in this case and the scheme be guaranteed for ten years subject to a special review at the end of 5 years. The Board suggested that the Chairman should negotiate regarding the possibility of the Bombay Government taking over the livestock at a valuation at the end of 10 years. The scheme as amended was recommended for sanction subject to these conditions.

*Application from the Hyderabad Government for a grant of Rs. 29,310 spread over a period of 5 years for researches on sheep breeding. Report of the Committee appointed to consider the scheme. (Subject No. 36 of the Agenda).*

The Chairman informed the Board that the Hyderabad representative desired to withdraw the scheme as they intend to submit a revised scheme in the light of the recommendations made by the sheep breeding Committee of the Council. The Board agreed.

*Application from the Government of Bombay for a grant of Rs. 82,111, spread over a period of ten years for researches on goat breeding in the Bombay Presidency. (Subject No. 34 of the Agenda.)*

Colonel Oliver presented the report of the goat breeding committee and said that Dr. Burns had revised the scheme in accordance with the suggestions made by the Committee. The cost of the revised scheme now came to Rs. 82,821 for a period of 10 years. Mr. Baluch stressed the importance of research on goats as India possessed the largest number of goats in the world and the goat is a poor man's cow. Mr. Kothawala and Rao Babadur Naik also supported the scheme.

The latter said that the Board should give the grant if the scheme was considered of benefit to the agriculturist even if the Bombay Government were unwilling to meet the capital expenditure. The Board decided that this scheme should be dealt with in exactly the same way as the sheep breeding scheme and approved the same conditions. (Subject No. 33 of the Agenda).

### 12th August 1933.

*Scheme by Dr. P. E. Lander for determining the feeding values of certain food grains, oil seeds and oil cakes for working bullocks and dairy cattle. (Subject No. 7 of the Agenda.)*

*Application from the Government of Assam for a grant of Rs. 69,788 spread over a period of 5 years for a scheme of cattle nutrition. (Subject No. 17 of the Agenda.)*

*Six schemes forwarded by the Director, Imperial Institute of Agricultural Research, Pusa, regarding :—*

- (i) Enquiry into minerals in pastures and fodders and study of mineral requirements of cattle.
- (ii) Introducing blood analysis in animal nutrition work.
- (iii) Value of oil cakes and oil seeds for working bullocks.
- (iv) Extension of laboratory facilities.
- (v) Feeding values of oil seeds, cakes and other concentrates to milch animals.
- (vi) Study of the composition and nutritive value of milk of the cow, buffalo and goat.

(Subject No. 27 of the Agenda.)

Colonel Olver introduced the report of the standing animal nutrition committee. Under scheme No. 7 he said that the revised cost of the portion of the scheme dealing with dairy cattle would be Rs. 38,570 for five years as against a total cost of Rs. 49,536 in the original scheme and of Rs. 76,930 in the revised scheme. The question of animal nutrition was very important and had been stressed by numerous authorities including the Board of Agriculture, Agricultural Advisers and the Royal Commission on Agriculture. He specially invited the attention of the Board to the recommendation of the Sub-Committee in regard to the establishment of a Central Nutrition Institute at Dehra Dun and wanted the Board to recommend to the Government of India that this question should be again taken up as early as possible. Rao Bahadur Viswanath and Dr. Lander said that they had nothing to add to the report of the Animal Nutrition Committee. Mr. Iyer laid stress on the necessity of items (i) and (ii) under scheme No. 27 and said that they could be carried out at Bangalore. He was supported by Dr. McRae who added that the two schemes could be worked satisfactorily for three years. He also agreed that this Board should emphasise the necessity of establishing a Central Institute. Mr. Kerr was not in favour of the two items being postponed till a Central Institute was established. Dr. Lander said that the Punjab was doing work on item (1) for the past 10 years

as was the case with Bangalore, but no finality could be reached in such a short period as three years. The two items were inter-connected and continuous permanent work on them was required. Rao Bahadur Viswanath was of opinion that if the Institute at Bangalore was going to be shifted to Dehra Dun there was no need to incur any capital expenditure at Bangalore and the work could be taken up by the Central Institute, as soon as established. The decision of the Board was that in order that all future expenditure on animal nutrition work should be utilised to the best advantage the necessity of establishing without delay a Central Animal Nutrition Institute at Dehra Dun, where lands and buildings are available, should be urged on the Government of India. In answer to a question by Dr. McRae it was made clear that the Board recommended the transfer of the existing staff and work from Bangalore to Dehra Dun and that the minimum expenditure necessary to establish work at Dehra Dun should be undertaken without delay. Items (i) to (vi) under scheme No. 27 as modified by the Committee were then approved with the rider that, in the case of item (vi) the programme of work would have to be amended as recommended by the Committee and the assurance desired by the Committee would have to be obtained. As regards the provision for wages of labourers and on account of the pay of the Physiological Chemist etc. in the Assam scheme (Subject No. 7 of the Agenda), Professor Ghosh said that the amounts seemed to be rather high. Mr. Woodford explained that it was due to the fact that the fodder required for the feeding of the cattle would not be produced on the farm but will have to be collected from outside. As regards the pay of the Physiological Chemist etc. he said that conditions varied in the various provinces and the pay proposed were recommended to him by members of the Animal Nutrition Committee. In the result the Board recommended that schemes 7 and 17 be approved as modified by the Committee.

