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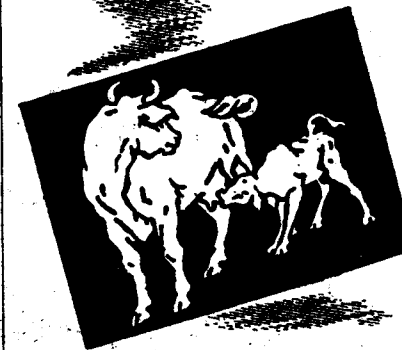
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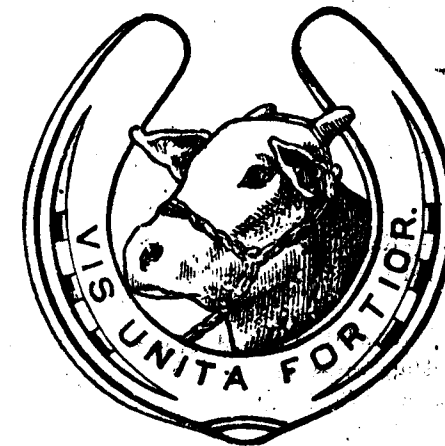
Vol. XXIV

November 1947

No. 3

THE **INDIAN VETERINARY JOURNAL**

(The Journal of the All-India Veterinary Association)



Editor:

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

Veterinary Surgeon, Madras.

Office: 26, Wallajah Road, Mount Road, Madras 2, (S. India)

NOTICE

The Indian Veterinary Journal

A Bi-monthly Record of Veterinary Medicine and Surgery
Devoted to the Cause of Veterinary Profession.

PUBLISHED FOR THE ALL-INDIA VETERINARY ASSOCIATION

EDITOR :

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

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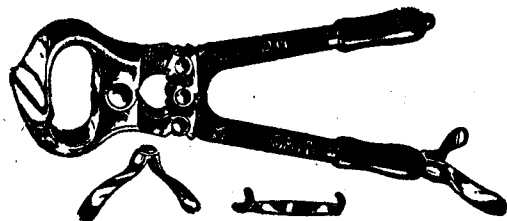
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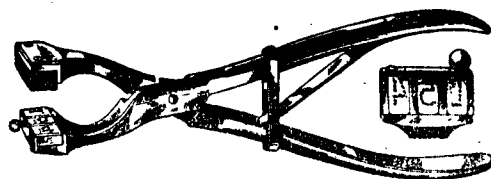
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THE Indian Veterinary Journal

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Vol. XXIV

NOVEMBER, 1947

No. 3

General Articles

OXALIC ACID AS A GENERAL HEMOSTATIC*

BY

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The control of hemorrhage in surgery is of prime consideration. An operation which is practically bloodless is, without question, very impressive; indeed, it is preferable to one with much loss of blood. The value of an efficient hemostatic in hemorrhages due to accidents and in those accompanying certain diseases is too apparent to be stated.

The search for effective agents to control bleeding has, in recent years, actively engaged the attention of research workers. Many agents have been tried with this end in view. Just quite recently discovered is oxalic acid, which has been claimed to be a potent general hemostatic.

Steinberg (6), on December 6, 1938, read before the Medical Society of Roselle and Roselle Park, New Jersey, his preliminary observations on the relationship of the oxalic acid content of the blood and coagulation time. Milliken (4) in 1939 published a clinical report on the use of oxalic acid in the form of koagamin in transurethral prostatic resection with very encouraging indorsement of the drug.

Before the annual meeting of the American Physiological Society held in Toronto, Canada, on April 29, 1939, Steinberg and Brown (7) announced further experimental data on the use of oxalic acid in the control of bleeding. It has been reported that based on those observations, thousands of patients suffering from various types of hemorrhages were

*The data herein presented were gathered before the outbreak of the Greater East Asia War.

Read before the Monthly Faculty Seminar of the College of Veterinary Science, University of the Philippines, March 17, 1944.

treated with very gratifying results. Later, Schumann (5), and Steinberg, Segal and Parris (8) reported additional supporting observations concerning the value of oxalic acid in hemostasis.

The extension to veterinary practice of the use of oxalic acid to shorten the blood coagulation time was first attempted by Miller and Davies (3), who conducted observations on 3 dogs and 1 mule. Later, Davies (1) used this drug in the treatment of internal hemorrhage in 6 dogs hit by cars; as preliminary to surgical removal of mammary tumors in 4 bitches; and in a dog requiring amputation of the right fore leg at the shoulder.

It is quite very apparent that, so far, studies on the use of oxalic acid as hemostatic in veterinary therapeutics have been made practically on dogs only and the data are rather very meagre.

The object of the present study is to contribute observations to the little veterinary information available on this matter.

MATERIALS AND METHODS

The observations herein presented were made on 20 apparently healthy native horses ranging from 2-1/2 to 9 years of age. Of these, 12 were males and 8 were females. In addition, 5 clinical cases—4 horses and 1 dog—were treated with oxalic acid solution to stop bleeding after surgical operations.

In determining the approximate clotting time of the blood, the drop method as suggested by Kolmer and Boerner (2) was used. The blood for examination was taken from a puncture of the posterior auricular vein, after the preliminary cleansing and disinfection of the part.

A sterile aqueous solution containing 1/4 grain of chemically pure oxalic acid (Baker's Analyzed) per mil was used in this study. This was administered slowly and carefully per jugular vein in doses of from 30 to 40 cc., depending on the size of the animal, with only one dose given to each. The coagulation time of the blood of each animal was taken immediately before the administration of the solution, to have a basic working guide, then every 15 minutes up to 2 hours, then at 2-1/2, 3, 4 and 6 hours, after the injection. Once the post-injection clotting time had approximated or equalled that of the pre-injection, no further determination was made.

RESULTS AND DISCUSSION

The results obtained in this study are given in the accompanying Table. It will be seen here that the pre-injection coagulation time ranged from 8 to 14 minutes with an average of 10 minutes and 33 seconds (10.55 minutes). Fifteen minutes after the administration of oxalic acid solution per jugular vein, the clotting time of the blood suddenly dropped to less than 1 minute; it ranged from 24 to 59 seconds with an average of 40.25 seconds. Thereafter, the coagulation time progressively and continuously

rose up in 4 to 6 hours to the pre-treatment level, except in 3 cases. In these animals (Nos. 10, 14 and 19), the clotting time showed a drop again 1 hour after the injection, then continued to rise as the rest of the cases. This observation has a parallel in the 1 mule experimented on by Mille and Davies (3).

Considering the averages, the results of the present study may be graphically illustrated in the accompanying Chart.

The findings herein reported fully support the view that oxalic acid, in the doses used, is an efficient general hemostatic. It is indeed quite surprising that this drug, a local irritant, a corrosive poison frequently used for suicidal purposes, and long regarded as anticoagulant, can effectively shorten the blood coagulation time.

Among the animals studied, the writer failed to observe any ill effect. The observations on thousands of human subjects (4, 5, 7, 8) and on dogs (1, 3) indicate that the drug, in proper concentrations and administered through the proper channel, is practically harmless.

According to Davies (1), some sort of incompatibility probably occurs when this drug is used jointly with certain general anesthetics. He suggested that oxalic acid be used sparingly with general anesthetics until the precise reaction between them is definitely known, because he noted that in a few cases given nembutal and ether for general anesthesia, oxalic acid induced an alarming cyanosis. The patients, however, recovered uneventfully. While this undesirable reaction may not be produced with other general anesthetics, the writer believes that this suggestion is worthwhile remembering in doing surgery when oxalic acid is to be used in subjects to be placed under general anesthesia, to avoid possible embarrassment.

"The exact action of oxalic acid in the physiological process of blood clotting is still problematical, but it would seem that it acts as a catalyzer and adds to the function of calcium, platelets, and tissue juices in the formation of thrombin" (5).

Steinberg and Brown (7) and Steinberg, Segal and Parris (8) claimed that a correlative trend exists between the coagulation time and the oxalic acid level of the blood. They observed that a decrease in the clotting time is associated with a rise in the blood oxalic acid, whereas, in cases with tendency to prolonged bleeding, the oxalic acid level of the blood tended to be decreased. The latter investigators further observed that in cases treated with oxalic acid the increase in the oxalic acid of the blood was not due to the actual introduction of the drug, for the resultant oxalic acid level of the blood was greater than the original value plus the amount introduced. It has been suggested (5) that the introduction into the circulation of small amounts of oxalic acid steps up the formation of this substance already normally present in the body.

It has been the writer's observation that the blood clot on punctures formed under the influence of oxalic acid is peculiarly tough and tenacious and, therefore, quite different from the ordinary coagulum.

CLINICAL OBSERVATIONS

Oxalic acid was tried in the Clinic of the College of Veterinary Science, University of the Philippines, on 5 cases—4 horses and 1 dog.

The horses were just previously operated on for the removal of epizootic lymphangitis nodules in the breast and arm. There was continuous dripping of blood from the wounds even one hour after the operation. The use of artery forceps and other means proved futile. It was then decided to try oxalic acid on these cases. Two horses each received 30 cc., and the other two were given 40 cc. each of the oxalic acid solution. In all these cases, the hemorrhage was completely arrested two minutes after injection and never recurred.

The dog, just castrated by torsion, had bleeding for some time after the operation. Some attempts to stop it were of no avail. The injection intravenously of 5 cc. of oxalic acid solution checked the hemorrhage in less than three minutes.

SUMMARY AND CONCLUSIONS

1. Observations on the influence of oxalic acid as a general hemostatic in 20 apparently healthy native horses, and in 5 clinical cases—4 horses and 1 dog—are presented herein.

2. The clotting time of the blood of normal animals which ranged from 8 to 14 minutes with an average of 10:35 minutes (10 minutes and 33 seconds) before the injection of oxalic acid solution suddenly dropped to less than 1 minute—ranging from 24 to 59 seconds with an average of 40:25 seconds, fifteen minutes after the injection. Thereafter, the coagulation time increased progressively and continuously in 4 to 6 hours to the pre-injection level, except in 3 cases which showed again a drop 1 hour after the treatment.

3. The results obtained in this study further proved the efficacy of oxalic acid in hemostasis. Its successful use in 5 clinical cases herein reported demonstrated, even in a small measure, its practical value in veterinary therapeutics.

4. Oxalic acid, in amounts used in this study, proved to be harmless, as the writer failed to notice any ill effect among the animals observed.

ACKNOWLEDGMENT

The writer acknowledges his gratitude to Dr. A. K. Gomez, Dean of the College of Veterinary Science, University of the Philippines, for encouragement received during the progress of the work.

