

Madras Veterinary Journal.

No. 18, January 1923.

MS. 10211/113

1923.18.

196944

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No. 18

THE MADRAS VETERINARY JOURNAL

 Veterinary
 Journal

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EDITOR

THE DEPUTY SUPERINTENDENT, CIVIL VETERINARY
DEPARTMENT, III CIRCLE, CHEPAUK, MADRAS.

*Published under the Supervision of the Chief Superintendent,
Civil Veterinary Department, Madras.*

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EDITORIAL

It has previously always been held both by Medical and Veterinary authorities in India that Bovine Tuberculosis is very rare, at least in the south of the Peninsula.

Recent events in Madras city, however, have made one wonder if the apparent rarity of the disease is not really a question of its being overlooked.

In Madras the only large body of cattle, which may be said to be completely under Veterinary supervision, are those belonging to the Corporation, and this is only for about the last two years, so that it is significant that during this short time Mr. Venkataratnam Chetti, as he explains in his article on this subject, has discovered several animals suffering from Tuberculosis. This occurrence has induced the C.V.D. authorities in this Presidency to offer special facilities to anyone wishing to test suspicious cases with Tuberculin, and it is hoped in this way to obtain some reliable figures as to the extent of Tuberculosis in cattle outside Madras city.

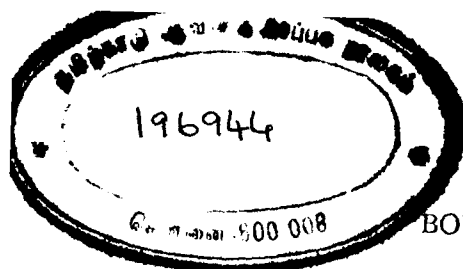
We have received a letter from a correspondent pointing out some of the grammatical errors and examples of bad English which have occurred in articles in previous numbers of this Journal.

We are unable to publish the letter owing to its length, but we are in agreement with a good deal of what our correspondent writes.

Many of the articles sent for publication require and receive a good deal of correction, and even then are not perfect, but we would much prefer to receive an article hurriedly written, to not one at all.

We would, however, urge our contributors to take as much care as possible over the compilation of their articles, for the extra time spent in this matter cannot fail to repay the writer and be a greater pleasure to the reader.

This being the beginning of a new year we publish a statement of accounts of this Journal up to 31st December 1922:



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BOVINE TUBERCULOSIS.

BY

C. Venkataratnam Chelli, G.M.V.C., Chief Superintendent, Cattle Depôts,
Corporation of Madras.

During the five years 1917 to 1922, first as an officer in charge of the Cattle ward, Madras Veterinary College, and later as the Chief Superintendent of Cattle Depôts, Madras Corporation, I had occasion to treat a very large number of cattle patients. For instance, in my present post I have not less than 1000 head of cattle under my supervision. The total number of cases of Tuberculosis that have come to my notice is ten, i.e., about 1 per cent, thus showing that the disease is not so uncommon among cattle in Madras as is generally supposed. All the cases were confirmed microscopically. The following are the history and symptoms I have observed in some cases:—

CASE No. 1

History. The Superintendent of one of the Depôts reported to me that a particular bullock was found losing condition rapidly and that the animal had to be detained from work as it went off-feed the previous evening, coughing and breathing heavily.

Symptoms. Rapid loss of condition, Irregular feeding, at times off-feed, or with capricious appetite. Anxious expression. Coat hide-bound and the hair was standing on ends, fever-dry cough more prominent and in paroxysms in the mornings and late in the evenings and night-Breathing abnormal with double heaving of flanks, and nostrils dilated-Percussion showed areas of dullness and auscultation revealed absence of sound in certain areas and wheezing sound in some parts-Bowels sometimes costive or showing diarrhoea with copious fætid, watery evacuations. The animal continued feeding and ruminating until at last anaemia, debility and prostration supervened and it died of exhaustion.

Differential diagnosis:—

Bovine Lymphangitis (multiple abscess) of the lungs presents almost similar symptoms and it was found extremely difficult to distinguish one from the other clinically as the above disease was prevalent at the same period in the form of an outbreak and there were approximately about 100 attacks.

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Post-mortem lesions:—

External appearances.

Emaciation, eyes sunken. Tympanitic condition of the abdomen.

Internal.

*Lungs:—*The whole surface appeared studded with greyish white nodules of the size of a soap nut seed, interrupted by pinkish coloured patches. On section the bronchioles and alveoli were found engorged with gritty and caseated pus.

*Mediastinal glands:—*Enlarged and hard.

*Heart:—*Pericarditis in some, with collection of fluids, and Pleuritis.

*Intestines:—*Affected portions showed patches of congestion.

*Mesenteric glands:—*hard and highly enlarged.

*Liver:—*Enlarged and at times nodular and on section revealed small abscesses.

*Kidneys:—*Congested.

*Bladder:—*Normal.

*Stomachs:—*1, 2, 3, 4. normal.

CASE No. 2.

An aged bullock of 5½ years' service. On 8-8-1922 this was found to have lost its condition rapidly-Special attention was paid to grooming, feed and work.

On 31st August 1922 it was dull, cough was dry and the animal had double heaving of flanks—Temperature was 102° 8' F.

*Treatment:—*Medicated inhalations, internal antiseptics and expectorants. Suspected the case for Tuberculosis and I had it isolated.

1st September 1922.—Thin watery discharge from the nose. Cough in paroxysms. Feeding with reluctance. Ruminating. Dung slightly loose. Temperature 100°F. in the morning and 103°F. in the evening. Treatment continued.

2nd September 1922.—No change in the symptoms.

3rd September 1922.—In the morning the temperature was 101°F. Snoring. Impaired appetite.

In the evening the temperature was 103° 2' F.

4th September 1922.—Morning 102° 6° F. Dung normal in consistency.

Evening 103° 4° F.

5—9—1922.—Temperature 103° 2° F. in the morning. 103° F. in the evening.

6—9—1922.—Temperature 99° 2° F. in the morning and 104° 2° F. in the evening.

The animal was unable to stand and there was a gurgling noise during expiration which hindered auscultation.

7—9—1922.—The animal died at noon.

Post-mortem.—In addition to what had been furnished under the first case, the following was observed.

Trachea and larynx.—Congested in streaks and contained pus. Pus in the abscesses of lungs—fluid in consistency and not caseated.

4th Stomach.—The mucous membrane was congested.

CASE No. 3.

An aged bullock.

On 5—9—1922. this was seen coughing for the first time, though it was found to be losing condition recently—breathing accelerated—Temperature 104° F.—bowels costive—The animal partially refused gram feed, and it was segregated, and kept under observation for Tuberculosis.

6—9—1922.—Temperature in the morning was 102° F. and 104° F. in the evening. Refused gram feed but ate straw and ruminated.

7—9—1922.—Temperature Morning 103° F.
Evening 105° F.

8—9—1922.— „ Morning 103° F.
Evening 105° F.

9—9—1922.— „ Morning 102° F.
Evening 104° 4° F.

The following week, the temperatures kept up high ; and on the 17th of the month Diarrhoea started, and there was complete suspension of feed and rumination, and the diarrhoea was, rather, severe.

18—9—1922.—The temperature was 104° 6° F. in the morning.
Frequency of cough—Prostration.

20—9—1922.—Died in the night.