*Application from the Coorg Administration for a grant of Rs. 1,11,430 spread over a period of 5 years for research work into the selection of the most suitable breeds of Indian Cattle for Coorg. (Subject No. 24 of the Agenda.)*

Colonel Olver presented the report of the Sub-Committee appointed to consider the scheme. Mr. Kothawala supported the scheme and said that it was of vital importance to the Coorg Administration which had very limited resources. Mr. Hurley said that the scheme was of a provincial character and he doubted whether at the end of five years it would be possible to form an opinion whether the present scheme was going to be successful or not. Mr. Ware was against spending such a large amount for such a small area. In the end the Board adopted the recommendation of the Sub-Committee unanimously.

*Report of the Committee dealing with the formation of a nucleus staff of Animal Husbandry Bureau (Subject No. 41 of the Agenda).*

In introducing the report of the Committee which had examined this scheme, Colonel Olver stressed the importance of recording and collection of data on right lines. Both Mr. Allan and Dr. Burns strongly supported the scheme but the former said that unless some assistance was given to the province it would not be possible to supply material to such a Bureau. Mr. Plymen was also of the same opinion that the increase in the number of

such Bureau meant heavy work in the provinces which they could do not without further assistance. The Chairman pointed out the difficulty of making payments from the Research Fund to provinces for clerical staff as suggested. As regards the pay of the Statistical Assistants proposed for the Bureau Dr. Burns said that suitable men could be had on Rs. 150. Colonel Olver explained that the man in view had already gained considerable experience of the kind of work to be done in the Bureau during the last 1½ years and that his present pay was Rs. 215. The Report of the Committee was adopted.

### B. Animal Husbandry, items (1) and (2). M.

Colonel Olver introduced the report of the Committee appointed to consider these Progress Reports. With regard to the criticisms of the Committee on the Dacca Nutrition Scheme, Mr. Carbery explained the lines on which work was being done at Dacca and said that the Committee were not fully justified in drawing the conclusion contained in the report. He said that he would like the committee to amend this part of their report. Dr. Lander explained the view of the Committee. Mr. Iyer entirely agreed with the remarks made by Dr. Lander and added that the two assistants were insufficient for the work desired by the Committee. The Chairman explained that though by an oversight that Mr. Carbery was not present at the Committee when this report was examined and was sitting on another Committee at the time otherwise these technical details could have been thrashed out. In his opinion the Board was unable to either endorse or to reject the report of the Committee. He therefore commended the remarks of the Committee to Mr. Carbery for consideration.

The report of the Committee on the progress report of the Veterinary Investigation Officer, Bombay, was adopted.

### *Report of the Committee regarding the question of classification under which the quinquennial census of cattle in India should be made, (Subject No. 42 of the Agenda).*

Colonel Olver introduced the report. The Board decided to accept the report with certain minor changes and that it should be circulated to local Governments for opinion.

### *Legislation for the prevention of adulteration of dairy products. (Subject No. 48 of the Agenda).*

The Chairman explained that this subject were merely for the information of the Board. In accordance with the recommendation of the Animal Husbandry Wing of the Board of Agriculture and Animal Husbandry, a Committee had been appointed to consider this question. This Committee will meet during the coming winter and its report will be placed before the Board at its next meeting.

## NEW WAR ON MOSQUITOS.\*

### Experiments in Bombay.

#### *Lured to destruction by death rays.*

The Victoria Gardens in Bombay are the scene of an interesting series of experiments for the destruction of mosquitos that is being carried out. Visitors to the Gardens in the late evenings have been intrigued by the hum of a generator and a curious blue light that has illuminated the trees. The experiments are carried on far into the night, long after ordinary visitors have departed.

The machines that are being employed are the invention of a Frenchman, Monsieur V. Menasche, who is making a tour of the countries of the world in which diseases propagated by flying insects are prevalent. Somewhat naturally, India, was the first country chosen, and M. Menasche arrived in Bombay with introductions from the eminent entomologist Prof. Seguy, of the Natural History Museum in Paris. It is with the co-operation of Lt.-Col. Sokhey of the Haffkine Institute, Dr. J. S. Nerurker of the Bombay Health Department, and Mr. Laud the Superintendent of the Victoria Gardens that the tests are being carried out.

The machines have been exhaustively tried out in Europe, notably in Portugal, where large numbers of dangerous mosquitos, the *Anopheles maculipennis*, were trapped and sent to the Natural History Museums of London and Paris for verification. Happily such malaria carrying species are very rare in Bombay, where relentless war on them has been carried on by the Health Department.

#### Attracting the Insects.

Briefly described, the machines utilise the rays of specially designed mercury vapour lamps to attract the insects, which, as they approach the machines, are sucked downwards into a gauze container by means of an electrically driven fan. The machines vary somewhat in size and design to suit the particular specimens that are being sought.

It is, of course, well-known that mosquitos are not ordinarily attracted by light,—on the contrary they avoid it and fly only in the dark. The special lamps employed however, do not emit light in the ordinary sense, but rather rays, which according to their characteristics, have a curious attraction for insects. For different insects, separate lamps of varying design are used, whilst alterations are made to the electric current that is allowed to pass through them.