-10-

Table Showing the Influence of Oxalic Acid on the Clotting Time of Blood of Native Horses

Animal No.	Sex	Age (Yrs.)	Pre-injection Coagulation Time (Min.)	Dose (cc.)	Coagulation Time at Various Periods After Injection of Oxalic Acid											
					15 Min.	30 Min.	45 Min.	1 Hr.	1 1/2 Hr.	2 Hr.	3 Hr.	4 Hr.	5 Hr.	6 Hr.	7 Hr.	8 Hr.
					Sec.	Min.-Sec.	Min.-Sec.	Min.-Sec.	Min.-Sec.	Min.-Sec.	Min.-Sec.	Min.-Sec.	Min.-Sec.	Min.-Sec.	Min.-Sec.	Min.-Sec.
1	M	4	9	30	40	0-51	1-30	2-58	3-12	3-30	4-45	6-10	7-32	8-15	9-00	9-00
2	M	5	13	30	50	0-49	2-00	3-10	4-01	4-20	5-10	6-03	7-00	8-40	10-01	10-28
3	M	4	8	40	50	0-52	1-45	3-20	4-00	4-10	5-11	6-25	7-51	9-27	10-00	10-00
4	M	4	10 1/2	40	25	0-57	1-56	2-46	3-35	4-17	5-08	6-58	8-45	10-10	11-01	11-01
5	M	4	14	36	29	1-03	2-15	3-55	4-41	5-14	6-08	7-08	8-49	10-00	11-01	11-01
6	M	8	12	36	56	0-48	1-24	2-00	3-42	4-19	5-10	6-17	7-42	9-30	10-00	10-00
7	M	4	12 1/2	40	24	1-01	2-00	3-11	4-06	5-17	6-23	7-53	9-58	11-00	12-00	12-00
8	M	4	12	30	45	0-57	2-59	3-19	4-51	5-40	6-21	7-27	8-56	10-51	12-00	12-00
9	M	5 1/2	12	40	50	1-03	2-42	3-19	4-51	5-47	6-56	8-49	10-51	12-00	13-00	13-00
10	M	6 1/2	12	40	57	1-45	3-39	4-22	5-58	6-47	8-11	9-59	11-11	13-00	14-00	14-00
11	M	7	12	40	57	1-45	3-39	4-22	5-58	6-47	8-11	9-59	11-11	13-00	14-00	14-00
12	M	6	12	40	57	1-45	3-39	4-22	5-58	6-47	8-11	9-59	11-11	13-00	14-00	14-00
13	M	3	14	40	54	1-09	2-12	3-17	4-56	5-41	6-51	8-18	9-40	11-00	12-00	12-00
14	M	8	14	40	24	1-06	2-01	3-17	4-56	5-41	6-51	8-18	9-40	11-00	12-00	12-00
15	M	8 1/2	8 1/2	35	48	0-58	1-06	2-01	3-17	4-56	5-41	6-51	8-18	9-40	11-00	12-00
16	M	6	8 1/2	35	48	0-58	1-06	2-01	3-17	4-56	5-41	6-51	8-18	9-40	11-00	12-00
17	M	5	9	40	48	1-20	2-09	3-00	4-53	5-40	6-51	8-18	9-40	11-00	12-00	12-00
18	M	4	10	35	55	1-59	3-00	4-00	5-55	6-40	8-11	9-51	11-00	12-00	13-00	13-00
19	M	5	10	35	55	1-59	3-00	4-00	5-55	6-40	8-11	9-51	11-00	12-00	13-00	13-00
20	M	7	13	30	46	1-00	2-20	3-30	4-51	5-09	6-21	7-51	9-41	11-10	13-00	13-00
					24	0-46	1-02	1-35	1-59	2-47	3-58	4-03	5-58	7-20	8-00	9-00
					59	1-46	2-59	4-00	5-35	6-17	8-53	9-58	10-43	12-40	14-01	15-00
					40:25	1-06:06	1-56:15	2-40:25	3-26:4	4-12:55	5-00:55	6-29:5	8-00:6	9-53:06	10-14:4	10-55:8
AVERAGE					36.5	1:06.06	1:56.15	2:40.25	3:26.4	4:12.55	5:00.55	6:29.5	8:00.6	9:53.06	10:14.4	10:55.8

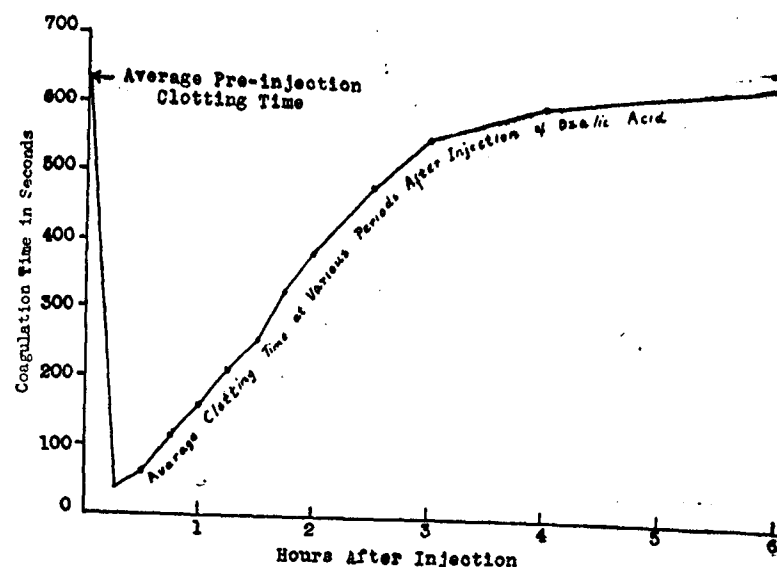


Chart Showing the Influence of Oxalic Acid on the Coagulation Time of the Blood of Philippine Native Horses

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RABBIT HUSBANDRY

By

R. D. KATIYAR, G.B.V.C., P.G., (MUK).,

*Veterinary Assistant Surgeon, Govt. Vaccine Depot, U.P.,
Patwa Dangar, Nainital.*

Rabbits are kept for pleasure, food and fur. They are also extensively utilised for experimental purposes. Rabbitry is a well developed science in some foreign countries, but as for as India is concerned, it is one of the many neglected industries. The purpose of this article is to throw light on the common problems of rabbitry of which the writer has got some experience.

Breeds of Rabbits:—There are many breeds and varieties of rabbits. There are fur, exhibition or fancy, and wool breeds. We need not go into their details; only the Angora and the Himalayan rabbits can be had in India.

The Angoras are pure white in colour and are common and very handsome. They produce wool 5" to 8" long within a year's time, and under commercial practice of shearing four times a year, the wool attains a length of 2" to 2½" each quarter.

The Himalayan is a pretty variety with short fine fur and red eyes. The ears are very short and firm. This variety is very hardy and prolific.

The common rabbits which may be of any colour is of mixed inheritance. Most of the rabbits found in India belong to this variety.

Housing of Rabbits:—The two systems of housing rabbits are well known.

The warren or colony system in which a number of bucks and does are kept together and allowed to breed indiscriminately, is not much recommended. In this system atleast 6" of cut straw or hay or pine leaves should be spread on the floor. The pucca floor is preferred to prevent burrowing. This system was tried here in the previous years and was ultimately given up, as the results were very disappointing.

The hutch system in which separate hutches are provided for each doe and buck, has much in its favour. Hutches are usually made of wood in the shape of boxes 4½' square and 1½' high are the ideal dimensions of a hutch. The details for making a hutch can be had from any good book on rabbitry.

The bottom of the hutch should be either of perforated metal or wire netting to allow the faeces and urine to pass directly into a tray kept below

and this metal floor will also facilitate disinfection. The wooden floor is highly objectionable as not only it interferes with disinfection but it soaks urine and faeces and makes it almost impossible to get the rabbit house rid of the peculiar foul smell.

The hutch must be divided into two compartments. The $\frac{1}{3}$ portion at one end must be enclosed with wooden board, to provide privacy to the doe during kindling period as she cannot bear to be watched while making her nest and caring for her young. The remaining $\frac{2}{3}$ must be enclosed with such a wire netting as to effectually prevent rats and snakes. It has been observed here that if rats are allowed to get in, they destroy the young rabbits and damage the large ones a great deal.

Bucks should be kept in separate hutches in a separate compartment of the rabbit house to prevent them from fighting and injuring each other.

Feeding:—For successful breeding of rabbits, their proper feeding on a balanced diet is very essential. Feeds should include two or more grains, a plant protein supplement, greens or root crops and salt.

Crushed gram and wheat or wheat bran supplemented by pea-sized linseed or sesame cake steeped in water for a few hours is palatable and desirable.

The following mixture given at the Indian Veterinary Research Institute, Mukteshwar, has been tried here at this depot and found very satisfactory.

Crushed gram	...	30 parts.
Wheat bran	...	50 parts.
Crushed maize	...	20 parts.
Salt	...	1.5 parts.

For the last few months due to non-availability of maize we have been feeding only gram and wheat bran and our rabbits are doing well. The gram can also be substituted by the linseed cake.

The amount of feed varies with the age, size and other circumstances. Generally two ounces of the mixture per head daily with four to six ounces of greens is sufficient for the well being of the animal. The pregnant does and does with litters should be allowed 50% more food. The food should be divided into two parts, $\frac{1}{2}$ to be fed in the morning between 8 and 9 A.M. and the rest $\frac{1}{2}$ at 5 P.M. which should be allowed to remain in the hutches as rabbits eat more at night.

Greens:—Immature and actively growing crops are natural food of rabbits. Lawn clippings, cabbage, waste from garden vegetables, Lucerne, fresh dub, sweet potato vines are palatable. High humidity specially at a

place like ours where rainfall is very high, is the most important vital factor causing indisposition amongst rabbits. Any green stuff for rabbits should be devoid of any extraneous moisture and on no account should be wetted to keep it fresh. The greens lying on the floor of the hutch and contaminated with faeces are often the cause of trouble. The greens should be placed on a wire rack attached to the front of the hutch within the reach of rabbits.

Water:—Plenty of fresh pure water should be supplied to rabbits. In summer they require large quantities 3 or 4 times a day. At low temperatures, as at this place, the rabbits should be offered water atleast once a day just previous to feeding.

Feeding vessels:—Metal troughs or cups affixed to the front of the hutches with hooks both for grains and water are essential. It is better to clean and boil these vessels daily to avoid the risk of spreading any infection.

Cleanliness:—General rules of hygiene should be observed as the least slackness on this score will cause disease. Does about to kindle and with young litters should be disturbed as little as possible and such hutches if cleared out every 3 days will be sufficient. The other hutches should be cleaned daily, dried, disinfected with a blow lamp specially during the rainy season. This will help to keep in check the coccidiosis, the most dreaded problem of the rabbitry.

Breeding:—In-breeding and line-breeding are the same in principle and should not be attempted as, besides intensifying readily the poor qualities they will lead to a variety of progeny, owing to the mixed ancestry of the rabbits. Cross breeding of pure breeds may be attempted. For pure breeding, the different breeds must be kept separate and the best females should be mated with the best males of the breeds.

The breeding age of rabbits is six months to 3 years. The average gestation period is 30 days. It varies from 29 to 31 days. For success one should follow a definite breeding schedule. One must not aim more than 3 litters in a year. A litter usually consists of 4 to 6 young ones. A card showing the date of mating, kindling and weaning must be fixed to each hutch.

The signs of heat are restlessness, nervousness, efforts to join other rabbits in nearby hutches, rubbing the chin on the feed receptacles and stamping on the floor. This condition continues for some time, but does not reoccur regularly and may be missed.

Mating:—One buck is usually allotted 6 to 12 does to serve. Mature vigorous buck may be used 2 times a week.

The popular and more scientific method as practised in the foreign countries, is to take a doe in heat to a buck's hutch for service, because the doe is likely to object to another rabbit being placed in her hutch and may attack and injure the buck. Usually mating occurs immediately indicated by mounting and falling over of the buck on one side. One fall is generally sufficient. After the mating being accomplished, the doe should be returned to her own hutch. This system requires personal supervision of mating.

The other method of mating which is being followed here with success is to place the buck in the doe's hutch and to allow to remain with her for 3 days.

Season :—The highest percentage of conception upto 90% has been recorded here during the months of February, March and April. July and August are the most unfavourable months for mating and some times the rate of conception have gone down even below five per cent.

Factors that limit conception :—

- (a) False pregnancy,
- (b) Sterility,
- (c) Extreme ages,
- (d) Poor condition,
- (e) Faulty mating,
- (f) Inadequate supply of greens.