TUBERCULOSIS IN A BULLOCK.

BY

M. C. Joshi, G.B.V.C., Veterinary Assistant, Dhulia,
West Khandesh District.

Subject.—A brown Gujarat bullock, aged 7 years.

History.—On the 8th May 1920, the above said animal was brought for treatment to the Virangam Veterinary Hospital with the history that it was purchased from a cattle-breeder of Meraj village near Jehalpara about a year ago and was doing quite well until about three months before it was brought to the hospital. The bullock was not feeding properly and was losing condition since 3 months.

Symptoms.—The temperature was 100° F. The respirations were abdominal and 50 per minute. The pulse was very quick and the animal had a dry, hoarse, painful, and paroxysmal cough, and a white muco-purulent discharge from the nostrils. The bullock was getting about 6 lbs. of *Juarce Kadabri* per day. He was not ruminating. There was pain on pressure on the intercostal space.

On the 15th morning, the breathing became very much accelerated, abdominal and painful. The bullock suddenly fell down and died. Two days previous to death the bullock had ceased feeding.

Treatment.—The bullock was treated with electuary of Ammonium Carbonate, Camphor and Extract of Belladonnae and was given medicated inhalations of Turpentine oil, but this did not do any good.

Post-Mortem appearances.—Tubercles were found on both the lungs and pleura. The lungs were hard and contained caseated masses. Both the lungs and pleura adhered to the ribs and diaphragm. Abdominal organs were healthy.

Pieces of lungs were sent to the Principal, Bombay Veterinary College for bacteriological examination and he replied that tubercle bacilli were present.

The case is important as tuberculosis is very rare in village cattle.

COBBOLDIA ELEPHANTIS.

BY

K. Govinda Wariyar, G.M.V.C., Veterinary Inspector,
Forest Department, Mount Stuart.

The infection of bots in elephants is very common and I fear that there is not a single elephant which does not harbour at least a few of these parasites. The fatal termination by this infection depends upon the amount of parasites present and on the pathological havoc caused by them. In fact, many of the diseases as colic, dropsy, diarrhoea etc., when properly diagnosed, will be found to have been caused by these parasites. I intend to describe what little I have observed and studied during my short experience in the forest department, and I believe, this short article may not be out of place, if not really interesting.

Occurrence :—The infection is found in wild and domesticated elephants. The Bot fly (*Cobboldia elephantis*) is generally seen in marshy places and grassy valleys and it is commonly found with elephants, in company with numerous biting flies, trying to find an opportunity to deposit a few eggs at a convenient place. I shall now try to describe their different stages of life as briefly as possible.

The Bot fly is about the size of a small bee of a black colour with a chestnut head. They possess fine hairy legs and produce a slight irritation when placed on one's hand. They are found in abundance in grassy places. They need to be distinguished from other flies, which are only biting flies.

Mode of infection :—The Bot fly hovers about elephants and deposits eggs in a convenient place. The usual place selected is on the hairs at the angle of the mouth or at the base of the tusks. These eggs are yellowish-white in colour, and lie on the tusks in layers known as "Bot Galleries". We may find 3 or 4 layers and sometimes more. The quick formation of these layers is very striking, as an animal carefully washed in the evening and left for grazing in the forest comes in the next morning with a few layers of these galleries. These are not very easily removed as they adhere very firmly to the tusks, and a knife will have to be employed very often to scrape off these eggs.

After these eggs are deposited, they are easily taken in by means of the trunk. Elephants possess the peculiar habit of rubbing their

mouths and tusks with their trunks probably due to the irritation set up by these eggs and biting flies and they easily enter the mouth and thence the Alimentary Canal. The larvae which hatch from these eggs are called Bots. They are in various lengths from half to one and a half inches of a dirty white colour. They consist of segments and each of these segments is separated from the other by deep fissures; anteriorly and posteriorly they become tapering and the posterior extremity becomes almost pointed. They are armed with hooks which enable them to be attached firmly to the mucous membrane.

Habitat.—Bots are found in good numbers in the stomach and intestines. They are also found in the respiratory organs and it is not unusual to find a few bots sneezed out by an animal although he does not seem to suffer to any appreciable extent by the infection. Some of the air sinuses of the head are also found to contain a few of these bots.

Symptoms.—The confirmation of the presence of bots is to find them in the faeces, but only in rare cases is this done. Other symptoms are:—Diarrhoea, loss of appetite, dropsy of the lower jaw, abdomen and even of the extremities. Many cases of dropsy are probably caused by bots, but we cannot be certain of this as we find very often a mixed infection of bots, nematodes and even cestodes. When the attack is severe and of a chronic type, which is the usual course of the disease, a progressive anaemia is set up, animal loses condition, becomes sluggish goes completely off feed, develops dropsy and dies.

Treatment.—*Preventive*. Particular attention should be paid, when animals are being washed to remove bot galleries from the tusks. A good amount of common salt in their daily ration will be of much use. The administration of tonic powder containing pulverised omam Sodi Bicarb. Nux vomica, Ferri Sulph and Chiratta, will be beneficial as a preventive.

Curative.—*Oleum Terebenthinae* in doses of one to two ounces in egg-albumen or oil should be administered for a fortnight at least. This treatment followed by a purgative and tonics will effect a temporary cure. The administration of Carbon-di-Sulphide and Thymol should be of use although I have not yet used these drugs.

Pathology.—The pathological changes present will be found differing according to the number of parasites present and to the amount of time occupied by these parasites in the animal's body.

The most common change is the presence of haemorrhagic spots in the mucous lining of the stomach and intestines. In some cases the mucous membrane is completely peeled off in several places. In some others the muscular walls of the intestines are found to be affected. Ulcers are formed in the muscular coat. These gradually increase in size eating away the muscular tissue and causing perforations in the walls of the intestines. In one animal which died almost suddenly, I found the stomach full of bots; detached pieces of mucous membrane were found in the liquid contents of the intestines in several places, and severe gastro-enteritis was present. The whole muscular coat was found to be affected and it was of dark colour and the external serous coat was separated from the inner muscular coat by a quantity of foetid dark liquid between the two coats. The abdominal cavity was found to be filled with serous effusion and all the organs were pale and anaemic.

A CASE OF COLIC IN A MARE.

BY

*P. I. Chakko, G. M. V. C., Veterinary Assistant in charge
Veterinary Hospital, Oolacamund.*

On the evening of the 20th October 1922, I was called to attend on a mare which was suffering from severe colic for the past 36 hours. The animal had been treated by another Veterinary Surgeon and was given up as hopeless.

Symptoms:—Walking round in the stall with the head drooping—pulse very weak and thready—temperature 98.2° F—tears running—cold extremities—highly tympanitic—in short, the animal was almost in a state of collapse.

I could not give the owner any hope of the animal's recovery, but informed him that I would make an attempt which might either kill or cure the animal. As the owner also had lost all hopes, he encouraged me to try what I could for the poor dying animal.

Treatment:—(1) First of all, I introduced my oiled hand into the rectum and found it dry, empty and at the same time cold. Gave an enema of half a bucket full of warm soap water. The enema funnel having got out of order, a long rubber tube with the irrigation can attached at one end was introduced and the hand was kept inside the rectum for about 15 minutes to prevent the water from flowing out.