#### Three Machines Used.

In a series of experiments carried out in the presence of a representative of the *Times of India*, three different machines were employed, each having a different combination of lamp and current. They were placed, perhaps, fifteen yards apart and each subjected to a run of about half an hour. An inspection of the contents of the containers of the three machines showed that whilst the first machine attracted mainly moths and flying beetles, the third machine caught about ninety per cent. of the mosquitos, whilst the intermediate unit attracted an almost equal number of mosquitos and somewhat larger insects such as flying ants. In other words, it is possible to "tune" to the insect being sought.

In the dry season that immediately proceeds the rains, flying insects are, of course, comparatively few, and with the ordinary lamps of a motor car scarcely

\* Times of India, June 2, 1934.

one could be seen. As soon as the machines were started up, however, they appeared in large quantities, whilst overhead, bats were flying around to take advantage of the unexpected feast offered.

#### French Scientist.

We understand that when M. Menasche has completed his research work in Bombay, he will travel upcountry to continue his experiments in malarial districts before going on to Siam. In that country he hopes to be able to experiment on the insects responsible for the disease *Surra*, a pernicious form of anemia very prevalent amongst cattle there. It is stated that in some districts the mortality due to the disease is as high as fifty per cent. Scientists are following the experiments with interest, as the new method appears to possess interesting possibilities.

### RETIREMENT OF DR. L. C. COLEMAN.\*

#### Loss to Mysore Agriculture

After 26 years of close contact with Agriculture in Mysore, during which period several measures calculated to improve the position of the ryot, were effected, Dr. L. C. Coleman, Ph. D., C. I. E., Director of Agriculture in Mysore retired from service with effect from to-day. The large gathering that had assembled at the City Railway Station to bid him farewell last night bore testimony to the great regard and esteem in which he was held by agriculturists and officials and non-officials alike. As has been reported in these columns already Mr. A. K. Yegnanarayana Aiyar succeeds Dr. Coleman as Director of Agriculture in Mysore.

Entering the Mysore service in January 1908 as Mycologist and Entomologist, Dr. Coleman soon made a mark and won the esteem of Government and people alike, by his disinterested service in the cause of Agriculture. In 1913, he was made Director of Agriculture in Mysore, which position, he has been occupying ever since. During the whole period of service, Dr. Coleman fully identified himself with the Mysore ryot and was ever a guiding star in all their movements. His deep insight into the agricultural conditions in every part of the State and his burning desire to improve the lot of the ryot, stood out prominently and endeared him to the ryots.

Except for a short period of two years between 1925 and 1927, when Dr. Coleman and the Government had differences, as a consequence of which he resigned, but later joined service, his has been an unbroken record of useful service both to the Government and the people.

At an extraordinary general meeting of the Mysore Agricultural and Experimental Union, Bangalore, held on Sunday last, a resolution, was passed placing on record the invaluable services rendered by Dr. Coleman, the President of the Union, to Agriculture in Mysore.

#### Dr. Coleman's Reply.

In reply to the resolution, Dr. Coleman thanked the Union for the kind words said about him and his service to the Union and to the State. When he entered the Mysore service, his object was to build up an organisation manned by Mysoreans which would be of permanent and lasting benefit to the agriculture of the State. He could now say that that organization was there not in its entirety, but in the form of a skeleton. They had now under the Agricultural

\* Hindu, March 1, 1934.

Department, the Veterinary Department, the Serum Institute and the Amrit Mahal Department. This skeleton was nearly all that one would require for investigation and demonstration work for the advancement of Mysore Agriculture.

In conclusion, Dr. Coleman said that he parted from them with the kindest feelings for all those with whom he had been associated, with feelings of profound loyalty to H. H. the Maharaja and the present Government, and with feelings of most profound gratitude to the many officers of the State. He would carry with him very very cherished recollections and memories which would be with him wherever he was, as long as he lived. He felt quite certain that the Agricultural Department in future would be as successful, as and even more useful, than it had been during the past.

The future home of Dr. Coleman will presumably be Canada.

### AGRICULTURAL RESEARCH COUNCIL.

#### Annual Report\*

In spite of lack of funds, valuable work to promote Animal Husbandry and Agriculture in India was done by the Imperial Council of Agricultural Research, whose report for the year 1932-33 has just been issued.

The Council (says the report) has been greatly handicapped in prosecuting Animal Husbandry development by the fact that adequate funds were not available during the year either at the Centre or in the provinces for any big schemes of research or development and owing to the general lack of due attention to the problems of Animal Health and Animal Husbandry which has been so noticeable in India in recent years. In spite of this, the Council has done its best during the year to promote research and development in the various branches of animal husbandry. The following notes indicate the salient features of the work done:—

In regard to animal diseases a scheme was passed by the Governing Body last year whereby the Council would finance the appointment of veterinary investigation officers in such provinces and Indian States as were willing to accept the Council's grant for this purpose on certain prescribed conditions. Eight major provinces and the Hyderabad State have now accepted the grants, with the result that Veterinary Investigation officers started work during the year in Bengal, Bombay, Punjab, the Central Provinces, Bihar and Orissa and Hyderabad State. That valuable results are being produced in this connection is evident from the diaries of these officers which have been submitted periodically to the Animal Husbandry Expert of the Council.