False pregnancy is generally due to either infertile mating or sexual excitement caused when one doe rides another. It lasts on an average for 17 days. After 18 to 22 days the doe may give evidence of termination of false pregnancy by pulling fur and attempting to make a nest. She should be mated again.

Test mating is carried out to determine whether a doe has conceived or not. If on being placed in a buck's hutch, the doe growls and avoids the buck it is a fairly good sign that she is pregnant.

Pregnancy and kindling :—The rabbit is a very sensitive and nervous animal. A pregnant doe should not be disturbed by noise and handled only when it is absolutely necessary. As she begins to make her nest two to four days before kindling plenty of soft hay or straw or pine leaves should be placed in time in the enclosed part of the hutch. After she has made her nest, she will cover it with fur which the doe pulls from her own body. If a doe starts to pull her fur before she is expected to do it normally, she has perhaps missed and should be mated again.

Pregnant does should be fed and watered liberally. During the last 3 days extra grains and fresh water must be kept in the hutch throughout the period. At the time of kindling the doe develops an abnormal appetite

and thirst. In the absence of feed and water she may destroy and eat her young ones.

Young rabbits are born blind and naked. Eyes begin to open about the tenth day and are completely open on the 16th day. The young begins to eat with the mother when 20 days old. Until this time the doe and her young should not be disturbed or handled otherwise she is likely to desert or destroy her litter. Negligence of these minor points often leads to disastrous results.

Nursing and weaning :—First two months are very critical for the young rabbits in their existence. When about 7 to 8 weeks old, they should be weaned from the doe and allowed to run on the rabbit run for exercise for their proper health and growth.

The doe is given 7 to 10 days rest to recoup her before being mated for another family.

The young rabbits are sexed at 12 weeks and kept separately. The sex is determined by opening the aperture just in front of the anal opening. After 4 months of age the males are kept separately as they get quarrelsome and injure each other. At the time of weaning the rabbits may be selected for the breeding purposes. A male should not be used for service before he is one year old.

Handling of rabbits :—The right way to handle a rabbit is to grasp the loose skin over the shoulder with one hand and put the other under the hind quarters bearing the whole body weight and lift. Never handle by the ear as serious injuries might result.

DISEASES

Rabbits frequently fail to show symptoms of disease until they are very ill and therefore prevention of diseases should be aimed at. Curative treatment may become too late. General hygienic measures, strict segregation in small lots in the pre-epizootic phase and destruction of the infected animals are the only methods to be adopted to combat an outbreak of any infectious disease in a rabbitry. I shall mention only some of the important diseases.

1. **Coccidiosis :—**This is often the cause of severe epizootics of hepatitis and enteritis in young rabbits upto 3 to 4 months of age and hence it is of immense importance to rabbit breeders. The mortality is always high. It is common in wet weather.

2. **Etiology :—**i. *Eimeria stiedæ* of the liver of the rabbit causing hepatitis.

ii. *Eimeria perforans* is parasitic in the intestinal epithelium of rabbits and causes fatal enteritis.

Symptoms:—Gradual emaciation and diarrhoea. Sometimes faeces are blood stained.

Lesions are chiefly confined to the liver or digestive tract or both. The liver is enlarged and practically studded with numerous small white areas usually elevated slightly above the surface of the organ. Congestion and pin-head white specks are seen in the mucous membrane of the intestines.

Diagnosis by demonstrating coccidia in the liver nodules and intestinal contents.

Infection is carried from host to host by ingesting the ripe oocysts, the walls of which dissolve in the duodenum liberating the sporozoites. The immature oocysts are passed in the faeces and under favourable conditions of temperature and moisture develop into mature infective ones in about 48 hours. This is the weak point where we can break the life cycle of coccidia by the daily cleansing of the hutches and equipment. This removes the oocysts which do no damage to the stock when picked up within 36 hours of being excreted in the faeces.

Prevention:—1. Daily removal of faeces from the hutches and strict attention to hygiene are very important.

2. Rabbits of different ages should always be reared in different lots and on no account should young rabbits be allowed to mix with adults as they generally act as carriers.

3. Rabbit's faeces should not be used for manuring the land where greens for rabbits are grown.

4. The plots where greens for rabbits are grown should be made inaccessible to the wild rabbits by screening or other devices as they act as reservoirs of infection and may contaminate the greens by their faeces.

Treatment:—Both for prophylactic and curative purposes Sulphaguinidine in 0.5 to one per cent concentration of mesh may be given for 3 days and should be repeated after a week.

Sulphadiazine and Sulphamezathine are reported to be more effective when given before 5th day after infection and are not effective at all when merozoites have entered the epithelial cells. Hence they are of no use to the field worker.

2. **Pasteurellosis:**—The causative organism is *Pasteurella lepi-septica* and is often present in a carrier form. These carriers may prove a source of danger, for, if the condition of the stock is lowered the disease may flare up and cause heavy losses. The carrier itself may break down due

to moisture in the air at the beginning of the monsoon resulting in its becoming a victim to the disease or it may remain healthy but transmit the disease to other animals. Every rabbit with rhinitis and snuffles should be looked upon with suspicion.

In the last week of July 1945, an acute outbreak of pasteurellosis occurred in a compartment containing 25 rabbits with cent per cent mortality. The outbreak was diagnosed on the spot by Mr. Rajagopalan, research Officer of the Indian Veterinary Research Institute, Mukteswar. The following symptoms and lesions were observed.

Symptoms:—1. High temperature ranging between 104 to 105°F.
2. Diarrhoea with loss of appetite.
3. Death within 12 to 36 hours.
4. In some rabbits great excitement and violent struggling before death.

Lesions:—1. Subcutaneous haemorrhages.
2. Great congestion of lungs, liver, peritoneum and ecchymosis of intestines.
3. No enlargement of spleen.

Treatment is of no avail. It is only symptomatic and palliative.

Sulphadiazine may be tried as it has been reported effective in *Pasteurella pestis* infection in human beings.

Prevention:—1. Prompt and strict segregation to check the spread of the disease.

2. In actual outbreak, 5 c. c. of H. S. serum subcutaneously. The immunity lasts only for ten days.

3. The best procedure is to protect the rabbits at the beginning of the monsoon with an autogenous vaccine; but inoculation of rabbits with one c. c. of H. S. Vaccine has been tried here and found to confer a solid immunity to tide over the monsoon season. Last year again pasteurellosis broke out amongst the young unvaccinated stock and not a single vaccinated rabbit though kept in the same building was affected. Thus the efficacy of vaccination was proved.

4. Detection of carriers is very important. Pass a sterilized swab into the anterior nares after swabbing with alcohol and give a twist so that a spot of blood comes on the swab which is sufficient for culture purposes.

5. Sterilization of feed receptacles.

3. **Salmonellosis:**—It is very common in the guinea-pigs and many outbreaks are on record. No acute epizootic of salmonellosis, so far I know, has been recorded among rabbits in India. This year salmonella

infection first started here in the guinea-pigs in a very virulent form and from these, it spread to a compartment containing 40 rabbits of about 4 months' of age. Out of these we lost 36 rabbits.

At autopsy acute septicaemic lesions were observed. There was congestion of lungs, liver, peritoneum and marked enlargement of spleen. Organisms were recovered from heart blood, liver, and lung cultures.

General emaciation with loss of appetite was the only symptom observed. There was no marked rise of temperature.

The problem is complicated by the fact that 2% rats and mice which are liable to contaminate food stuffs, carry *Salmonella enteritidis* and *Salmonella typhimurium*.

Prevention:—1. The rabbit house should be rat proof.

2. Carriers should be detected and eliminated by culturing faeces on Mac-Conkey's agar and doing other tests for identifying the *Salmonella* organisms.

4. "*Snuffles*" or *Nasal Catarrh*:—A cold is always a matter of concern in a rabbit and should receive immediate attention. It is called snuffles, when bacterial in origin and *Pasteurella lepussepticus* and sometimes *Brucella bronchisepticus* have been isolated. Nasal Coccidiosis due to *Eimeria stiedae* is also a cause of nasal catarrh. The disease may manifest itself in an acute or chronic form.

The symptoms of snuffles are sneezing, nasal discharge recognised first by wetting of hair around the nasal openings, which in few days becomes thick and purulent. In bacterial type cold may extend and cause pneumonia. In nasal coccidiosis inflammation of eyes is often present.

Treatment is simply symptomatic and palliative. Inhalation of Eucalyptus oil and Tincture Benzoin Co-vapour relieves the symptoms.

5. *Rabbit Syphilis* or *Cutaneous Spirochaetosis* is a naturally occurring venereal disease or rabbits due to *Treponema cuniculi*.

Lesions consist of small scaly patches often slightly eroded and covered with a brownish crust, situated on the genitals or in the perineal region. Sometimes the nostrils and eye-lids are affected. The *Spirochaetes* are found in large numbers in scrapings from the lesions and are apparently confined to the superficial layers.

The disease is readily cured by intravenous injections of arsenical preparations or by local application of mercury ointment.

The affected rabbits till cured should not be used for breeding.

6. *Paralysis*:—Mostly met with in rabbits under 3 months of age and is probably the most difficult disease of all to cure. Hind quarters are

generally affected and the rabbit becomes so powerless that it drags its hind legs along the hutch floor. Injuries, damp hutch, filthy environments, and diseased kidneys are the predisposing causes.

I have seen some animals recover gradually even without any treatment. Small doses of brandy and milk may be given.

7. *Ear mange* or *ear canker*:—It is due to *Psoroptes cuniculi*. There is a creamy discharge in one on both ears, which though thin at first, rapidly becomes waxy and dark yellow in colour. The condition can be diagnosed by examining unstained scrapings under low power for the mite.

Treatment:—Remove the scabs and apply the following:—

Mercuric chloride	...	1 part.
Glycerine	...	100 parts.
Ethyl alcohol (50%)	...	200 parts.

8. *Megrims* or *dizziness*:—The rabbit carries its head on one side or swings it sideways. It is a kind of Paralysis. A few grains of powdered camphor in luke-warm water given once a day is found useful.

9. *Vent disease* or *Sexual inflammation* is often caused by the buck due to indiscreet pairing. Separate the animal, wash the part with any antiseptic lotion and apply carbolised vaseline.

10. Amongst other diseases are Virus III infection of rabbits and "Infectious Myxomatosis of rabbits" of which nothing is known in India.

Acknowledgment:—My thanks are due to Major P. K. Toya, M.B., B.S., D.P.H., Superintendent of the Government Vaccine depot, U. P. Patwadangar, for the facilities provided and the valuable suggestions in writing this article.

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IZUKA'S TEST FOR FLUOROSIS IN BOVINES *

BY

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Introduction.—The object of this paper is to present a very simple and practical test for diagnosis of Fluorosis in animals. To detect early cases of Fluorosis is essential for prompt preventive measures to be adopted. This test was first demonstrated by Dr. Akio Iizuka of the Veterinary Laboratory, Ministry of Agriculture and Forestry, Tokyo, in the diagnosis of equine osteomalacia; A. K. Gomaz and Arcadio C. Sonsays of the Veterinary Science College, University of Philippines, Manila, conducted this test on more than 12 horses suspected for *osteoporosis*. These two later authors read a paper in the Congress of the Philippine Veterinary Medical Association held in Manila, in February 17-18 (1938). R. Swaminathan (1939) Lecturer in Surgery, Veterinary College, Madras, applied this test for Osteoporosis in horses.