(2) About 12 ounces of Ol. Lini. with 1 ounce of Ol. Turpentine was given as a drench. There was considerable difficulty in giving it since the animal could not keep the head straight up on account of exhaustion.

(3) One grain of Eserine Hydrobrom. was injected subcutaneously.

Within 15 minutes the colicky symptoms got aggravated. The circular movement increased very much and the animal slowly went down, I thought, never to get up again since it did not lie down for the past 12 hours. She rolled on the back very carefully and got up and went down again after about 20 minutes. I waited for one full hour but no dung was passed and there was no perceptible improvement in the general condition of the animal. So I gave again $\frac{1}{2}$ grain more of Eserine subcutaneously. As it was late in the night, I left the animal promising that I would return after an hour. I was reluctant to go back to see the dying or dead animal, but to fulfil my promise, I returned at the appointed time. To my surprise, I could hear at a distance the animal neighing and when I approached she was shaking the head anxious to get some food. She passed a lot of wind and some very hard pieces of dung and her tympany was completely reduced and the colicky symptoms disappeared. I gave her some linseed-tea and bran mash and made her starve for the remaining part of the night. For a few days she had a little impaired appetite which improved naturally and she eventually got as well as ever before.

If I had not tried Eserine, the animal would have died as the owner himself remarked.

* THE PHYSIOLOGY OF SALINE INJECTIONS.

BY

*R. Swaminathan, B. A., G. M. V. C.,
Trichinopoly.*

I propose to bring before you, to day, a subject which has during the past few years come into great prominence. The importance of the necessity of salts for the system has long been recognised but, it is only during the recent times that it is being

* Read before the Second Veterinary graduates' conference, Vellore, on the 29th December 1922.

insistently put into practice. The introduction of the Stomach tube for horses has led to a change in the administration of medicines and, I should think, that it has, in consequence, affected the line of treatment for the ailments of those animals. Administration of solutions of common salt has become more or less a recognised treatment in cases of Debility from unknown causes in horses and other affections and the success which has attended this line of treatment has really been immense. The rationale of the treatment needs therefore some close study and it is with that object that I bring the subject before you to day. To begin with, I should like to state that the term Saline injections is here used in a restricted sense to mean only the administration of solutions of common salt per orem and intravenously.

Sodium chloride can be administered in solutions of different strengths, when the percentage of salt in solution is the same as that in blood, *i. e.*, '9 %'. it is called an Isotonic solution. If above, it is hypertonic and, if below, it is hypotonic solution. The action of each of these solutions differ from each other and their indications also are varied. To understand how exactly these act, a preliminary recapitulation of a few physico-chemical truths, is essential.

The liquids in the body contain many substances which may roughly be divided into Electrolytes and Non-electrolytes. Electrolytes, as their name implies, are good conductors of electricity and are substances which have the property of dissociation or chemically breaking up into simple substances called *ions*. This property of ionisation is a very important one in that it affects the electrical conductivity and the osmotic pressure of fluids in the body. When ionisation is complete the whole of the substance is broken up or dissociated and this increases the particles in solution. This, in turn, actively helps in conducting the current and also in increasing the osmotic pressure, for, it is the degree of ionisation—its completeness or otherwise—and not its nature that modifies the osmotic pressure. By osmosis is meant the mixing or interdiffusion of substances in solution through a semipermeable membrane, and, primarily, has reference to the passing of water molecules. And the term osmotic pressure refers to the pressure exerted by the solvent limiting the stream of water molecules. When substances in solutions of different strengths are kept separate by a semipermeable membrane, such as the endothelial cells of the capillary wall, a flow of fluid is created—osmosis—which results

in the mixing of the 2 fluids. After a time the flow gets stopped, because the pressure on either side of the 2 fluids becomes equal, *i. e.* the osmotic pressure is the same in both. It must be remembered that the flow of fluid is only in one direction, from the one with lower to the one with higher osmotic pressure. "The osmotic pressure of substances like Sodium chloride which are electrolytes is greater than one could expect from the number of molecules present. This is because the molecules in solution are split into their constituent ions and an ion plays the same part as a molecule in questions of osmotic pressure. In dilute solutions of NaCl, ionisation is more complete and as the total number of ions is then nearly double the number of original molecules, the osmotic pressure is nearly double what would have been calculated from the number of molecules." Further, Sodium ions are the most important "in maintaining the osmotic conditions that lead to irritability and contractility of contractile tissues."

Bearing these broad facts in mind, we shall proceed to a consideration of how the above-mentioned 'ionisation' and "osmotic pressure" are utilised in the body.

As we all know, blood is the essential fluid of nourishment for the body. It is brought into 'intimate relationship' with the tissues through the lymph. This lymph, is except for its protein constituents mainly of the same composition as the blood plasma and the two fluids are separated from each other by the semipermeable membrane—the endothelial cells. The manner in which this lymph is formed from the blood is still a disputed point but the points on which most are agreed are that it is in part "physical" and in part 'Vital'. Under the 'physical' factor comes the osmotic phenomena which enables the fluid to pass out from the blood plasma. The 'Vital' refers to the selective activity of the membrane in allowing only certain substances to pass through.

It, now, becomes easy for us to understand the action of the solutions of Sodi. chloride injected into the body. First we will take the administration of the solution per orem. The conditions precedent to its administration are something like this: Owing to faulty metabolism which, in most cases, is incidental to the domestication of animals, the capillary circulation of the absorptive channels becomes defective and consequently the flow of lymph is retarded. To use an expressive term, the part gets "lymph-bound"

and the resultant perivascular pressure affects the absorption and nutrition of the system. The excretory organs also are thrown out of gear. Further, the diet of herbivorous animals contains a large quantity of Potassium salts which during their excretion from the system carry away some Sodium of the blood in the form of "Sodium salt of the acid which was combined with the Potassium." Consequently the blood gets all the more impoverished and, as a result, the system gets weakened and anæmic. If now, the part were to be bathed in a solution of NaCl, changes, depending on the strength of the solution used, take place. If the solution were to be hypertonic one, the increased osmotic pressure consequent on the complete ionisation of the salt "encourages the lymph drainage of the tissues and thereby not only removes the stale lymph and replaces it by fresh and active lymph, but also restores the vascular supply of the tissues by modifying the lymph-bound condition of the parts". The excretory channels also are stimulated by the salt to throw out the morbid materials. The capillaries of the absorptive channels get toned up and the contractile tissues helped on by the Sodium ions contribute to a healthy upbringing of the system. If on the other hand, an isotonic solution were used, practically, no change would take place, because the osmotic pressure of the lymph in the "lymph-bound" part and that of the fluid are the same.

A question which naturally is asked here is why should these hypertonic solutions be found more useful in horses than in cattle. The reasons are obvious. The main channels of absorption are in the small intestines and these are easily approached in the horse. On the other hand, owing to anatomical differences it is not found possible to do so in cattle.

We, now, turn to the question of intravenous injection of saline solutions. Here, greater caution must be taken, because we have to deal not only with the delicate capillary walls but also with the more delicate corpuscles of the blood. The indications for the injection are generally in cases of collapse due to severe hæmorrhage or loss of water from the system as in cases of profuse diarrhœa. In hæmorrhage, the quantity of fluid lost is soon replaced by the infusion of Isotonic solution, which owing to similarity of "molecular concentration and osmotic pressure" does not lead to any change in the blood. But, in administering it, care must be taken to arrest the hæmorrhage in the first instance:

otherwise the fluid will flow out as fast as it is let in. Administration of saline solutions is therefore, contra-indicated during the actual occurrence of hæmorrhage.