Another problem that engaged the attention of the Council was the strengthening, from the funds at its disposal, of the Imperial Institute of Veterinary Research, Muktesar, by adding to the staff of the institute a protozoologist for a period of five years. The scheme was sanctioned in 1931-32, but the year under report saw only the preliminary settlement of certain administrative and financial questions between the Council and the Government of India and no appointment has yet been made. For this reason, it has not yet been possible to take up the systematic study of the protozoa, a class of blood and other unicellular parasites

\*Hindu, January 19, 1934.

in which are included some of the most important causes of disease among live-stock in India, but it is hoped that the appointment of a suitably trained and experienced protozoologist will shortly be made.

Consideration of another important scheme designed to make a thorough study of tuberculosis and Johne's disease among domesticated animals in India will be dealt with at the 1933 meeting of the Governing Body. In view of the great and growing importance of the subject to the health of human beings as well as livestock, it is hoped that arrangements will be sanctioned by which this highly complex problem may be satisfactorily dealt with in the near future. The Council has also initiated measures for the prevention and control of diseases among animals by means of legislation, and the promotion of all-India legislation for the control of animal diseases—such as exist in other countries—has been further dealt with.

### Promotion of Dairying.

In order to promote dairying, the Council has engaged a whole-time statistician to compile statistics showing the comparative efficiency of the different feeding scales adopted in the Military dairies and of the effect of disease and other factors on dairying efficiency. The statistician has been at work since April 1932, and it is expected that he may take at least another year to complete the detailed examination of the great mass of material which is available. Valuable practical conclusions have, however, already emerged from this statistical analysis.

It is generally recognised that poultry science in India is still in its infancy and the Council has endeavoured to place this important cottage industry which in Great Britain, for example, is now worth about £150 millions per annum, on a more satisfactory footing, but owing to financial stress little has so far been accomplished. It was decided that India should be represented at the 5th World Poultry Congress to be held in Rome and the Council undertook to send a suitable representative to the Congress.

### Animal Husbandry.

The Council has done, during the year under review not a little to promote animal husbandry in India on modern lines, but lack of funds on the one hand and on the other the lack of scientific development of markets for animal products have militated against such marked advance over a very wide front as is needed if any satisfactory progress is to be made in the proper economic exploitation of livestock and livestock products in India. In this matter the generally low standard of quality and the generally unsatisfactory condition in which such products are now marketed is a severe handicap, and it is a matter of the utmost importance that these standards should be so raised as to enable Indian products to compete in world markets on equal terms.

## Reviews.

### Annual Report of the Civil Veterinary Department, Punjab, for 1932-'33.

The report discloses, as usual, a very high standard of useful veterinary work and we agree with the Punjab Government that "The Director, Veterinary Services, is to be congratulated on an extremely informative and interesting report and his department on a thoroughly sound 12 months' work during the year 1932-33." Punjab is one of the few Provinces in India, where the improvement of live-stock is in the hands of the Civil Veterinary Department and it is, therefore, a matter of extreme satisfaction to us to read the following remarks of the Government, "The Department is evidently making steady progress in every direction to which its activities extend. Among these activities, pride of place should perhaps be given to operations directed to the general raising of the standard of cattle and other live-stock." These remarks afford convincing and conclusive answer to the question which other Provinces like Madras are still debating whether the live-stock operations should be handed to the Veterinary Department. We do hope that, at least after seeing the splendid results achieved in the Punjab, the other Provinces will not hesitate to hand over the live-stock problem to the one and only department competent to handle it.

"As regards the curative and preventive treatment of diseases, the department is progressing steadily not only in the collection of information and the spread of practical and scientific knowledge, but also in gaining the confidence of the countryside." Unfortunately, mortality from contagious diseases is still very high and Rinderpest continues to lay a heavy toll on the cattle; but it is assuring to note that the results of the attempts to perfect the protective inoculation against Rinderpest are said to be most encouraging.

We have great pleasure in endorsing the review of the Government that the affairs of the Department have been conducted in an admirable manner.

### Annual Report of the Civil Veterinary Department, Assam, for 1932-33.

Mr. W. Harris, V.D., M.R.C.V.S., I.V.S., who practically founded and administered the department for several years, retired from the service on the 1st of August 1932. Outbreaks of contagious diseases and death, from them were greater among both equines and bovines during the year than in the previous year, total number of mortality being 24,300 and of inoculation performed being 20150 during the year, among equines, bovines and other animals. Rinderpest was again the greatest offender claiming a toll of 11,887 animals. Serum alone method of inoculation against Rinderpest, combined with infection with saliva and urine still holds good in the provinces while sero-virus inoculation is the method widely practised now in almost all the other provinces.

The report says in this connection:—The new method of vaccination called virus alone method was started during the year as an experimental basis and the result obtained was promising and the Department wishes to adopt this method more widely as soon as funds are available for a separate staff for the purpose." No details are given of this experiment. Intravenous injection of Arsenic in the treatment of Anthrax cases has been recorded to have given successful results. A case of Johne's disease was noticed among Sindhi cattle at the Government Cattle Farm at Khanapara. The number of castration of weedy bulls rose during

the year to 21,272 from 17,374 in the previous years, but no mention is made of number of breeding bulls maintained by the state or the local bodies in the province.

No new appointments were made and even the vacancies were not filled up during the year. Economic depression and consequent financial stringency could be noticed almost on every page of the report.