The author of this paper conducted investigation work in Fluorosis in cattle rather extensively in the districts of Kurnool, Nellore, Cuddappa and Anantapur in the Madras Presidency and studied the post-mortem and lists of pathological lesions of bones found in the disease. Diffuse sclerosing processes as well as a generalised condition resembling osteomalacia have been observed in most typical cases. In the skull there is a tendency for the mediary suture to give way while the other sutures are found loosely united. The mandibles of the lower jaw are found disunited at the symphysis. The long bones are found reduced in weight and they become light. Pitting and selective abrasions are found in the teeth. As such the author thought that the Iizuka's test which has been found very useful in early cases of equine osteoporosis might be useful similarly in detecting cases of Fluorosis at a very early stage.

The test.—Doctor Iizuka's instrument consists of a pointed stylet measuring 2 c.m. in diameter and 3.5 c.m. in length attached with a nut to a handle that is similar in appearance to an ordinary trocar. The author used only an ordinary metallic exploring needle for the purpose.

To use this instrument, the head of the animal is held in position slightly horizontally restrained by the nosestring and horns. The needle is inserted with a steady and moderate pressure into the frontal sinus. The proper point for insertion is near the middle of an imaginary line connecting the inner canthus of the eye and one inch above in the median

* Paper read at the 34th Session of the Indian Science Congress held at Delhi in January 1947.

suture. A positive test is indicated by the ease with which the needle can be inserted into the bone without evincing pain and also by the needle standing at right angles to the point of insertion. In negative cases the insertion cannot be made and besides the needle will be flat on the skin without any hold in the frontal bone.

AEGYPTIAELLOSIS IN FOWLS

BY

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Carpano (1930) reported this disease from Albania, where it occurred in a severe form among fowls along with Spirochaetosis. Information is scanty on the incidence, distribution and the economic loss caused by *Aegyptianella pullorum* in India, although this has been reported from several parts of this country occurring in a sporadic form.

The following is a brief account on the investigation into this infection carried out at the Government Poultry Farm, Patancheru, during the month of March 1947.

A. pullorum infection gives rise to symptoms only in those birds whose resistance is lowered by other causes such as contagious and parasitic diseases, malnutrition and tick infestation.

The disease occurred as an outbreak among 250 chicks of 1½ to 3 months of age, which used to be kept during the night in a chunnam-plastered mud house. This house was later found to be infested with ticks—*Argas Persicus*. Enquiries revealed that there was about 30-40% mortality in this flock, mainly due to pronounced anaemia which is very commonly met with in this disease. Concurrently, fowl-pox was prevalent and accounted for another 10-12% of deaths.

Symptoms:—About 50% of the affected chicks showed symptoms of pronounced anaemia. There was no rise of body temperature and on the contrary it was either normal or sub-normal. The birds appeared huddled up, showing un-kept feathers. Dullness, inappetance and diarrhoea together with symptoms or paralysis of legs and wings were also observed. The chicks on account of extreme weakness in the legs, were unable to stand and often lay prostrate on the ground. The whole flock was found infested with ticks—*Argas Persicus* (larvae).

Carpano (1939) reported the disease occurring in an acute and chronic form. The acute form is characterised by anorexia, diarrhoea and rapid death, while the chronic form shows digestive disturbances, diarrhoea, jaundice, anaemia and paralysis.

The outbreak in this case is only of a chronic nature.

Blood Picture.—The organisms are intra-corporcular and invade only the Red blood corpuscles. About 39 blood smears collected from the clinically affected chicks, were examined microscopically, which revealed 80 per cent of the Red blood corpuscles infected.

Smears stained by the Leishman's method revealed different forms of organisms (vide Plate VII) such as ring forms, crescentic forms, anaplasmod forms etc. (Plate VII fig. 11). As the parasite matures it breaks up into chromatinic granular masses round the periphery of the organism, producing rosette-like forms (fig. 1). These organisms usually occur singly in the Red blood corpuscles though in severe cases two or more bodies are not infrequently met with.

Diagnosis is usually arrived at by microscopic examination of blood during life.

Post-mortem.—Post mortem examinations conducted on about 20 dead fowls revealed no lesions characteristic of the disease, except a slight enlargement of liver and spleen with a few necrotic patches in the liver. Impression smears made from the tissues of lung, liver, spleen, kidneys and heart blood smears showed numerous organisms of *A. pullorum*, but these examinations are useful for diagnosis only in fresh carcasses.

Transmission:—This was conducted by infecting one healthy white leghorn pullet by intramuscular injection of blood from a natural case of aegyptianellosis. The organisms appeared in the peripheral blood four weeks after the inoculation. The pullet showed no perceptible sign of illness during the period of infectivity. This fact also suggests that infection with these organisms can only produce symptoms of a chronic nature in those birds whose vitality is reduced by some other intercurrent diseases or other factors.

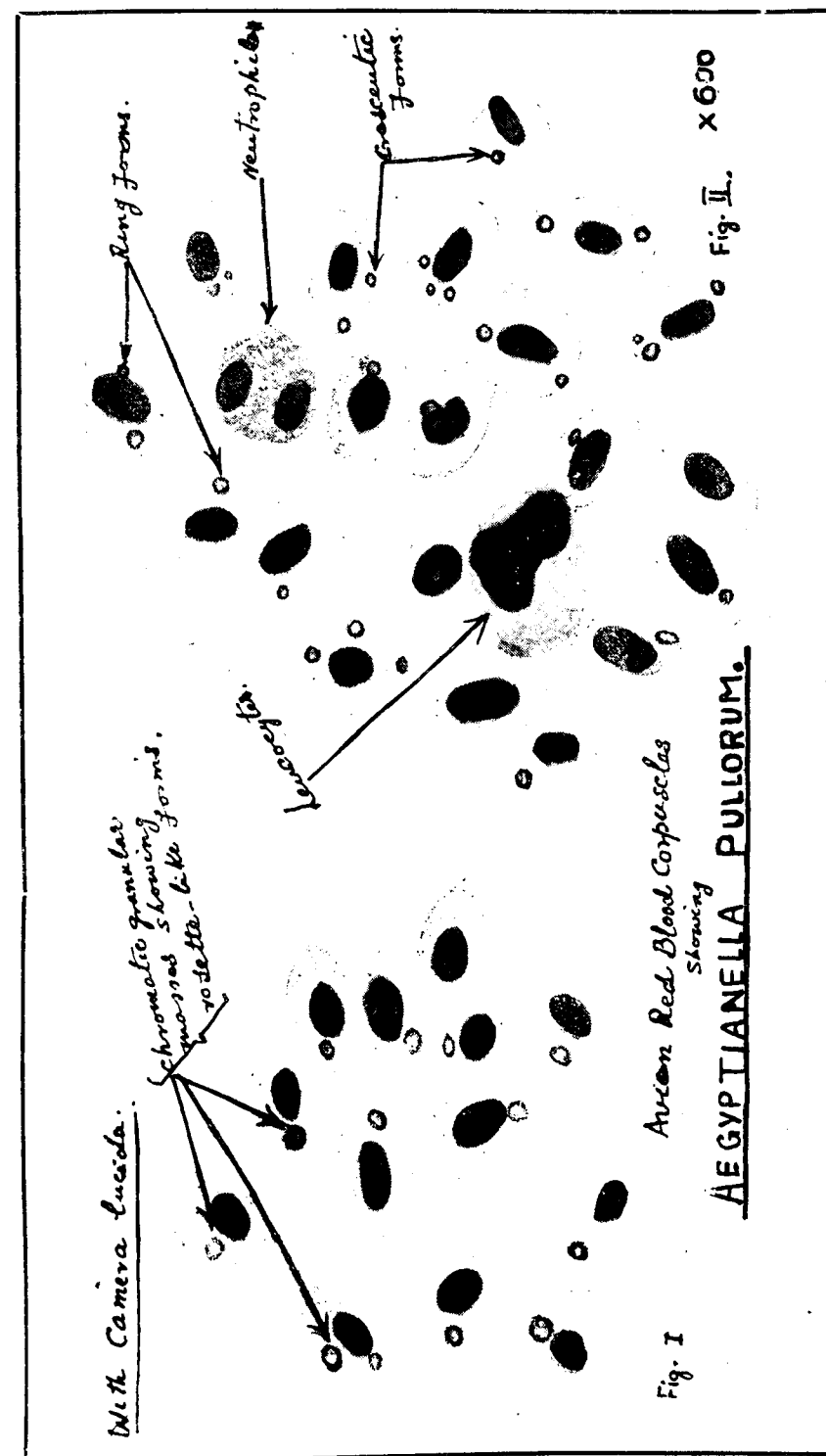
Blood smears from about six positive cases were sent to the Protozoologist, Indian Veterinary Research Institute, Mukteswar, who reported that the smears showed numerous organisms of *A. pullorum*.

Treatment:—With regard to treatment, various drugs have been recommended as under.—

1. **Trypan blue.**—1 c.c. of 1% solution of this drug may be given parenterally, but this does not clear the peripheral blood with the organisms. No doubt it does lead to rapid improvement in their general conditions.

2. **Acaprine.** 0.2 c.c. of 5% solution may be injected intramuscularly 3-4 times periodically.

AEGYPTIAELLOSIS IN FOWLS.





Sitting :—Dr. H. N. Ray; Dr. N. D. Kehar; Dr. G. D. Bhale Rao; Dr. F. G. Minett (Director); Mr. S. G. Iyer (O.C., P.R.S.);
Dr. P. Bhattacharya; Mr. M. A. Ali.
Standing I Row :—Messrs. M. M. Rafiq (Punjab); P. C. Pattanaik (Orissa); K. Purushothaman (Madras); S. M. Ghazi (Hyderabad);
H. P. Tandon (Patiala); V. P. N. Nadar (Madras); J. R. Kapur (Punjab); M. A. Rahman (Assam); S. N. Mehta (Punjab);
Standing II Row :—Sharafat (Lab. Attendant); Messrs. Prem Nath (Punjab); S. L. Talwar (I.V.R.I.); J. N. Arora (U. P.); S. G. Dixit (Bombay); D. T. Parnalk (Bombay).

3. *Stovarsol and Acetylarsan*.—Messrs May & Baker, Ltd., Bombay, suggested the use of these medicines in this affection. Although these drugs do not kill the organisms, they were reported to have a favourable effect on anaemia which is generally associated with this condition. The efficacy of these two drugs was observed in Spirochaetosis, where they produced the desired effect in combating the disease.

The author has tried trypan blue and Stovarsol in cases of aegyptianellosis and found them effective.

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BACTERIOLOGY OF BOVINE MASTITIS IN INDIA WITH SPECIAL REFERENCE TO THE INCIDENCE OF *STREPTOCOCCUS AGALACTIAE* *

By

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Veterinary clinicians in India have been quite familiar with mastitis as an affection of milch cattle but it was not until the beginning of the last decade that the subject received serious consideration. The investigations of various workers in Europe and North America supplied the much needed stimulus in this direction, so that from 1935 the subject has been given more attention than before. In this paper is given a consolidated summary of the work done from 1935 to 1942. This includes a systematic survey of the incidence of *Streptococcus agalactiae* infection in some dairy herds. The main object has been to obtain some preliminary knowledge of the bacteriology of bovine mastitis in India. The work was started primarily to determine the common bacterial types associated with it, and secondly, the extent to which *Str. agalactiae*, the most important and common cause

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of chronic streptococcus mastitis in other countries, is responsible for udder infections in this country.

The observations made are described under two sections 1 and 11.

SECTION I

Under this head is described the preliminary work done from 1935 to 1940 to determine the types of bacteria associated with mastitis, and especially to see if *Str. agalactiae* could be commonly isolated.