In cases of collapse occurring as a result of water from the system, care must be taken in choosing the solution. An isotonic solution will behave exactly like blood and will not therefore prevent the loss of water; whereas, a hypertonic solution by its—higher osmotic pressure prevent the streaming out of the fluid.

In this connection I should like to record the following case which occurred quite recently in a hospital as illustrating the beneficial effects of saline injections.

A Pony suffering from colic was given a 'colic draught' with a dose of purgative; and unfortunately, it brought on superpurgation. To stop this untoward sequel, all sorts of drugs including powerful astringents were used but they were all in vain. A dose of hypertonic solution (4 oz. to 1 gal. of water) was then given through the stomach tube and the purgation quickly ceased, showing thereby that that was the only correct treatment to adopt in such a case. Owing to superpurgation, the capillary bloodvessels become flaccid and get distended with blood; also the muscular walls of the intestines lose their tone. The astringents administered in the first instance could not bring back the lost tone and consequently were useless. On the other hand, the hypertonic solution by its chemical nature soon re-educates the intestine to its proper function; and hence the success of the treatment:

And, now, gentlemen, I have tried, in the foregoing paragraphs, to briefly outline in general the main points which should guide us in undertaking treatment by saline injections. It is left to the general practitioner to study his case before using them. The treatment is simple, the drugs are cheap, the administration is easy and, with proper discretion, I am sure the results will be highly gratifying in all cases it is undertaken.

*NASAL GRANULOMA IN CATTLE.

BY

P. V. Ramaswamy Ayyar, G. M. V. C., Vellore.

Having read the articles in the Madras Veterinary Journal on the above subject, I was waiting for an opportunity to try the intravenous injection of Antimonium Tartaratum on such cases. The opportunity offered itself to me on 10-10-1922 at the Veterinary Hospital, Vellore.

The subject was an aged Alambadi bullock with a good deal of difficulty in breathing, ulcerations inside both nostrils and plenty of thick discharge, and suffering like this for nearly one year. With the knowledge and consent of the owner, the intravenous injection was given with due precautions using an ordinary 20 c. c. hypodermic syringe, with which all Veterinary assistants are provided. As all of you are familiar with the well known symptoms of this disease, I need not take much of your time in describing the same. Therefore I directly proceed to tell you the technique of the operation.

Technique of the operation.

As I told you already I used an ordinary 20 c. c. hypodermic syringe after sterilizing the same. Antimonium Tartaratum 20 grs. was dissolved in 20 c. c. of distilled water boiling the same in a test tube over the spirit lamp flame until the whole quantity of the drug was well dissolved. The seat of injection over the jugular vein was painted with Tr. Iodine. A rope with a knot was tied over the animal's neck to raise the jugular. The whole quantity of the solution was injected directly into the jugular vein and I painted Tr. Iodine over the seat after withdrawing the needle. This was done at 10-30 A. M., on 10th October 1922. By 2 P. M. the same day snoring noise had decreased, the mucous membrane of the nostrils became dry and the discharge had almost stopped and the animal had good relief. The temperature in the evening was 102° F. Animal was taking its feed all right. The next morning the animal could breathe quite freely; the temperature was 102.2° F. There was very slight swelling of the dewlap, but absolutely no swelling at the seat of injection. The third day the temperature was 102.6° F., after which it came down to normal.

* Read before the Second Veterinary graduates' Conference, Vellore, on the 30th December 1922.

the swelling of dewlap which increased from the 12th completely disappeared by the 17th with the usual exercise both in the morning and evening. All these days it took its usual feed. The animal was discharged from the hospital on the 21st completely cured.

After having seen the article in the above Journal for July 1922 we were very much surprised to see the splendid result in this case. Then I wanted to try the same treatment on more cases but subsequently when I went to Vijiyapuram in Kuppam division for the inspection of the hospital, I found to my pleasant surprise 2 cases similarly treated by the veterinary assistant in charge, just the previous day and the owners had been quite satisfied with the treatment and the complete cure effected thereby. The veterinary assistant informed me that he had treated similarly with complete success 14 cases from 17-12-'21 to 24-10-'22 two of which belonged to the Zamindar of Kangundi. I saw the latter animals also which were treated on 17-12-'21 and 24-12-'21 respectively. The Zamindar who maintains this hospital testified to the success of the treatment at the hands of his veterinary officer.

Subsequently after the lapse of a month I happened to meet the owner of the bullock treated in Vellore hospital and learnt from him that the bullock showed no longer any trace of the disease. My object in bringing this subject before you is to give this treatment a further trial as it has proved as if this drug is a specific for nasal granuloma for all the above cases whatever the causative agent of the disease is.

In fine I request the members of the profession to give this drug a fair trial in this disease which has been playing havoc among cattle in many parts of this presidency.

EVERSION OF THE UTERUS AND ITS TREATMENT.

BY

*V. Venkataraman, G.M.V.C., Touring Veterinary Assistant,
Vizagapatam.*

Referring to some of the articles on the above subject in this Journal, I desire to put forth before the members of the profession, my experience in witnessing and attending to some of the cases in the Veterinary Hospital, Vizagapatam.

A Buffalo in calf, aged 4 years, was brought to the hospital at 11 a.m. with eversion of the uterus, with the usual history that the ryots and the ever skilful country Veterinary doctor—the shepherd—tried their best to shove it inside with no success. The uterus was hanging down with the calf inside. The membranes were lacerated and ulcerated in some places. An enema was given and the rectum evacuated. The animal was kept under chloroform. The uterus was washed with warm potassium per manganate lotion, smeared with carbolic oil and then shoved in with great difficulty. Then 2 splints 6 inches long, were applied on both sides of the lips of the vagina and sutures were put on. A dose of sedative medicine consisting of Chloral Hydras was given. Two hours after, the animal recovered from the secondary stage of Anaesthesia and the animal was kept in the hospital. There was very little straining. Next morning the sutures were removed and the uterus douched well with Pot. Permanganate lotion and margosa oil was applied externally.

The second case was a cow aged 3 years. This was admitted for the eversion of the uterus with retention of placenta. The placenta was removed, the uterus douched with antiseptic lotion and the same treatment, as in case 1, was followed with the same success.

In recording these cases I should like to inform readers that the success in healing all these cases may be due to reducing the eversion under Anaesthesia after an enema. By so doing it is easy for the practitioner to reduce the eversion as the animal is quiet and the muscles are relaxed. The animal lies quietly under secondary Anaesthesia for another 1 or 2 hours when straining is not probable, and the success is also due to the administration of sedatives and the vulval quill sutures. If ordinary sutures are put on the lips of the vagina, as one of the writers observed, they are likely to be torn during straining.

I will be thankful to readers if they will give their experience through the medium of this Journal.

CHRONIC LUXATION OF PATELLA IN BOVINES.

BY

*M. Lakshmana Raju. G.M.V.C., Touring Veterinary Assistant,
Jaggayyapet.*

Subject. A two year old, small country-bred bullock. The animal had chronic luxation of the patella for the last one year as the owner said. I was called on to attend to this case during the 2nd

week of November 1921 in a village near Arakee while I was working as acting Touring Veterinary Assistant, Ghats' Agency.