In spite of the fact that each of the four Veterinary Inspectors inspected most of the institutions two to four times during the year, the report still regrets that the inspection by the Veterinary Inspectors had to be curtailed to some extent to effect economy in expenditure. We would suggest inspections may be reduced to the minimum as in the sister medical department and the services of these senior officers may be made available to combat the numerous outbreaks of several contagious diseases among all classes of animals in the province. The department has, however, done its best under the adverse circumstances.

#### **Annual Report of the Civil Veterinary Department, in British Baluchistan, for 1931-32.**

There is no outstanding feature in this report, except that the already inadequate staff of the department suffered from reduction during the year, even though the number of outbreaks of various contagious diseases among all classes of live-stock and the number of attacks and deaths point to the great necessity for expansion of the department. There is a Deputy Superintendent in charge of this Department and he had a staff of only one Veterinary Inspector and 16 Veterinary Assistant Surgeons, but the Retrenchment Axe abolished the Veterinary Inspector's post and a Veterinary Assistant Surgeon's post during the year. There were only 10 Veterinary Dispensaries and no new ones were opened owing to financial stringency.

The number of contagious cases was 42,993 as against 56,317 in the previous year and the mortality was 4,197 as against 7,479 in the previous year. These are still high figures for a small province. Rinderpest was responsible for only 88 deaths but Anthrax, Sheep-pox, Contagious Pleuro-Pneumonia, Foot and Mouth Disease, Wire worms, Liver fluke and other diseases have all contributed towards the large number of attacks and deaths in the year.

The Department is also in charge of breeding operations. Only 9 stallions were kept. 312 mares were covered. Neither cattle nor any other breeding operations were undertaken. Three medals and prizes to the value of Rs. 2,240 were awarded at the Sibi Horse and Cattle Show. The horse-breeding is popular with Zamindars in the north.

The number of cases treated and castrated shows a steady increase.

#### **Annual Report of the Civil Veterinary Department in British Baluchistan, for 1932-33.**

The subordinate staff was further reduced by the abolition of the post a Veterinary Assistant Surgeon during the year. Thus there were 14 Veterinary Assistant Surgeons against 15 in the previous year. The number of outbreaks of contagious diseases has practically remained the same as in the previous year, but there were 31,353 attacks and 2979 deaths as against 42,993 attacks and 4197 deaths in the previous year. Rinderpest was responsible for 32 outbreaks, with 379 attacks and 287 deaths as against 2 outbreaks, 365 attacks and only 88 deaths

in the previous year. Black-quarter was also responsible for 4 outbreaks, 75 attacks and deaths; camel mange for 100 attacks and 63 deaths, and Anthrax for 9 outbreaks and 139 attacks and deaths. Serum alone method of inoculation against Rinderpest was done in 4713 animals as against 369 in the previous year. The number of cases treated at the 10 dispensaries was 27,144 as against 23,837 in the previous year and this is a solid increase.

The number of stallions increased from 9 to 10 as a thorough bred stallion "Welsh Lad" was added at a cost of Rs. 2,000 during the year. The usual medals and prizes at a total value of Rs. 2,642 were awarded at the Sibi Horse & Cattle Show in spite of financial stringency. This is good indeed.

A perusal of the report justifies the remarks of the Deputy Superintendent in charge of the Department "the work of the subordinate staff throughout the year was satisfactory" and Khan Sahib N. K. Vacha and his staff deserve congratulations on the increased work turned out during the year.

#### **Annual Report of the Civil Veterinary Department, Burma, for 1932-33.**

There was a rearrangement of Veterinary circles and sub-circle to suit the administrative and economic purposes during the year. It is not possible to find out in the report under Education what Educational work the Veterinary College carried out in the year, but table No. 7 shows "nil" in all the columns under students and expenditure in the College. Financial stringency stood in the way of staffing the college and making it a training ground for the future recruits to the Civil Veterinary Department. No action was taken by the Government on the proposals submitted to it in this behalf.

Propaganda work was carried on by the subordinate staff among the cultivators and its beneficial results have been recognised by the Government. A number of leaflets on various diseases and preventive measures was printed and issued during the early part of the year, but again the monster of financial stringency forced discontinuance of this useful work during the latter part of the year.

Outbreaks of epizootic disease were on the increase during the year as anticipated in the previous report and the subordinate staff was concentrated on preventive measures to combat these outbreaks. The total recorded mortality from all causes was 83,799, an increase of 23,488 over the figures of the previous year. There were 1,291 outbreaks and 22,472 deaths in the year as against 647 and 11,821 respectively in the previous year, Rinderpest alone being responsible for 1,255 outbreaks and 19,199 deaths as against 620 outbreaks and 8,689 deaths in the previous year. The report says "This unfortunately further confirms the forecast in the last year's report of a commencing cycle of increased incidence of disease, particularly Rinderpest". Still, much could not be done to prevent the spread of this disease and the report in this connection says "until it is possible to introduce a system of organised control, which will be in operation whether the disease is present in an area or not, the presence of Rinderpest in enzootic form throughout the greater part of the province will have to be accepted as unavoidable. This, from a State Veterinary point of view is very unsatisfactory."