MATERIAL AND METHODS

The material examined came, as a rule, from cows and buffaloes affected with clinical mastitis in the experimental dairy herds at Mukteswar or from different parts of the country. In the case of the Mukteswar cows, the material consisted of mixed udder milk or more commonly milk from affected quarters. The technique adopted was to streak the centrifuge deposit on blood or plain-agar slants for primary isolation of bacterial types. In many cases, cultures were obtained with a fair degree of purity. The material received from the field was generally milk or a more or less purulent udder secretion, swabs of milk or pus, and in one case a portion of the affected mammary gland preserved in glycerine. The cultural technique adopted with these specimens was similar to that used for milk from the Mukteswar cows. In many cases, films of the udder secretion or milk deposit were also examined for bacteria and pus-cells. Many of the Mukteswar cows and a couple of 'field' cows were re-examined.

The bacteria isolated in pure culture and suspected of being connected with the disease were studied. In the early stages of the work, the system of classification recommended by Bergey was used. This largely explains why *Str. agalactiae*, though probably present, was not definitely identified until 1939, after which it became the general practice to submit all the streptococcus strains to the biochemical tests now recommended for classifying mastitis streptococci.

RESULTS

Only the more important features are given below.

1. *Streptococci*. About 55 strains of streptococci were recovered from 45 animals (18 Mukteswar and 27 'field' animals). Few of these strains were subjected to a thorough examination, so that the identifications recorded would not satisfy modern standards. The more definite and reliable specific labels are considered below.

(a) *Str. agalactiae*. *Str. agalactiae* was isolated from ten cows and one buffalo; seven of these were 'field' cows. This number also includes one *Str. mitior* strain which on later examination proved to be *Str. agalactiae*. At least one other strain, which had been considered to belong

to 'Mastitis Streptococcus, Group 1' Minett Stableforth and Edwards) may have been a true *Str. agalactiae*, but it was not available for further examination.

(b) *Str. mitio*. *Str. mitior* was isolated from three cows, two of which were 'field' cases, and one buffalo. Perhaps all, and certainly one, of these strains should be regarded as *Str. agalactiae*. The buffalo strain was not available for further examination, but the animal itself was two years later found to be infected with *Str. agalactiae*.

(c) *Str. uberis*. *Str. uberis* was said to have been isolated from two 'field' cows, but the diagnosis was based on incomplete study. Organisms labelled 'haemolytic diphtheroids', probably *Corynebacterium pyogenes*, were also recovered from these cows.

(d) *Str. subacidus*. The characters of this organism are fully described in section 11. Strains of streptococci possessing such characters were recovered repeatedly from two Mukteswar cows. During the later survey work, one of these proved to be infected with *Str. agalactiae*, but from the other *Str. subacidus* was again recovered.

(e) *Str. pyogenes*. *Str. pyogenes* (i.e. strongly haemolytic streptococci belonging to Lancefield's group A) was not isolated from a single case.

2. *Staphylococci*. *Staphylococci* considered to have pathogenic importance were isolated from about 20 animals. None of these strains was actually tested for its pathogenicity, but a few were found to be haemolytic and coagulase positive. Their characters are further described in Section 11.

3. *Diphtheroids*. Many of those isolated were obviously nonpathogenic. *C. pyogenes* was isolated in practically pure culture from purulent udder secretions of five 'field' cows and one 'field' buffalo. Two more strains from 'field' cows and labelled 'haemolytic diphtheroids' were probably true *C. pyogenes*. In all these, there was a history of suppurative mastitis. The cultural and other characters of these strains corresponded to those of classical *C. pyogenes* from mastitis and other disease conditions, viz. small Gram-positive organisms, forming minute haemolytic zones in blood agar, digesting milk and gelatine and solid serum, and giving acid in lactose and not mannitol. Another character, perhaps not previously described, was their power of hydrolysing hippurate, like *Str. agalactiae*, but to a somewhat lesser extent, especially when grown in media containing a little ox-blood serum. This property was manifested by all the mastitis strains as well as by those from other sources.

4. *Bacterium coli*. *Bact. coli* and coliform organisms were isolated from several cows. From one cow and one buffalo at Mukteswar,

haemolytic strains of *Bact. coli* were recovered repeatedly and this organism probably caused the somewhat acute mastitis occurring in these animals.

5. *Mycobact. tuberculosis*. Although a number of tests were made, there is but one case in which tuberculosis of the mammary gland was established by cultural and biological tests.

6. *Miscellaneous bacteria*. Among other bacteria of doubtful pathogenicity, the outstanding organisms were strains of *Proteus* and *Pseudomonas*.

SECTION 11. SYSTEMATIC SURVEY

After *Str. agalactiae* as a cause of bovine mastitis in India had been definitely established, it was decided to institute a general survey of the incidence of udder infections due to this organism in a few organised dairy herds. The results are shown in table 1.

MATERIAL AND METHODS

A total of 541 cows, including four buffaloes, belonging to 15 dairy herds in different parts of the northern India, were examined. The 16 cows included as Herd 13 really consisted of animals admitted to the Punjab Veterinary College from various parts of Lahore; they are herded in this way for descriptive purposes. Milk samples were taken from the individual quarters of nearly all cows available in the different herds. In a few cases, one or more teats were 'blind', and in each of two animals only one quarter was available.

As the main object was to determine the incidence of *Str. agalactiae* infections and since it was also desired to make some simultaneous observations on the incidence of *Staph. pyogenes* infections, the cultural technique employed was essentially the same as that used by the English workers (Minett, 1934) viz. to centrifuge about 10 c.c. of foremilk collected cleanly from the individual quarters and to show the deposit in 5 per cent ox-blood agar plates. As a rule, two plates were made from each sample. In the first half of the deposit and in the second one-tenth of this amount was taken. When the deposits were particularly heavy or when there was reason to suspect a high bacterial count, plates were sown from further dilutions. Plates were examined at 24 and 48 hours incubation and the type of colonies noted. Suspicious colonies were transferred to one percent serum broth for morphological study and purification (blood agar surface). *Streptococci* were tested in the following manner. Type of hæmolysis was noted in the primary growths from the deposits. Intensity and character of growth in serum broth were noted after 24 and 48 hours and morphology was studied (chain formation, Gram staining). Fermentation tests were in lactose, sucrose, mannitol, salicin, sorbitol, trehalose, raffinose and inulin, all in one per cent solutions and containing one per cent each of ox-serum and Andrade indicator. Also noted were final pH in glucose broth (one

per cent) hydrolysis of sodium hippurate, changes in litmus—milk and methylene blue-milk (1:20,000). Unless otherwise stated, observations were made during one week at 37°C.

RESULTS.

The main results are summarized below. Table 1 should be seen again.

1. *Streptococci*. One hundred and twenty-four strains of streptococci, isolated from 87 cows and one buffalo, belonging to 12 herds, were classified as follows.

(a) *Str. agalactiae* was definitely diagnosed in two herds and suspicious strains were isolated from three more herds. The ten suspicious strains came from eight cows as follows: four from two cows at Izatnagar and six from six cows in the neighbourhood of Lahore. The ten authentic strains of *Str. agalactiae* were isolated from eight cows and one buffalo. Thus, in this survey the percentage of animals definitely infected with this organism is less than two. One of the infected herds at Mukteswar (Herd 1) contained at the time of examination 30 cows, mostly crossbreds, and four buffaloes in milk. *Str. agalactiae* was isolated from three cows and one buffalo. There were also one cow and one buffalo in this herd previously shown to be infected with *Str. agalactiae*. Two other cows, which were apparently free from pathogenic streptococci in this survey, were found to show *Str. agalactiae* at a previous examination (Section 1), but the quarters from which these organisms were originally obtained were 'blind' at the time of the survey. Obviously pathogenic streptococci were also recovered from five more cows of the same herd. It is interesting to note that in herd 2, Mukteswar, which consisted of the small Afghan and Kumaoni hill cows, *Str. agalactiae* was not encountered. From the second infected herd (Herd 3, Patna) six strains of *Str. agalactiae* were recovered from five of 83 cows examined. Seventeen more strains of streptococci, which could not be properly classified but which were probably of little pathogenic significance, were recovered from 13 other cows of this herd.

The main cultural and biochemical characters used for classifying *Str. agalactiae* and possessed by all strains accepted as *Str. agalactiae* in this work as follows.

Haemolysis. *Str. agalactiae* was easily recognized by the comparatively small width and weak character of the B-haemolytic zones about the deep colonies in ox-blood agar plates after 24 hours incubation.

Growth. Growth in one or 5 per cent serum broth was moderately abundant, with clear supernatant and floccular sediment, sometimes faintly pigmented. The sediment was composed of medium to long chains of Gram-positive cocci.

TABLE I
Incidence of Streptococci, etc. from milk samples of 15 herds.

Herd No.	Pla	Time of examination	No. of cows examined	Total streptococcus strain isolated		Str. agalactiae		Other mastitis streptococci	Streptococci, probably non-pathogenic	Staph. pyogenes strains
						Authentic	Suspected			
1	Mukteswar	June-July 1940	30 and 4 buffaloes	12 (from 10 cows and one buffalo)	4 (from 3 cows and one buffalo)			(i) <i>Str. uberis</i> , 2 (from two cows) (ii) <i>Str. dysgalactiae</i> . One suspicious strain	2 (from two cows including one of <i>Str. acidominimus</i>)	30 (from 14 cows and 2 buffaloes)
2	do.	July 1940	12	24 (from 9 cows)					<i>Str. acidominimus</i> 24 (from 9 cows)	20 (from 7 cows)
3	Patna	April-May 1941	83	23 (from 18 cows)	6 (from 5 cows)				17 (from 13 cows)	40 (from 23 cows)
4	Izatnagar	December 1941	21	4 (from 2 cows)			4 (from 2 cows)		1	13 (from 6 cows)
5	Lahore	January 1942	99	3 (from 3 cows)					3 (from 3 cows)	16 (from 13 cows)
6	do.	do.	6							4 (from 3 cows)
7	do.	February 1942	34							9 (from 3 cows)
8	do.	do.	21	1					1 (from 2 cows)	9 (from 7 cows)
9	do.	do.	21	4 (from 4 cows)			2 (from 2 cows)		2 (from 2 cows)	9 (from 3 cows)
10	do.	do.	21							9 (from 6 cows)
11	do.	do.	21	2 (from 2 cows)					1	9 (from 1 cow)
12	do.	March 1942	30	1						40 (from 25 cows)
13	do.	do.	16	11 (from 11 cows)			4 (from 4 cows)		9 (from 7 cows)	8 (from 7 cows)
14	New Delhi	May 1942	54	29 (from 20 cows)					29 (from 20 cows)	
15	Karnal	do.	68	8 (from 6 cows)					8 (from 6 cows)	
	Total		537 cows and 4 buffaloes	124 strains	10 strains	10 strains	10 strains			

Hydrolysis of sodium hippurate. This reagent was unmistakably hydrolysed (usual ferric chloride test, with unsown hippurate broth controls).

Final pH in one per cent glucose broth. This was generally low towards 4.2.

Litmus-milk. Fair inocula produced rapid acidity with firm clot formation within 24 hours, with some decolouration at the bottom. On further incubation, a clear reddish whey was expressed.

Methylene blue-milk. Generally, the results varied with the size of the inoculum. Small inocula failed to grow. Heavy inocula caused a complete reduction and clot formation within 24 hours, followed later by progressive oxidation from the top.

Sugar reactions. All strains produced acid in lactose, sucrose, salicin and trehalose, but not in mannitol, sorbitol, raffinose and inulin.