Symptoms. The animal was found to be distinctly lame on the right hind with a characteristic rotatory movement and an audible clicking sound at the stifle joint. On manipulation I found the patella being continuously fixed on the internal side of the trochlea and the straight ligaments being kept very tense. All the joints of the limb were kept extended, the limb itself being directed backwards and could not be advanced. I at once diagnosed it to be a case of chronic luxation of patella.

Treatment. A straw bed having been prepared the animal was cast and secured with the affected limb upwards and free, the usual precautions being however taken. I then manipulated the stifle joint and searched for the interpatellar space which can be made out without much difficulty. A 20 C.C. Hypodermic syringe and 2 inoculation needles were sterilized for half an hour in 5 per cent. carbolic lotion and were kept ready beforehand. The seat of operation being disinfected and painted with Tincture Iodine, 5 C.C. of Tincture Iodine was taken in the syringe and slowly injected into the interpatellar space, the syringe being completely airtight. Great precautionary measures were however taken so as not to allow the needle to touch the bone or pierce the surrounding structures and cause Synovitis. Then the seat of operation was dressed with carbolic oil and the animal kept free. On the next day a small swelling at the part was however observed with a temperature of 103° F. Fomentation was applied.

Third day. The swelling increased, the temperature remaining the same. Fomentation was continued.

Fourth day. The swelling was considerably reduced and the temperature was normal.

Fifth day. The animal was quite all right performing normal movement.

Note.—This article is written with a view to find out through the medium of this Journal whether any of the members have tried this treatment previously and, if so, their results. I have treated successfully another bullock with the same treatment at Peddapuram of Nandigama Division on 20th December 1922.

BOVINE EMASCULATION.

BY

*K. S. Prakasa Rao, G. M. V. C., Touring Veterinary Assistant.**Vizagapalam.*

A rich ryot of Anakapalle Taluk, Vizagapatam District complained that some of his animals castrated became useless for work. I told him that he was at liberty to ask for other methods of castration when he was not satisfied with a particular method which is held to be good by a majority. He therefore brought one bull nine months old and he wanted me to operate on the animal if I can assure him that the animal would grow better than the animal subjected to a process of mulling. He was also prepared not to raise any objection if the testicles were left in tact. The bull was thereupon thrown down and secured in the ordinary way with all antiseptic means at hand, a careful incision was made on the skin at the bottom of the scrotal sac on either side, care being taken not to cut the testicle proper. After the testicles were exposed, catgut ligatures were tied on each organ, at both the extremities of the body of the epididymis and at two places two inches apart on vas deferans. The body of the epididymis and the part of vas deferans between the ligatures were removed on both the sides. The object of ligaturing was chiefly to prevent the minute capillary bleeding. I extirpated the body of the epididymis too, although the removal of a section of vas deferans alone can prevent the communication of spermatic fluid to the urethra, because my object was to prevent even remote chances of collateral communication. The testicles were afterwards introduced into their respective membranes and finally pushed into their homes. The edges of the wounds were closed by a continuous suture and Tr. Iodine was painted over the part. There was slight swelling next day when the wound healed by first intention.

While I was in the village a cow belonging to the same ryot was on heat and the bull in question got loose and went to the cow. I observed the bull mounting the cow several times but to no purpose.

On seeing the operation another ryot brought another bull which was similarly operated.

The results of the operation will be recorded whenever opportunities occur and communicated to the profession through the medium of this Journal.

Can any one say if collateral communication will occur so as to permit the passage of semen into the urethra. ?

ULCERATIVE KERATITIS IN CATTLE.

BY

L. S. Parameswara Aiyar, G.M.V.C., Ag., Glanders Inspector.

In his article on "Ulcerative Keratitis" caused by "Thelazia rhodesi" in the 14th issue of our Journal, Mr. C. Venkataratnam Chettiar, G.M.V.C., Chief Superintendent of Cattle Depôts, Corporation of Madras, says that the disease is probably caused by means of flies and because I was also of opinion that the disease "Epizootic Ulcerative Keratitis" described by me in the 13th issue of our Journal was spread by means of flies, he concludes that I might have also been dealing with an outbreak caused by the same agent "Thelazia rhodesi". But I entirely differ from him. Because I had very carefully examined not only each and every eye of affected animals, but also those of healthy ones placed side by side along with them with a view to find out the actual cause of the lesions. In not a single case I found any worm referred to by Mr. Chettiar and with all the care I have taken in the examination of the affected eyes it is impossible for me to have failed to note the presence of the parasites which measure from $\frac{1}{2}$ " to $\frac{3}{4}$ " in length, even in a single case. The theory put forward by Mr. Chettiar that the parasites are caused by means of flies is not very convincing as it would be impossible for the flies to carry the adult parasite whose natural habitat is the excretory duct of the Lachrymal gland.

Though so far the life history of the parasite has not been clearly worked out yet it is certain that infection into the animal body of these parasites, must have been through either as larva or as eggs which may gain entrance into the body and may have worked its way into the lachrymal gland either in a fully developed state or to be developed there to a mature worm.

It would have been better if Mr. Chettiar has stated in his article whether he found parasites in each and every case he saw and

if otherwise the proportion of the presence of parasites to the cases affected so that we might know definitely whether "*Thelazia rhodesi*" was the primary cause of the outbreak.

Anyhow I am sure that the cause of the outbreak with which I was dealing, was entirely different from that stated by Mr. Chettiar and in support of my view I may invite the attention of the readers of this Journal to the two articles on "Contagious or Epizootic Keratitis of Bovines" by Messrs. A. Daille and S. L. Stewart, extracted in the *Veterinary Review* Vol. IV. No. 3, August 1920 (Pages 269 and 270), whose descriptions of the disease are nearly the same as those described by me.

The extracts of articles, as appeared in the *Veterinary Review*, are reproduced below.

"Daille Describes, a contagious bovine keratitis which is at present met with in nearly every state in North America and also exists in Germany, Russia and Central Europe. He defines it as a transmissible disease which appears to be peculiar to bovines, and characterised by the development of an acute keratitis with a tendency to ulceration. The period of incubation is stated to be about 10 days and the malady occurs both in acute and subacute forms. In the acute type the onset is sudden and it is marked by a more or less intense seromucous discharge from the eyes, accompanied by photophobia. In from 24 to 48 hours keratitis develops. The cornea becomes centrally opaque and the opacity extends in a centrifugal manner; at the same time an active congestion appears at the corneal border. In very acute cases the opacity may cover the entire cornea and there may be evidence of an increase in intra-ocular tension. When ulceration occurs Descemet's membrane may herniate through the lesion and the discharge becomes muco-purulent. The expression is dolorous, the head is extended and held low and the eye-lids are semi-closed. The condition is usually confined to one eye.

Symptoms of slight fever may be present at the outset but they usually pass off in a few days. The cause of the disease depends upon the intensity of the symptoms and the possibility of the occurrence of complications in the form of corneal perforation, staphyloma, synechia, luxation of the lens, uveitis, cataract etc.

In the subacute type of the condition the onset is not so marked. Conjunctivitis is the dominant symptom. Keratitis appears in the

form of greyish opacity that may disappear in a few hours or may be followed by superficial ulceration.