Sero-virus inoculation against Rinderpest was discontinued owing to its "cost and difficulties of practical application." Burma will not be able to overcome these difficulties until she will have her own local arrangement to produce serum and virus for her use. Serum inoculation with unit doses, segregation and stand-still methods were adopted against Rinderpest and this no doubt resulted in a

considerable saving in the cost of serum but it is not stated how far these methods were successful in saving the country from the economic loss of animal life, 11,93,192 inoculations against Rinderpest, 3,847 against Anthrax and 4379 against H. S., were done during the year as against 1,11,075; 2816 and 1,923 respectively in the previous year. Naturally there was a considerable fall in the number of non-contagious cases treated as there was a reduction in the number of subordinate staff from 167 to 129 as a measure of retrenchment and the depleted staff had to be concentrated to attend to the outbreaks of fatal contagious diseases. It will be a pleasant surprise to our readers in these parts that Burma Government recognises the value of good work on the part of even its C.V.D. employees and in recognition of such good work, the Government awarded a certificate of honour and a gold watch to the Veterinary Inspector Mr. U. Win.

In spite of the depleted staff, financial stringency and many other handicaps, the Department has carried out its work quite creditably under the trying circumstances.

The report contains many useful tables, maps and graphs for ready reference regarding the outbreaks of contagious diseases and mortality from them.

#### Administration Report of the Government Veterinary Surgeon, Ceylon, for 1932.

Rinderpest continued to prevail but in a less severe form in all the provinces excepting Colombo and the western province which were free from it. The total number of cases fell from 20,634 in the previous year to 8,373 during the year. 27,667 animals were vaccinated with spleen pulp vaccine prepared locally by the department. This ensured a prompt and steady supply and effected a saving of Rs. 80,000 as the cost of inoculation of these animals with imported rinderpest serum would have cost Rs. 83,000. Other contagious diseases were not severe during the year. 274 cases were examined for rabies and of this 163 were positive.

The restrictions placed on the importation of cattle, sheep and goats and poultry from India and other sources into the island and the active encouragement given to the breeders and small holders by the Department, minimised the losses from infected diseases, effected a saving to the island, of Rs. 62,620 formerly spent on the purchase of imported poultry and gave great impetus to the local poultry and other live-stock breeding operations. In spite of these restrictions, there was no scarcity of poultry and the prices remained the same.

The report gives us a census of cattle, buffaloes, sheep and goats and also the number of these animals slaughtered during the year in different slaughter houses in the island. All the cattle and buffaloes, a little less than half of the sheep and a little more than half of the goats slaughtered were obtained locally.

The Department manages a Government Dairy in Colombo and a branch farm at Ambepussa. The health of the stock on the whole was satisfactory during the year. The dairy supplied all the milk required by the hospitals, sold 29 cows, 89 calves 9 draught bulls and 2 stud bulls and trained 6 men sent by the Hon'ble Minister for Agriculture, in the general handling of cattle. The branch farm attends to the rearing of the young stock for the dairy at Colombo and for sale to the public.

Parasitic gastritis among young cattle and goats and Pleuro-pneumonia among the latter caused good deal of trouble in the farm. Goat and Poultry breeding formed part of the activities of the farm. Both the farm and the dairy worked at a net profit of Rs. 29,963.

The report is a record of a good year's work.

#### Administration Report of the Government Veterinary Surgeon, Ceylon, for 1933.

This report is the record of yet another year's good work and is really a very interesting and instructive State Document of immense value, especially to those engaged in the difficult task of Veterinary State (Preventive) Medicine. Rinderpest which was on the decline at the close of the previous year, showed further decline and at the end of the year under report the disease was present in only one village in the whole island. According to the report this epizootic was introduced by cattle imported from India in March 1928, the whole island having been free from infection during the preceding twelve months. The report recapitulates the course of the epizootic from March 1928 to the end of 1933 and says "Within a few months of prohibition of import of cattle from India the disease was eradicated in Colombo which has remained free from rinderpest ever since. That is a period of over four year's freedom which is the longest period of freedom from rinderpest which Colombo has enjoyed for as long as records exist." The report further proves that this fell disease is not an enzootic in the island, but is introduced from this country (India) and it also justly "emphasises the effectiveness of prohibition and the danger which would arise, should importation from India ever be resumed." India has not only been unable to save herself from the great economic loss of animal life, but she has also been a dangerous neighbour to the animal life in Ceylon.

"The total number of Rinderpest cases reported from 1928 to 1933 is 55,955 of which 48,786 are reported to have died and the report frankly says these figures are by no means a complete record of the losses sustained and one would probably err on the safe side by multiplying these figures by two." We know that this is the case in this country also. A very useful weapon in controlling the disease in the Island was the spleen pulp vaccine prepared at the Travelling Laboratory. Regarding this stuff the report says in paragraph 18:—"The Spleen Vaccine when used under favourable conditions gives very good results. Its chief disadvantages are—(a) When prepared in the field it is not possible to test each batch for potency with a result that some batches are of low potency and fail to confer the protection anticipated. (b) It should not be used in herds which are infected before the time of vaccination if best results to be obtained. The vaccine does not confer immediate immunity. If animals in the incubative stages of the disease are vaccinated the development of the disease is not prevented. This characteristic of the vaccine was the cause of poor results in several instances where it had been used on cattle which were in the incubative stages, as, for example, at the Agricultural Experimental Station at Anuradhapura where 16 buffaloes were vaccinated. Some were found to be sick within 48 hours of vaccination proving that they had been infected prior to vaccination. As a result the vaccine failed to protect these cattle and 12 out of the 16 died of Rinderpest. (c) The immunity conferred does not appear to last much longer than six months as a rule. Exact experiments were not made on this point but field experience justifies this conclusion. In spite of these drawbacks it is the most practical and economic method of controlling rinderpest, especially in an undeveloped district, which has yet been discovered."