(b) *Str. uberis*. *Str. uberis* (Mastitis Streptococcus, Group 111, of Minett *et al*) was isolated from two cows at Mukteswar. Both were α -haemolytic, gave abundant floccular growth in serum broth with clear supernatant, formed short to medium chains, hydrolysed sodium hippurate, produced a final pH 4.6-4.9 in glucose broth, acid in litmus-milk with small inocula but acid and soft clot within 24 hours with larger inocula, acid in lactose, sucrose, mannitol, salicin, sorbitol, trehalose and inulin, but not in raffinose.

(c) *Str. dysgalactiae*. *Str. dysgalactiae* (Mastitis Streptococcus, Group 11, of Minett *et al*) was suspected in one cow at Mukteswar, but the reactions were not quite typical. Except for the type of haemolysis, these characters were not very different from those manifested by strains labelled as *Str. subacidus*. The organism was α -haemolytic, grew abundantly in serum broth as a floccular pigmented sediment with clear supernatant, short to medium chains, a final pH of 5.4 in glucose broth, no hydrolysis of sodium hippurate, acid in sucrose and trehalose. Small inocula in litmus-milk and methylene blue-milk gave no change, larger inocula caused a slight and incomplete reduction later returning to normal.

(d) *Str. subacidus*. This was the label given to a number of strongly β -haemolytic streptococcus strains isolated from various cows at Mukteswar and elsewhere, sometimes repeatedly and in large numbers, and often in association with *Staph. pyogenes*. These streptococci were considered to be definitely pathogenic and their main cultural and biochemical characters were as follows. typical streptococcus colonies, both deep and superficial ones being surrounded by wide zones of clear β -haemolysis; abundant and sometimes pigmented floccular sediment and clear supernatant in serum broth, chains of medium length; final pH of 5.2-5.6 in glucose broth; hippurate not hydrolysed; acid and slowly-formed incomplete clot in

litmus-milk with slight reduction at bottom; small inocula producing no change in methylene blue-milk but larger inocula causing complete reduction with clot formation; acid only in lactose, sucrose and trehalose.

Two of these strains were tested for pathogenicity, using 0.5 c.c. serum broth culture intraperitoneally. Both were non-pathogenic at this dose.

(e) *Str. acidominimus*. Twenty five strains, isolated from ten cows at Mukteswar, had the characters of this species. There was no evidence of mastitis in these cows and the streptococci appeared to be saprophytic. Their salient characters were: alpha-haemolysis; slight uniform turbidity in serum broth, short to medium chains; final pH 6.6 in glucose broth, comparatively weak but definite hydrolysis of sodium hippurate; no change in litmus-milk or methylene blue milk; very weak acid in lactose, sucrose, and trehalose.

(f) *Unclassified*. Seventy-three strains isolated from 56 cows could not be properly classified. Most were considered of no direct pathogenic significance.

2. *Staphylococci*. These commonly found organisms were divisible into two main groups (Minett, 1937).

(a) *Saprophytic staphylococci*. (i) Colonies unpigmented or white pigmented, superficial ones often resting on a bed of clear haemolysis but deep colonies either non-haemolytic or surrounded by zones of greenish discolouration, (ii) Colonies pigmented yellow or somewhat like '*Staph. aureus*' or, as in one case only, like '*Staph. citreus*' generally with no evidence of haemolysis around either deep or superficial ones; (iii) Small colonies, the deeper ones more minute and often surrounded by fair sized zones of intense greenish discolouration. Organisms of the last group had a characteristic tendency to form tetrads. In ox-blood agar plates, their minute deep colonies were sometimes liable to be mistaken for streptococcus colonies. The few strains studied of these different types were found to be non-proteolytic and failed to form coagulase or soluble haemolysis.

(b) *Staph. pyogenes*. Colonies generally pigmented like '*Staph. aureus*'. Deep colonies were surrounded (i) in several cases, by wide and well-defined zones of darkening, characteristic of β -toxin; (ii) in a few cases, by moderate-sized zones of clear haemolysis, characteristic of α -toxin; and (iii) in most cases, immediately by comparatively narrow zones of clear haemolysis and peripherally by wider zones of darkening, indicative of both α - and β -toxin. Storage in the cold brought about progressive changes in these different types of haemolysis characteristic of pathogenic staphylococci of bovine origin. Superficial colonies were generally haemolytic. A few strains studied were found to produce soluble haemolysin; they were actively proteolytic (gelatine), generally fermented mannitol and invariably formed coagulase for rabbit plasma.

Staph. pyogenes was encountered in 204 quarters of 126 cows and two buffaloes i.e. in nearly 24 percent of all animals examined. No herd was found completely free from infection with this organism and in some the incidence was nearly 60 per cent. In many cases the colonies obtained were very numerous, and it seems that *Staph. pyogenes* may be regarded as the commonest cause of udder infections in this country. It was, at any rate, found to be common in milk from cows which had developed acute inflammation of the udder, generally *post-partum*. With suitable treatment and care, such udders tended to return to normal, but the worse affected quarters continued to excrete the organism in gradually decreasing numbers for some time. Similar affections also seem to be associated with other bacteria and occasionally, especially when examined quite early in the onset, it may not be possible to recover any organism of pathogenic significance.

DISCUSSION

It is hoped that this work may provide preliminary information on the general bacteriology of the diseased bovine udder in India and may furnish some information on the incidence of different types of streptococci, staphylococci, and other organisms recognized to be commonly associated with the disease in other countries.

The methods used for streptococci were restricted to their cultural and biochemical characters. Serological typing was not undertaken, partly because objects of the work did not demand it, partly because the typical strains of *Str. agalactiae* can be recognised without much difficulty by the methods used and partly because facilities for serological work were not available.

Since systematic examination for udder induration etc., was not done, it is not possible to give accurate information about the correlation between the different bacteria and the various kinds of udder affections. However, some information of a general character, based partly on the clinical history supplied and partly on a few clinical examinations has been incorporated.

SUMMARY

This paper gives an account of preliminary investigations, carried out from 1935 to 1942, on the general bacteriology of mastitis in cows and buffaloes in India. Systematic examination of the udder for induration, etc., was not taken up.

The first section deals with the examination of over 100 specimens of udder secretion from 85 cows, including a few buffaloes, affected with clinical mastitis in different parts of the country. The second section is concerned with a systematic examination of 541 cows from about 15 different dairy herds in the northern India.

3. Bacterial infections of the bovine udder in India correspond fairly, in type and cause, to similar infections in other countries.

The existence of *Str. agalactiae* has been established in both cows and buffaloes at a number of places, but the incidence is low. In the preliminary work, several strains of *Str. agalactiae* were recovered from cows and buffaloes affected with clinical mastitis. In the systematic survey, ten authentic strains and ten suspicious strains of *Str. agalactiae* were isolated from cows and buffaloes belonging to five herds.

Other streptococcus groups occasionally found were *Str. dysgalactiae* in one cow with subacute mastitis, *Str. uberis* in two cows with a history of mastitis, and *Str. subacidus* from a few cows mostly with a more or less acute mastitis. There were also several strains of streptococci, mainly from apparently healthy quarters, which were not properly classified. There was no authentic case of *Str. pyogenes* (Lancefield group A) infection.

Among other well recognised pathogens of the bovine udder were:

(a) *Staph. pyogenes*, of which some 250 strains were isolated from nearly 140 cows; this organism was held responsible, alone or in conjunction with others, for some acute *post-partum* mastitis and for much chronic low grade mastitis.

(b) *Corynebact. pyogenes* was isolated, often in pure culture, from about five cows and one buffalo with suppurative mastitis.

(c) *Bact. coli*, and other coliforms, were isolated from several animals and seemed to be definitely pathogenic in at least one cow and one buffalo.

(d) Other organisms of possible importance were three strains of *proteus* and one strain of *Pseudomonas*.

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Space does not permit individual acknowledgement to all officers who were on different occasions connected with this work. The two outstanding contributions have been from Messrs. P. R. K. Iyer and B. N. S. Chowdhury. The former was responsible for many of the findings reported in Section 1, and the latter did much of the work on animals at Lahore. The writer is grateful to Mr. J. F. Shirlaw for encouragement and help in arranging facilities. The systematic survey reported in Section 11 was initiated by Dr. F. C. Minett, to whom I am also indebted for arranging and correcting this paper.

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*BOVINE MASTITIS IN ORISSA

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The serious economic loss sustained annually, by the cattle owners of our country, due to ravages of mastitis, has long been recognised; and it is unnecessary for me to go over the various causal factors responsible for this complaint. In this paper I will simply record my observations on the incidence of the disease in the Government Civil Dairy at Cuttack, Orissa.

The nucleus of this Dairy consisting of 13 milch Harijana Cows and 8 milch Murrah buffaloes was laid at Cuttack, within the office compound of the Deputy Director of Veterinary Services, Orissa in the month of May, 1944 to solve to a certain extent the milk problem of the town.

On 17-8-44 one lactating cow (H. P. 1) with history of inflamed udder was brought to my notice. She was given one drachm of formalin in one pint of water orally, daily for three consecutive days, with local application of camphorated oil to the affected udder. Her milk samples revealed G + Streptococci indistinguishable from streptococcus agalactiae on laboratory examination on 19-8-44. She was given intramammary infusion of 75 c.c. of 1:5000 freshly prepared solution of acriflavin into the affected left hind quarter on 20-8-44. The fluid was completely withdrawn after five minutes. The oral administration of formalin and local application of camphorated oil was discontinued as the swelling of the udder had subsided.

This case of streptococcal infection in the Dairy gave us a warning to undertake a whole-herd-test and this was performed during the period from 25-8-44 to 2-9-44. One dry cow (H. P. 9) revealed G + Streptococcal infection of her left hind quarter, indistinguishable from Streptococcus agalactiae on laboratory examination. On 9-9-44 intramammary infusion of 1:5000 solution of acriflavin was given to the affected quarter. The fluid was freshly prepared and was infused by slow gravitation method at body temperature. It was allowed to remain overnight. Next day the fluid was completely withdrawn.

In order to maintain the continuity of milk supply to the permanent customers, a second batch of 15 milch Harijana Cows and 9 milch Murrah buffaloes were purchased in February, 1945 for the Dairy.

It was noticed that the milk yield of one cow (H. P. 6) and one buffalo (M. P. 3) purchased in the first lot, in their second lactation under

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Orissa condition was very poor and their yield was not even sufficient for their young ones, though they were giving fairly large quantities of milk in their first lactation in Orissa. A suspicion of streptococcal infection in the herd arose and whole-herd-test was undertaken from 25-12-45 to 17-1-46. Four cows (H. P. 6, H. P. 15, H. P. 27 & E. 4 and one buffalo (M. P. 2) revealed streptococcal infection in 9 of their quarters. Out of these, H. P. 6 and M. P. 2 were purchased in the first lot and H. P. 15 and H. P. 27 in the second lot; E. 4 was the progeny of one of the cows of the Dairy Farm prior to its being taken over by the Civil Veterinary Department from the Agricultural Department on 10-4-44. Two cows (H. P. 22 and H. P. 30-2nd lot) and one buffalo (M. P. 3-1st lot) remained suspicious. All the affected quarters of the cows and the buffaloes except E. 4 who was then in advanced stage of pregnancy, were infused with 75 c.c. of 1:5000 solution of acriflavin at body heat. The fluid was withdrawn completely after 5 minutes except from cow—H. P. 15, in which case the solution was allowed to remain for 15 minutes as she was in her advanced lactation.

Result of treatment:—Cow H.P. 1 gave a milk yield of 2191 lbs. in her 1st lactation of 364 days in Orissa. In her 2nd lactation in Orissa, commencing from 4th September 1945 till 31st January 1946 (i.e. in 150 days), she gave 1169 lbs. She is at present yielding on an average 5 to 8 lbs. of milk per day. There is no doubt that her milk yield will become greater than that of previous year's.