Little is known of the etiology of the disease. It is seasonal in incidence; most cases occur in summer or autumn. It is undoubtedly contagious; the introduction of an affected animal into a clean herd may bring about a general infection though certain individuals seem to possess a natural immunity.

It will be observed that the symptoms resemble those of sporadic keratitis and the diagnosis can only be established where a number of animals are affected at one time; that is, when the infectious nature of the malady is evident.

Treatment, as in other forms of keratitis, consists in the application of sedative and antiseptic collyria. Preventive measures are those for contagious diseases generally. Newly purchased animals are placed in quarantine for a period of from 8 to 15 days before being admitted into clean herds."

2. Stewart's description of the symptomatology and morbid anatomy of infectious keratitis is essentially the same as that given by Daille above. He states that animals that have passed through an attack of the disease acquire a considerable degree of immunity, which, however, is not permanent and may "break down within a few weeks or months". Age seems to have no bearing on the susceptibility to the disease, as old and young seem to be alike susceptible.

The author partly explains the increased intra-ocular tension by supposing that the corneo-scleral canal (canal of Schlemm) is occluded as the result of contraction of the pupil (?) and that this leads to the prevention of the outflow of the lymph from the aqueous chamber of the eyeballs. This view induces him, in treatment, to the use of mydriatics such as atropin sulphate, which, combined with antiseptics is used as a collyrium."

[On the other hand, the importance of *Thelazia* as a cause of Ulcerative Keratitis in cattle in both Africa and India is referred to by J. A. Griffiths in Vol. 78, No. 12 of the *Veterinary Journal*—Ed.].

EXTRACTS

THE INCREASE AND IMPROVEMENT OF INDIAN CATTLE.

BY

Kalyan C. Srinivasan, M.A., F.C.S., M.S.C.I., (London.)
(Continued from the previous issue.)

Problems General and Special.

29. Meanwhile, our attention may be turned to the chief aim of cattle breeding, which is no more than the increase and improvement of cattle. The problems involved in the Science of Art of cattle breeding in India are two-fold in nature—the general and the special. The former are best studied by a careful consideration of the factors that bring about their decrease and deterioration.

1. Famines.

30. Famines, which have been of late very frequent in India may be taken to be the most serious among the factors affecting cattle breeding in our country. The famines of India are, as is well known, caused by scarcity of rain-fall, which latter brings in its train scarcity of pasturage and absence of straw. The underfed underclothed agriculturist often starves himself to feed his cattle but there is the usual limit to human patience and sacrifice and men and cattle die in numbers. The survivors are so thoroughly run down and emaciated that a succeeding spell of plenty brings them back no more to their original potential.

2. Lack of Fodder supplies.

31. Curious as it may seem, times of exceeding plenty consequent on very satisfactory monsoons have been known to affect cattle breeding adversely. In the fertile deltas of the great rivers in both Northern and Southern India the rapacity or poverty of the agriculturist has forced him to win all available soil to intensive cultivation, so much so, that it is unhappily a very common sight to see villages so closely surrounded with rank vegetation awaiting the season of harvest, that there is not a squarefoot of space on which his cattle may browse. This is just the time when stocks of the last year's straw are almost exhausted and the cattle, especially

the bullocks, are put to the most strenuous duties. Unintentional neglect completes the tale and if there is no great increase in cattle mortality, there is considerable decrease in cattle vitality.

3. Insanitary Housing.

32. The rains set in and the cattle lie huddled together in numbers in ill-ventilated unpaved and very often uncleaned sheds, that protect the poor dumb creatures at best, as well as uncovered sieves. Their droppings cannot be dried into fuel-cake as usual and there is no very handy place where they can be stored as manure. They consequently accumulate to be cleared when a succession of sun-shiny days allows the cattle to be moved out with convenience. In some cases, the cattle are stalled in open pens throughout the year, day and night, in wind and sun and rain, (as in the Nilgirs) with what consequences one can easily imagine.

33. Circumstances are thus ideal for the spread of disease and the more common epidemics do not fail to reap a rich harvest of victims. Floor-space is limited, segregation is next to impossible and the poor peasant would rather skin himself alive than give the quietus to the suffering beast.

4. Increase of Forest dues.

34. The evils above referred to have not only been brought about by the widening margin of cultivation, the consequent breaking up of grazing grounds, the insanitary hoarding together of underfed and over worked cattle and the unmeaning kindness of the illiterate peasant but, also in many cases by the increase of forest dues and the slaughter and export of cattle. New fangled ideas of forest conservancy and protection, justifiable as they are from many points of view still work a hardship as far as cattle breeding is concerned and that in two ways. Free forest pasturage is either denied or rendered costly and in both cases the cows miss the chance, which always exists, of being crossed by the sturdy bulls which fugitives perhaps from captivity, roam fancy free in the wooded jungles. This double loss has recently begun, it appears, to affect famous Nellore breed most adversely.

5. Slaughter.

35. The slaughter of cattle has increased in recent years, as hand in hand with poverty luxury stalked into the country

and whetted the appetites of the poor and rich alike for more and more luscious food. Western culture and civilisation have brought in their train a certain indifference towards ancient customs sectarian and sentimental and what with the increase of population, the growth of towns, the frequency of travel over land and sea, more of these unfortunate creatures taste the keenness of the butchers' knife than their progenitors. And it is doubly unfortunate that the factors that have made butchers of Chicago, the greatest cattle-breeders of the world are here totally absent, as it is not fattened stall-fed ox or bull that is usually led into the slaughter-house but the emaciated apology for one often suspected incapacity to survive an unfavourable season.

6. *Export.*

36. A more debatable cause for the diminution and deterioration of cattle in India is the export of select breeds to foreign countries for breeding and other purposes. It is argued on the one hand that such export will stimulate the raising and rearing of the more valuable breeds of cattle with great benefit to the country both as regards the industries of agriculture and cattle-breeding while on the other, there is a vehement protest that the net result is a rapid depletion of valuable live-stock on the continued existence of which depends to a large extent the future of the two industries mentioned above. Under the existing economic conditions of the country, comprehending as it does an impecunious and ill-educated peasantry and the absence of a regular class of professional cattle breeders, the less optimistic of the two views propounded above appears to be the more accurate.

37. The general causes that have affected the question of cattle breeding in India have thus been discussed in their broad outlines. It may be noticed that these operate more or less insidiously and the roots of the evils worked are hidden deep in issues either seasonal or economic. In considering the question of cattle breeding in India as an industry, therefore, attention must first be directed towards the eradication of these fundamental evils. The ground has to be cleared before the building is begun.

7. *The Ryot.*

38. The corner stone of the whole edifice of Indian agriculture and its sister industries is the ryot. We have noticed

how his ignorance and impecuniosity coupled with the smallness of his many scattered holdings operate most unfavourably against improvement and on the vital problems of his resuscitation depends without exaggeration the future of our motherland. Reformation to be efficient and speedy has in the peculiar circumstances of our country to come from without. A popular form of government such as we now have under the reforms, has within it the potentialities to produce compulsory legislation enforcing primary education, village sanitation, agricultural co-operation, animal inoculation and the few other safeguards which when applied with vigour and the co-operation of the people of the land would eventually result in a transformation almost divine in its nature. But alas! the fates of Kingdoms are in the laps of Gods and political visionaries inspired and uninspired are fast dragging our devoted country to her doom.

Remedies.