Nearly 10000 cattle and buffaloes were vaccinated during the year with this vaccine at a cost of Rs. 1,200. If all these animals had been inoculated with anti-rinderpest serum imported from India, it would have cost Rs. 28,000 approximately.

Other contagious diseases were not severe during the year. Only Anthrax claimed 197 cases and of those 175 cases occurred in the Municipal Quarantine Station, Colombo.

The report next deals in detail with the history of the Bovine tuberculosis in Ceylon for the past 37 years for which records exist as this disease appeared during the year in an unusually large number of cases. After recording exhaustively the results of the investigation and enquiries conducted during the year, it is stated "A report was made to the Government with suggestions regarding enacting special regulations to deal with this fell disease and these suggestions are under the consideration. Already regulations have been passed and are in force requiring cattle imported from Europe, Australia, &c., to be accompanied by a certificate that they have passed the Tuberculin Test." The following conclusions are recorded *inter alia*:—(a) that the disease is as yet confined to cattle of European and Australian breeds. No case has as yet been seen in an animal of the indigenous breed. This cannot be taken to mean that the indigenous cattle are in any way immune to the disease. It may only be that they have not been exposed to infection as it is very unusual to find cattle of the indigenous breeds kept in the same sheds as cattle of European and Australian breed. (b) the disease does not appear to be widespread in Ceylon.

Under Animal Husbandry, the Government Dairy at Colombo and the branch farm, Ambepussa, many interesting details are given of the various useful activities of the department during the year.

It is difficult to do justice to the report of this kind in a short review in a Quarterly, but we unhesitatingly recommend to the readers, a perusal of the report itself as this richly pays them for the trouble.

We heartily congratulate Mr. M. Crawford, M.R.C.V.S., Government Veterinary Surgeon, Ceylon, and his staff on the good record of work done during the year.

#### **Annual Report of the Civil Veterinary Department, Mysore, for 1932-33.**

This report records an all-round on increased work both in quality, quantity and importance, done during the year. The important features are:—(1) The seasonal conditions were favourable and fodder and water were available in plenty. (2) Rinderpest mortality was the lowest on record being only 1066. (3) The important part played by the Serum Institute was recognised by the Government and it was placed on a permanent basis in buildings specially constructed on a large estate near Bangalore, with up-to-date equipment. (4) The Institute prepared anti-Rinderpest serum and bull-virus (Rinderpest) and undertook the preparation of all the important biological products to the Department, including Anthrax Serum and Rinderpest Goat-virus. (5) 520 animals were inoculated with goat virus alone in all actual outbreaks of Rinderpest side by side with sero-virus method in the same village. Figures are given in both cases and they prove that Goat-virus alone method yields more satisfactory results in actual outbreaks. (6) A castration Demonstration Class of 6 months duration was held to train Salustries and Compounders. (7) The village Panchayats have employed the services of trained castrators for work in their area. (8) Good breeding bulls are supplied to the village Panchayats. (9) There has been an increase in the number of cases treated and castrations performed. (10) The

Department has become popular with the people. (11) The philanthropic people in appreciation of the good work of the Department, have come forward to provide buildings for the Veterinary Dispensaries in places like Saklespur and Magadi. (12) Similarly Bangalore City is soon to get buildings with up-to-date equipment for the Veterinary Hospital, befitting its position as the administrative capital of the premier State. (13) The Scientific Section is doing excellent work in the investigation of Johnes and Parasitic diseases. (14) It has secured a grant for the research work in this direction. (15) Thousands of Nasal Granuloma cases in two taluqs were successfully treated with a course of intravenous injection of Antimony Tartarate. (16) They are all being watched for the re-appearance of the disease. (17) Periodical dosing of sheep for parasitic diseases was carried on in thousands of cases with success. (18) Sheep-pox is being reported in the State and vaccination was carried out in 38 outbreaks. (19) 94 Cattle Fairs and 12 Village Panchayat Conferences were attended by the staff. (20) The Municipalities will hereafter invite the Veterinary Officers to their meetings whenever relevant matters come up there for discussion. (21) Periodical inspection of Hackney Ponies was carried out by the staff.

The report contains a record of many useful items of work done, of which any Department should feel proud.

#### **HORSE BREEDING, JULY 1934.**

An article in the July number of "Horse Breeding," entitled "Climate, Grazing and Environment," makes a brief comparison between the conditions prevailing in England, Arabia and India with regard to horse breeding, and appeals for an earnest consideration of the last named as a suitable country for the production of good horses. In this respect it regards India as a sort of half-way house between England and Arabia. England has certain natural conditions which enabled her to build up her thoroughbred horse, but these alone would not have achieved the well known results unless they had been supplemented by other factors:—*The Test of Performances* on the racecourse by which she ascertained which were the best animals for the stud to improve and perpetuate the breed; *The Stud Book*, by which she maintained a careful record of the breeding of the best animals; and *The Racing Calendars* in which a record of performances was kept.