H. P. 9 in her first lactation has yielded 2271 lbs. and 9 ounces. She is now in her 3rd lactation in Orissa.

In each of the above 2 cases the milk yield has improved after treatment with acriflavin.

Observations made:—The milk-yield improved perceptively after treatment with acriflavin. This proves the high bactericidal property of acriflavin against streptococcal infection.

In lactating cows where animals are milked twice, the milk assumes normal colour only after 48 hours, i.e., after 4 milkings from the time the acriflavin solution was infused.

Acriflavin imparts no odour to the milk after treatment, though it does impart colour.

Of 11 quarters treated, 6 were of hind quarters and 5 were of fore-quarters. This is contrary to the observations recorded by others. I have, in course of my treatment come across the incidence of bovine mastitis of streptococcal origin more in hind quarters than in fore.

Incubated milk reveals a higher percentage of infection, than ordinary milk examination.

Treatment by acriflavin infusion depends upon the nature of infection (acute, sub-acute, or chronic) and on the state of lactation (in full or late lactation or in dry period) of the animal treated. In dry cows, cows in advanced lactation, cows in full lactation, the fluid (acriflavin solution) is allowed to remain in affected quarters for 24 hours, 15 minutes and 5 minutes respectively. More time is allowed in dry cows, because of the empty udder and less time is allowed in lactating cows for fear of clogging and blocking the teat canals.

The strength of acriflavin solution used in the treatment of mastitis should never be more than 1:5000 as otherwise it may destroy the milk secreting cells, instead of clearing out the organisms from them.

Slow gravitation method is generally used as it is very convenient to the operator and less harmful to the udder tissue.

Control Measures Taken:—In the year 1945-46 four fresh cows and 2 doubtful ones and 1 buffalo excluding 1 doubtful one were affected.

As a safeguard against further spread of the infection, periodic bacteriological examination of all cows and buffaloes of the herd is being carried out and arrangements have been made for milking the affected animals last.

Treatment is given to the animals in accordance with their state of lactation.

Clinical cases are milked last and are given oral administration of formalin one drachm in one pint of water with local application of camphor liniment to the inflamed udder.

The healthy animals are attended first so far as their feeding, cleaning, stripping, etc. are concerned.

Separate milking utensils are used for the infected animals.

Fresh arrivals are examined as soon as possible before they are allowed to mix with the rest of the herd.

Conclusion:—To ascertain the actual incidence of mastitis in cows, a regular survey should be carried out in the Province and a special officer (Bovine Mastitis Investigation Officer) should be appointed by the Government to carry out this work. The cattle owners in the rural areas should be induced to co-operate with this officer, and get their animals periodically examined and the affected ones treated. The owners should be enlightened on the scientific methods of isolation, segregation and sanitary condition of their infected animals as far as practicable under rural conditions. This will solve the problem of "Bovine Mastitis Control" to

a considerable extent. If this procedure is adopted, the province, in my opinion, in the long run be a gainer from an economic standpoint.

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Editorial

LIVESTOCK SECTION, MADRAS.

We are glad to learn that at its last meeting, the Provincial Livestock Improvement Board, Madras, has negatived the proposal to separate the Livestock Section from the Veterinary Department, and that the *status quo* is to be maintained. We are also glad to learn that the Government have created a post of a Joint Director of Veterinary Services to intensify the Livestock operations and appointed Sri K. S. Nair, G.B.V.C., M.R.C.V.S., D.T.V.M., for this new post.

Thus this vexed question of separation of Livestock section from the Veterinary Department has ended and we appeal to everyone to take this decision in good spirits and settle down to work.

A word to those who started to agitate over this question. Put the country before self. Any ryot in a village will today admit that Livestock work in Madras has made very good progress under the Veterinary Department. What does it matter who delivers the goods, so long as it is done faithfully and well? Let there be no squabbles over power and position. Think only of the man behind the plough. Let us not forget him in our attempt at self-aggrandisement.

Let everybody settle down to serious work then. The good work that has been in progress all along has been badly dislocated during the past twelve months. There was nothing but propaganda undermining the morale and discipline of the staff. This

should no more be permitted. We only hope that both the Director and the Government would insist upon substantial work and not countenance talk, talk and more talk.

To those who cannot pull the weight with a hard-working Department like the Civil Veterinary Department, Madras, the order of the day must be "Work or Quit". It is only then the good name of the Department will not be dragged into the mire.

FREEDOM!

(Contributed.)

"Freedom's battle once begun
Though baffled oft is ever won".

Freedom has dawned on India! It has been hailed in thousand and one ways throughout the length and breadth of the land. Be that as it may, "what next", is our problem now. It is not merely a problem to be discussed and solved only at high Ministerial level for the entire nation. It is as much a problem of the individual who composes that nation. It is this aspect of the question we wish to impress on the members of our profession. Let every son of India remember that he has to serve his country loyally and well in his own humble sphere of work to retain this freedom, so admirably won. How is this to be done? The tri-colour of our National Flag has been interpreted in many ways. But to us it must mean Sacrifice, Honesty, Efficiency. The wheel denotes motion and not immobility. Action and not inaction. Work and not idleness.

Yes; we have to sacrifice many things if we have to serve our country faithfully. It costs even to be good. Thousand and one handicaps thwart us to do well even the work of the present hour. Let us not despair of the steep climbing, the sore struggle and the hard knocks. Let us go to our work with a determination to put our profession in India on a par with other scientific professions of the world. No sacrifice should be considered too great to achieve this object. Remember, you are the

custodians of India's honour in your own walk of life. This is no empty platitude but a sacred object to be achieved, if India is to hold her head high in the comity of Nations. Purity in service can only be obtained if corruption is completely eschewed. Luckily our profession can claim to be free from this 'cancer'. But beware! Let it not be allowed to creep in! Our leaders are crying hoarse over this corruption. A corrupt nation digs its own grave. Are we going to allow ourselves to be the grave diggers of our beloved country? Corruption in small things leads to corruption in big things. The good name of India is in your hands and so let Honesty of a high order prevail amongst the Veterinarians.

The last of the Tri-colour should stand for efficiency. Sacrifice and Honesty alone cannot take us very far. To make everything green and fertile, efficiency with a capital "E" is needed. It is regrettable that some people merely mark time and do not exert themselves to rise to the standard required. India has no place for such men in the future. The profession must note down such men and deal with them ruthlessly. They must be exposed and society should no more countenance them.

If India is to be a power in the world, let us be disciplined through sacrifice; let us be pure in thought, word and deed and let us be thoroughly efficient through study and training and let us indulge in action and not in in-action. Let the eternal wheel of *Dharma* be ever before us reminding us of our duty to our motherland!

Wake up then those slumbering possibilities in you! Stir up those un-used inactive gifts that are in you and use them to the glory of India. That way lies our duty and let us do it to perfection. Jai Hind!

Clinical Articles

A RARE INJURY AT THE SCROTUM OF A BULL

By

H. P. KAPUR, B.S.C., G.B.V.C.,

Veterinary Assistant Surgeon, Mathura, U.P.

The subject was a Government H. Bull No. 856, aged about eight years, located at Muttra City.

The animal was reported to have been injured during a fight with one of the scrub bulls, the horn of the latter piercing through the scrotum of the former. As a result the penis of the bull was protruding out through the scrotal wound.

Examination revealed that the wound in the scrotum was inflamed, suppurating and that it was infested with maggots. It was about 2½" long and had punctured right into the sheath through the scrotum. Evidently, the horn thrust was very severe and penetrating and the penis which must have been drawn well in during the fight, came out through the scrotal wound and got fixed there afterwards. The testes were fairly well intact. One of them was slightly injured while the other was normal and drawn upwards.



Fig. 1

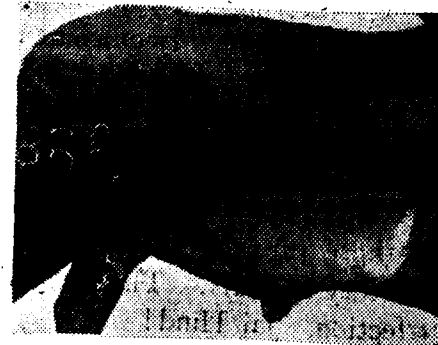


Fig. 2

There were no constitutional disturbances. The animal was eating and ruminating normally, and was passing urine freely through the protruded penis.

The wound was cleaned thoroughly, the maggots were removed and an attempt was made to put the penis back into its position, but it was impossible to reduce it owing to extensive inflammation and adhesions.

It was therefore left undisturbed, and the wound was fomented and treated antiseptically for a few days to get the inflammation down. On 4-2-47 a second attempt was made to bring the penis out through the normal opening but again it was a failure. The adhesions were very extensive, and completely immolited the penis in its present site. The attempt was therefore given up. The wound was treated in the normal way. It healed by the 15th March 1947, and the animal was discharged thereafter, as it suffered no apparent inconvenience from the abnormal position of the penis.

The enclosed two photographs giving two views of the case may be found interesting.

My thanks are due to Mr. M. R. Mahajan and Sardar Bahadur Sardar Udam Singh, Deputy Directors of the Department, for their kind interest and advice in this case.

A CASE OF ASCITES IN A BULL CALF COMPLICATED WITH RETENTION OF URINE

By

S. KANTHARAO PATNAIK, G.M.V.C.,

Veterinary Assistant Surgeon, Draksharam.

Subject:—A local bred bull-calf, aged about one year in poor condition.

History and Symptoms:—The calf was admitted into the dispensary as an in-patient on 16-6-47 with the history that it was not passing urine since 8th June and that the abdominal cavity was getting fully distended. On examination, the visible mucous membrane were pale and the temperature was only 100.2°F. The animal was completely off-feed but was eating mud and drinking a great deal of water. The bowels were constipated. Examination per rectum revealed an empty bladder.

Diagnosis:—The case was diagnosed as one of Ascites. The following line of treatment was adopted.

16-6-47. A saline purgative was given.

17-6-47. No improvement. Tapped the abdomen and removed about two gallons of the fluid to relieve the distress. Hot soap water enema was given.

18-6-47. No improvement. The abdomen was again fully distended. The calf was unable to get up and the eye balls were sunken. The following draught was administered.

R/-

Ammon. Chloride	dr. II
Potas. Nitras	dr. II
Methenamine	dr. I
Aqua	ounces IV

Mft. haust sig at once. A mild blister to the lumbar region was applied to stimulate the kidneys.

At 2 P.M. 20 c.c. of 40 per cent Hexamine solution was injected intravenously to induce diuresis.

19-6-47. No improvement was noticed. Tapped the abdomen again and removed two gollons of the fluid to relieve distress. The above draught was repeated with 2 drachms of Tr. Digitalis.

20-6-47. No improvement. The abdominal cavity was again fully distended. The calf was attempting to pass urine but it could not pass. Repeated the above draught.

21-6-47. 30 c.c. of 40 per cent Hexamine solution was injected intravenously. Tapped and removed two gallons of the fluid. By 3 P.M. in its efforts to pass urine, a few drops were found dribbling.

22-6-47. 7 A.M. The calf was found in a collapsing condition with the temperature sub-normal. Injected subcutaneously 3 c.c. of Liquor Adrenaline Hydrochloride in 10 c.c. of water. By 9 A.M. the animal stood up and passed about one ounce of urine in a stream and continued to pass urine at frequent intervals.

2 P.M. Two drachms of Calcium Gluconate in 40 c.c. aqua was injected intravenously.

5 P.M. The calf was found in great distress due to great abnormal distension. The abdomen was therefore again tapped and about two gallons of the fluid was removed. 20 c.c. of the sterile Ascites fluid was injected intramuscularly into the gluteal region.