I. Demonstration.

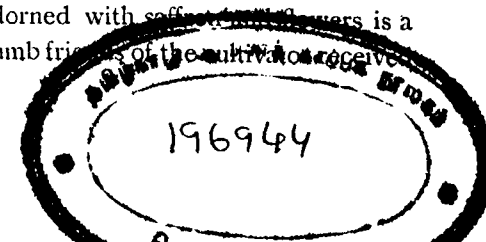
39. It is high time however that the rush is stopped and the work of construction begun. The ryot has first to be educated not necessarily in the three R's, but in the elements of sanitation and cattle raising. The feat is difficult and to succeed must be entrusted only to the hands of picked men who could unobtrusively and without show of superior knowledge break the shell of conservatism which encompasses the Indian peasant and demonstrate before his eyes the paths of improvement which modern science has opened out to the civilised world. Cattle fairs and shows held in various seasons of the year contribute a great deal towards such an education; but the results thereof are temporary in their nature and fail to evoke more than an evanescent interest.

II. Individual example.

III. Revival of ancient customs.

40. The example set by local magnates would be more effective. To the agrarian revolution in England it is such men that contributed. The social institutions of the Hindus lend themselves admirably to such a reformation. The breeding bulls maintained by the local temple out of the common purse is an ancient Hindu institution now much neglected. The Pongal festival when all the cattle are washed and cleaned and are led out adorned with garlands and flowers is a relic of an age when these poor dumb friends of the soil were

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the respect and attention that is their due. The growth of nationalistic feeling in the country admits of the revival of these ancient institutions not only in all their original circumstance but as heightened by the wisdom of recent times. And nothing is more gratifying to the poor but proud cultivator than the recognition by the powers that be that the practices of his forefathers were not only sanctified by age and memory, but were the result of ancient Hindu culture. I advocate in the first instance the encouragement of the Chief men in each village in the strict observance of their ancient duties towards their cattle, by the institution of prizes and rewards, the award of temporary titles and offices, which may cost nothing to the Government, but will enable the Veterinary or Agricultural officer to move in close and friendly relations with the people, teaching and taught and will eventually pave the way for the subtle introduction of pressing reforms.

IV. *Creation and maintenance of Fodder Reserves.*

41. Perhaps the most important among these is the creation and the maintenance of fodder reserves. The encroachment of cultivation on building and pastureland in the deltaic portions of the country has been so serious as not only to endanger the future of cattle-breeding but the health of man himself. The maintenance of at least a minimum area of dry land round about the village is a matter for compulsory legislation; and how this could be done without affecting vested interests is a serious problem. But it must be done in the interests of health and it is for the vaunted representatives of the people to do it without fear or favour. The creation of fodder reserves in the uplands is not a matter of such great difficulty; but it goes hand in hand with problems of forest conservancy. More than once this question has come on the legislative anvil and real finance is bound in the near future, to dictate a more humane and sympathetic policy.

V. *Cattle Insurance.*

42. Co-operative Cattle insurance is another measure which must find its way into the economic fabric of the village. One would rather prefer compulsory cattle insurance on a basis whether co-operative or no. The increasing popularity of co-operative cattle-insurance societies in Burma would guide us into adopting the less heroic of the two measures especially as increasing prices of the common cattle ensure the growing success of the venture. Efforts in this direction must not be deterred by the initial need for government spoon-feeding which will be necessary to break the ice and will be certainly assisted by simplifying the terms of the agricultural and

other loans now given by Government so as to give the preference to those who have adopted some type of insurance or other. Preferential treatment of Government in the matter of monetary assistance or rebates to the ryots who have adopted the scheme of cattle insurance will certainly give an impetus which nothing else can.

VI. *Protective Inoculation.*

43. Slowly, but none the less surely, will come in the wake of cattle insurance, cooperative or otherwise, compulsory protective inoculation of cattle against epidemics and diseases, involving as it does the sanitary upkeep of cattle sheds and pens. Under the present representative and elective system of local self-government, the elected head of the district will in time be one who could carry the changes contemplated above to completion with the vim and vigour that will ensure success.

Special Problems.

44. The ground thus prepared, the building has now to be raised. We have so far concerned ourselves only with measures of protection. We shall now turn our attention to a constructive policy and it is best at this stage to halt and recapitulate. We have in India nearly 150 million heads of cattle in various stages of growth and development, belonging to various breeds, mongrel and pure and distributed through-out the land in a manner that is not susceptible of careful analysis. We are aware of the existence of at least half a dozen excellent breeds, which through long ages of time have become indigenous to the soil and which neglect and ignorance have failed to destroy. Experience has proved in no uncertain terms that the path of progress lies in the evolution of new breeds from those already existing in the land and not in the import of fresh blood into the country from foreign parts. Indeed, we have sufficient variety from which to pick and choose and make experiments without number. But in doing this we have to recognise at the start that the primary consideration is the production of healthy breeds of hardy cattle, capable of withstanding the rough treatment of the Indian ryot either dragging the plough through the swampy fields of rice and corn or trudging with heavy loads along country roads and paths full of many a rut and hole: and of good milking cows which with minimum attention and rations will multiply rapidly and afford the maximum amount of milk and butter, and all of these immune as far as possible from the depredations of the commoner epidemics. The production of lusty cattle, with big carcasses, special qualities of mind and body

and of splendid milking powers is an important object to be kept in view, it is true, but one essentially subsidiary to the first.

45. For the successful realisation of these objects reform will have to shape itself at least under three distinct heads, Records, Research and Administration.

1. *Records.*

46. We have already noticed how the live-stock statistics of British India are not quite trustworthy and how for these to be useful, the classification to be adopted should clearly differentiate between milch, draught and breeding cattle, young stock and varying breeds. The record section will have entrusted to it the duty of compiling these statistics without which, intelligent research and economic administration would be impossible. Authentic records will have to be maintained of the imports and exports of cattle (detailing the species and breeds affected and their destinations) their birth and death rates, the incidence of famine and disease on cattle mortality and vitality, and the numbers and nature of cattle that are butchered for human consumption year to year. Careful attention has also to be paid to the collection of the results of experiments made by the government and private agencies both in and outside India and it may be to active propaganda in the dissemination throughout the country of valuable information thus obtained.

2. *Research.*

47. Research, to be useful must be fully informed not only of past achievements but past failures and the Records Section will enable this to be done. To research must be entrusted the scientific problems which face the cattle-breeding industry in India, such as the investigation of functional modifications due to specialisation, pathological affections, diseases and immunity therefrom, and finally the working out of the results of the forces of heredity and variation. On the success of this section will depend not only the future of agriculture but also the future of the cattle breeding industry, and that of the dairy industry. The scientific feeding of animals, the breeding of bulls and milch cattle the evolution of new breeds with new characteristics come in the train of such research, which because of its very nature will have to be centralised in experimental breeding-farms and stations under expert supervision. Research

will have to work out the economics of stall-feeding such as the building value of various cattle foods, not only on the basis of Kellner's values, protein content and starch figures but also with reference to the influence of environment and psychology on the animal digestive system. It is a spacious field for work in which, the chemist and the biologist may roam at large in quest of the hidden treasures of nature with hopes that will stand a chance of fulfilment.