But Climate, Grazing and Environment are other factors which have a very important bearing on horse breeding. If these are not suitable to the evolution of a particular type, another type that will respond and react to the conditions must be evolved and standardised. Nature, which sometimes seems to us mortals a fickle jade, can be harnessed and controlled by us up to a certain point, but not always nor all the way. Arabia has conditions different to England which have evolved the Arab. What of India? She has not the wonderful permanent pasture of England but, on the other hand, she has the facilities for growing fine crops of lucerne, shaftal and other fodder which give excellent results; and she is much better situated than Arabia as regards food stuffs generally. Her trouble in the past has been not so much the lack of natural advantages as the want of scientific knowledge of mating and rearing and most serious of all, the extraordinary negligence in the care of young stock during the first eighteen months of their life, the most important period of their existence.

Taking it all round, it may be said that India is more nearly akin to Arabia in her natural conditions but that she possesses greater facilities for *creating* other conditions more nearly approaching those of England. This is where the intelligent human factor comes in.

The problem, therefore, which now confronts India is to fit her horse-breeding operations to her natural circumstances and to other conditions which can be developed by human agency. These other conditions are grazing, good management and the racing test for her stock.

In another article dealing with the Test of Performances, it is stated that, "The Royal Commission on Horse Breeding in India in 1901 said that it should be constantly borne in mind that the true and only tests of the well-bred horse are his performances on the racecourse and in the hunting field. Thirty two years, or six generations of horse-life, have elapsed since then but has India made any genuine or sustained effort to implement that sound pronouncement by securing for her home-bred horses the necessary test of the racecourse?"

In view of the widespread increase of riding for boys and girls in England and America, where its health-giving properties are fully recognised, an appeal to young India to indulge in this exercise is opportune.

The report of the Government Pony Stud at Pyawbwa, Burma, is most interesting as showing what valuable results can be achieved by operating on a semi-commercial basis. By leasing and selling some of its stock for racing purposes, charging fees for the service of its stallions and by other wise measures, it has cleared off its debts to Government and is now entirely self-supporting.

Excellent accounts of the Kadir and Muttra Pigsticking Cups, a very interesting Review of the 1933-34 Polo season, racing notes and report of several Horse Shows conclude the number.

The 13th Imperial Delhi Horse Show will be held on the enlarged ground at the Irwin Amphitheatre, New Delhi on the 11th., 12., 14. and 16th. of February 1935.

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### ERRATA.

In Vol. X, No. 2, page 122, line 2. for 'cysts are met' read 'cysts were being met.'

in line 5 for 'find out' read 'finding out'

.. .. 17 for 'method the cysts' read 'method cysts'

.. .. 19 for 'in petri-dish' read 'in a petri-dish'

.. .. 30 for 'after their outer' read after its outer'

.. .. 31 for 'capsules' read 'capsule'

Page 123, line 7 for 'their outer capsules' read 'its outer capsule'

.. .. 30 for "Ringerlocke Solution—0.24 grs." read Ringerlocke solution—NaCl—0.9 gm.  $\text{CaCl}_2$ —0.24 gm. KCl—0.42 gm. NaHCO<sub>3</sub>—0.20 gm. Glucose—0.50 gm. H<sub>2</sub>O—100 c c.

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Mr. A. J. WILSON, G.M.V.C.,  
District Veterinary Officer, Coimbatore, C. V. D., Madras,  
whose death took place on 11-5-'34.

## Obituary.

### THE LATE Mr. A. J. WILSON, G. M. V. C.

We deeply regret to record the death of Mr. A. J. Wilson, G.M. V.C., District Veterinary Officer, Coimbatore, after a brief period of illness at the St. Barth Hospital, Ootacamund, on the 11th May, 1934.

Mr. Wilson was one of the senior most Officers of the Civil Veterinary Department, Madras, having entered service nearly 25 years ago. A very strict and earnest officer, he served the interests of the Government very well during his entire period of service. His winning manners and affable temper soon won the confidence of the people with whom he came in contact and he exerted a good deal in meeting the wants of the poor Agricultural population of the Presidency.

It was while carrying an extensive campaign against Rinderpest by S. S. method of inoculation in the wilderness of the Kollegal Taluk, that he contracted a very severe type of Malaria which, unfortunately, and in spite of the best medical aid, proved fatal to him in his last inspection tour on the Nilgris.

He was the Editor of the now defunct "Madras Veterinary Journal" which, as everyone knows, he conducted with ability and courage.

He will be missed by one and all of his numerous friends and we extend our sincere and heartfelt sympathy to the bereaved family.



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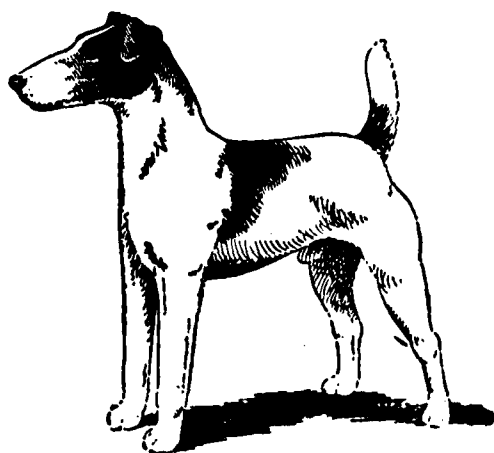
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