3. *Administration.*

48. To carry out the collection of suitable information and to direct the paths of research in useful channels a powerful administration must be actively at work setting the complicated machinery into full motion ahead, lubricating its various parts with unceasing care and attention and withal maintaining a watchful control over every start and quiver. How this should be shaped it is needless here to point out, but perhaps the combined genius of the Agricultural, Veterinary and Co-operative Departments may suggest a measure which would fully meet the case.

Conclusion.

49. We have thus made a careful survey in broad essentials of the whole situation. We have noticed how closely wedded together are the industries of agriculture and cattle raising in India. We have studied the different breeds of cattle noted for their many remarkable qualities, that still continue to exist in this country. We have discussed the general measures that have to be taken to prevent deterioration and decay and we have suggested means whereby a constructive policy could be evolved that could place, ultimately it may be the industry of cattle breeding, with all that hangs on it, on a sure and remunerative footing. The problem is easy of solution and is not difficult of achievement. One could only pray that the volume of misguided effort and wasted energy that finds a vent in wrong directions may be turned into useful channels such as the above: for, the most powerful of governments democratic or other can achieve nothing without the hearty and the sincere co-operation of the people.

ASSOCIATION REPORTS.

The Second Veterinary graduate's conference was held at Vellore on the 29th and 30th December 1922. The conference was opened by M. R. Ry. Vellingiri Gounder Avergal, M.L.C. Mirasdar and Geo. T. De'Silva, Esq., Professor of Surgery, Madras Veterinary College, presided over the deliberations. Several professional papers were read, two of which are reproduced in this issue.

The Madras Veterinary College Medical Association has been active during the past 2 months. In November they held two meetings in which two papers were read on "Veterinary Profession and milk supply" and "Lameness" by Mr. Dandayudapani of class B, and Mr. J. T. Austin of class C, respectively. In December they had a meeting in which a paper on "Handling of animals" was read by Mr. Venkata Sastri of class A. The students attended the meetings and had a lively discussion.

DEPARTMENTAL NOTES AND NEWS.

1. Another Veterinary Graduate of 1922 has been given an appointment in the department consequent on the death of Veterinary Assistant K. S. Sitaraman.

2. The following Veterinary Inspectors who attended the Refresher Course held at the Madras Veterinary College during 1922, came out successful in the examination.

1. G. Krishnaswami Mudaliyar.
2. C. Suryanarayanamurthi.
3. A. L. N. Somayajulu Pantulu.
4. K. S. Natesa Ayyar.
5. T. S. Alagappa Pillai.

3. Arrangements are being made at once for opening six new touring billets with headquarters at Sattur, Dindigal, Karur, Kumbakonam, Tiruvannamalai and Yellamanchili.

CORRESPONDENCE.

(The Editor does not guarantee to publish all or any letters received and those sent under a non-de-plume will not be printed unless the writer's name is sent separately but not for publication, nor does he hold himself responsible for the views expressed by correspondents).

To THE EDITOR,
The Madras Veterinary Journal, Madras.

SIR,

Regarding the experience of Veterinary Assistant A. S. Mahadeva Ayyar in the treatment of cases of Nasal Granuloma with intravenous injections of Antimony tartaratum I have to give the following hints for his consideration.

1. When he observed the weakness in the animal after first injection, he ought to have given sufficient interval at least one week before the second injection.

2. At any cost the 3rd injection ought not to have been done before a fortnight after the second injection and if he waited sufficiently after the first two injections there will be perceptible improvement in breathing and I think there may not even be any necessity for the 3rd injection. I have observed in some cases that improvement is gradual and the drug shows its effect even after 15 days.

3. To avoid air bubble getting into the vein, the liquid in the syringe should not be completely evacuated and one or two C.C. of liquid may be left in the syringe as a precautionary method.

I gained the above experience after injecting 25 animals with Antimonium tartrate from 15 to 30 grain doses, according to the size of the animal, and except in two cases there was no necessity for a third injection. I have not yet given the 3rd injection even in these two cases as I observe that there is still copious mucous discharge from the nostrils, and hence I intend waiting till the discharge stops entirely. In some cases we have to syringe nostrils with any lotions such as weak copper sulphate lotion or potash permanganate lotion as the discharge is profuse and the animal refuses to clean it by the tongue. In all the 25 animals I have not observed any grating symptoms after the injection except in one bullock which, I think, owing to the initial dose of 30 grains, showed difficulty in breathing, but it was all right the next day. The peculiarity that I observed

is that in all the cases the temperature did not rise above 102 degrees and the animals were taking their feed all right.

After the above experience, I think the drug may be safely administered in cases of nasal granuloma freely, provided we inform the owner about the accident likely to happen, depending upon the nature of the animal as we are aware of the action of the drug is injected intravenously in cases of Blackwater in human patients.

I remain,

Sir,

Yours faithfully,

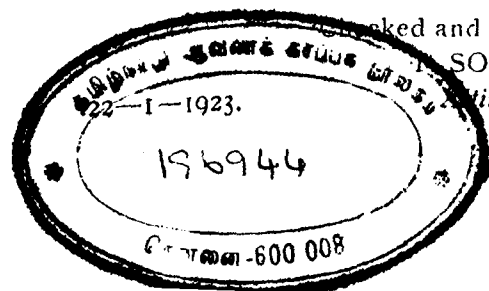
VIJILAPURAM, KUPPAM. } M. S. RAMACHANDRA AYYAR,

Dated, 5-12-1922. } *Veterinary Assistant i/c*
Veterinary Hospital.

'Notes by S. R.'—Not published as the communication is too long.—*Ed.*

Statement of receipts and charges for the year 1922.

<i>Receipts.—</i>	Rs.	A.	P.
Balance for the year 1920-21 vide the statement of receipts and charges published in No. 10 of the Journal	257	9	3
Receipts by subscriptions	507	2	0
Excess subscriptions received for which credit has to be given next year	38	14	0
Receipts by advertisements	24	0	0
Receipts due by subscriptions	81	2	0
Receipts due by advertisements	41	8	0
	<u>950</u>	<u>3</u>	<u>3</u>
<i>Expenditure.—</i>			
Printing charges including cost of paper	480	6	0
Stamps	98	14	3
Remuneration to clerks... ..	120	0	0
Auditing fees	15	0	0
	<u>714</u>	<u>4</u>	<u>3</u>
Balance	<u>235</u>	<u>15</u>	<u>0</u>



checked and found correct.

SOUNDARARAJA AYYANGAR,

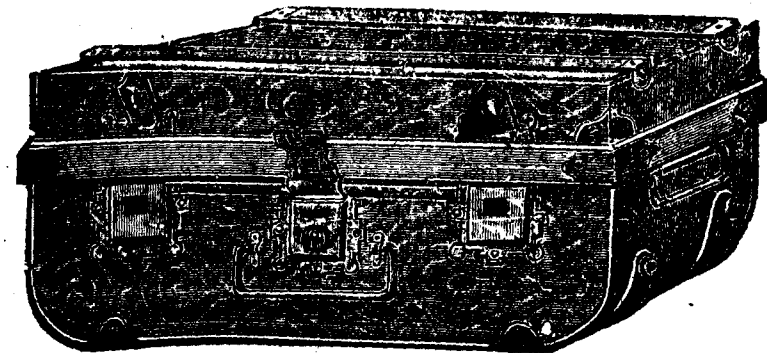
Accounting Accountant, C. V. D. Madras.

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PRINTED AT THE N. M. S. PRESS, VEPERY, MADRAS.