23-6-47. To my great surprise, the calf was found eating grass eagerly and was passing urine freely. The abdomen had become pendulous.

The treatment thereafter consisted only of nourishing food and general tonics. The calf was discharged cured on 25-6-47.

SURRA—A NOTE ON ITS PREVALENCE IN EQUINES IN EAST GODAVARI DISTRICT DURING THE LAST FIVE YEARS

BY

K. MALLIKARJUNA RAO, G.M.V.C.,

District Veterinary Officer, East Godavari, Cocanada.

Incidence and distribution.—East Godavari District is one of the worst Districts in the Presidency affected with Surra. This District comprises twelve taluks, of which eight are upland areas mostly under dry cultivation and four taluks, deltaic tracts irrigated by canals. In the delta taluks of Amalapuram and Razole there are extensive cocoanut gardens. These taluks are situated between the two branches of the Godavari, Vasista and Gautami. They are cut away from the main land by the above rivers and they are bounded on the east by the sea. There are also extensive swampy areas bordering the coast in these taluks. Ramachandrapuram and Cocanada taluks are also delta areas but here cocoanut gardening is not extensive. The worst Surra affected taluks in the district are Amalapuram, Razole, Ramachandrapuram and Cocanada with 50, 126, 13, and 25 outbreak, reports respectively, during the past five years. Surra is found to occur in all the seasons of the year but its incidence is more during the fly season i.e., from July to September which is also the rainy season. The humid, warm and shady cocoanut gardens provide the best breeding areas for the flies and hence it is presumed that Surra is more prevalent in these areas. With the advent of motor traffic, jutkas have considerably declined in Cocanada and Ramachandrapuram taluks but in the island taluks of Amalapuram and Razole which are interspersed with many canals and branches of Godavari, motor traffic has not developed to the same extent as in the main land. Here people have to travel by jutkas from place to place. So the number of ponies in these taluks is more. The soil in these delta areas is alluvial. The ponies are maintained in a highly insanitary condition. Poverty and ignorance of the jutka-men mainly account for this.

Source.—It is generally believed that the bovines harbour the trypanosomes without showing any untoward symptoms and that they form the reservoir. During the period under report only 7 cases were confirmed for trypanosomiasis among bovines.

Symptoms.—As regards the symptoms exhibited, there is nothing peculiar. The usual history is that the pony was unable to perform the usual work and that the appetite was unsatisfactory. These are followed by a falling off in condition with oedema of the hind limbs and under the belly. On examination it is usually found that the temperature is up to 102°F, or even 104°F. Mucous membrane is icteric and petechiated with

running from both the eyes. At this stage when blood smears are examined, Trypanosomes are found to be present.

Treatment adopted is by intravenous injection of 10 per cent Antrypol solution. The first dose is 0.5 gramme per every hundred pound body weight and for the second and third injections half the above quantity.

During the year 1946-47, 64 cases were confirmed for this disease. Out of these, 4 ponies died before treatment, 3 during the course of treatment and 14, one or two months after the treatment was completed. Relapses were reported in two cases only and both of them died. The rest were reported to be alright.

Prevention:—Under the Glanders and Farcy Act all the reported cases were segregated and the usual sanitary measures were adopted regarding the cleaning and disposal of carcasses, etc.

If sufficient quantity of Antrypol is available it is hoped to cut short the incidence of the disease by giving all the ponies in the affected areas a monthly injection of Antrypol during the rainy season as a preventive measure. As the number of ponies are limited it may be possible to adopt the above method as is advocated in some of the journals.

PIROPLASMOSIS IN FOAL AT BIRTH*

By

H. S. PURCHASE, Ph D., F.R.C.V.S.

Senior Veterinary Research Officer, C.V.R.I., Kabete.

The following case is so unusual that it is considered worthy of record.

Two smears were submitted for diagnosis, one from a foal aged less than twelve hours and the other from the dam taken the day after foaling. The mare's smear had no parasites, whilst the foal showed intra-erythrocytic *Babesia cabali*. The parasites were numerous and large, having the characteristic pear shape with the majority arranged in pairs.

The history is best given in the words of the owner. "These slides were sent in by me. The mare (a Somali I had just bought) foaled some time early in the morning of April 2nd. Owing to the condition and colour of the foal's gums, I suspected biliary fever and sent the slide to our veterinary office right away. It was diagnosed as such and I accordingly gave the foal Pirevan injection forthwith, and sent the second smear, from the mare, the following morning; there could therefore have been no

possibility of the two slides having got mixed. The foal died within 24 hours of birth and in fact I did not expect it to live.

"As a matter of interest the mare had a horse-sickness inoculation about a week before foaling. I would say she carried the foal full time but it may possibly have been a week or ten days premature, certainly not more, if that."

The incubation period, judged from the time an equine is infected by a carrier tick and rise of temperature (with presence of numerous parasites in the blood) is usually 10 to 14 days but on rare occasions it may be as little as a week. It follows, therefore, that the foal must have been infected before birth. The fact that no parasites were seen in a thin smear of the mare's blood does not preclude her from being a carrier of *B. cabali* as having previously been native owned she probably had recovered naturally from an attack of biliary fever.

The conclusion that the infection was set up intra-uterine and that therefore the parasites must have crossed the foetal membrane barrier appears justified.

I acknowledge my appreciation to Mr. Cyril Norman, Stock Inspector, Kenya Veterinary Department, for having brought this case to my notice.

PENICILLIN THERAPY IN ACTINOMYCOSIS IN CATTLE*

By

E. F. LEWIS, M.R.C.V.S.,

Royal Veterinary College, Steyning.

Since June 1946, six cases of clinical actinomycosis involving upper and lower jaws have been treated with penicillin. The following examples are illustrative of the results obtained.

CASE 1: Six-year-old pedigree Shorthorn cow.

History and Appearance.—The whole of the left half of the lower jaw had been slowly enlarging for several months. At the time of examination two molars were displaced and mastication in general was difficult. The animal had begun to lose condition rapidly. Iodides had been tried but had merely slowed the pathological process.

Treatment.—One million units of penicillin in oil and wax suspension were injected with an all-metal syringe into eight sites evenly distributed over the enlarged area. A stout needle was easily pushed into the tissue but injection was difficult. This was continued as the needle was withdrawn. 500,000 units were given 24 hours later and a similar dose four days later.

*Veterinary Record, No. 34, Vol. 59.

Result.—As expected, this was not spectacular but in four months without further treatment, the jaw returned to normal size. The displaced teeth were extracted early in treatment and soft foods had to be provided over the same period.

CASE 2: Cross-bred red poll cow, seven years old

History and Appearance.—The right horizontal ramus had begun to enlarge over the previous two weeks. The swelling was hard and slightly tender on pressure but did not interfere with mastication. An aqueous solution of sodium penicillin was injected into three sites as above, 500,000 units in all being used. Two days later the swelling was smaller in size but the dose of penicillin was repeated. Without further treatment the enlargement disappeared in ten days and has not recurred after three months.

The other four cases developed along similar lines.

CONCLUSIONS

1. Solutions of penicillin are of value in the treatment of bovine actinomycosis when injected, early, into the actual lesion.
2. There is no advantage in the oily suspension over the aqueous solution which is easier to inject and diffuses more rapidly.
3. The injections must be disseminated as widely as possible.
4. In long-standing cases, results will be slow.
5. An all-metal or reinforced syringe must be used.

Association News

THE BOMBAY VETERINARY MEDICAL ASSOCIATION

Proceedings of the Extraordinary Annual Conference, held on 8th, and 9th October 1947 at the Bombay Veterinary College, Parel, Bombay.

The Conference was held at 4 P.M. on 8th October 1947 in the Lower Anatomy Lecture Hall in the Veterinary Hospital Compound, Parel and many members and guests from the City including students of the College assembled in the hall punctually. The chief guest Rao Bahadur J. N. Mankar, (Secretary, Humanitarian League) arrived with Mr. P. A. Mhatre at 4 p.m. He was received by the President Dr. D. S. Laud and the Secretary, Mr. G. A. Hardikar and the members of the Managing Committee; the President introduced the chief guest to the Members of

the Managing Committee, the Principal and the College staff and was conducted to the dais in the hall amidst cheers.

Dr. M. Mohey Deen, Principal, Bombay Veterinary College delivered the welcome speech (*Appendix A*). Then followed the Secretary who first read out the names of those who had sent messages expressing good success to the conference and then placed the annual report before the conference (*Appendix B*). Among those who wished success to the conference mention may be made of the following:—

- (1) Rai Bahadur P. N. Nanda, Director of Animal Husbandry and Veterinary Science, B. P., Poona.
- (2) Dr. M. D. Vaishnav, Divisional Vety. Officer, Surat.
- (3) Dr. B. R. Phanse, Vety. Surgeon, Chota-Udaipur.
- (4) Khan Bahadur, A. H. Khan, Professor of Anatomy and Animal Husbandry, Vety. College, Hyderabad (Dn).
- (5) Dr. S. N. Luktuke, Imperial Vety. Research Inst.
- (6) Dr. L. N. Ghatpande, Vety. Surgeon, Sholapur.
- (7) Dr. N. H. Laxmeshwar, Vety. Surgeon, Ratnagiri.
- (8) Dr. A. A. Chate, Vety. Surgeon, Barsi.

Dr. D. S. Laud followed the Secretary and delivered his Presidential address (*Appendix C*), at the end of which the chief guest was garlanded by the President, and the Jt. Secretary Mr. M. R. Redkar garlanded the President amidst cheers from the members. Then Dr. D. S. Laud requested the chief guest to declare open the conference and amidst loud cheers he rose to address the conference. The Chief Guest Rao Bahadur J. N. Mankar addressed the gathering with his thought-provoking and illuminating speech (*Appendix D*) for about an hour in which he gave a piece of advice to the Veterinarians regarding the course they should adopt to get full justice from the Government and declared the conference open.

This was followed by a spontaneous and interesting speech by Mr. P. A. Mhatre (*Appendix E*), who showed a novel idea of getting the wrong redressed by democratic methods under a popular Government. Dr. R. N. Naik then thanked the Guests (*Appendix F*), and all those assembled and others who helped to make the conference a success. The day's programme ended with singing of "Vande Mataram".

The following members of the Association attended the conference:—

- Drs. 1. M. R. Tagare, 2. S. S. Patkar, 3. B. A. Devarukhker, 4. V. I. Patel, 5. I. I. Nagamiya, 6. V. B. Kharate, 7. N. S. Kolte, 8. B. G. Behare, 9. T. R. Khaladkar, 10. P. G. Date, 11. R. G. Sath, 12. S. J. Khambete, 13. G. A. Hardiker, 14. S. V. Modak, 15. N. G. Bhide, 16. S. R. Rao, 17. S. P. Deshpande, 18. M. N. Palekar, 19. P. R. Dhake, 20. C. W. Fernandez, 21. L. R. Patankar, 22. V. G. Revandekar, 23. N. G. Kulkarni, 24. P. Miranda, 25. D. R. Gokhale, 26. S. R. Nadgir, 27. K. V. Divekar, 28. R. H.

Naik, 29. V. M. Kotbagi, 30. S. G. Dixit, 31. M. K. Havaldar, 32. Gulam Mahomad, 33. R. M. Kalapesi, 34. B. G. Waghmare, 35. S. P. Phadke, 36. V. N. Vaishnav, 37. S. S. Naik, 38. S. R. Kulkarni, 39. L. S. Hiregoudar, 40. A. E. Kulkarni, 41. R. C. Khare, 42. M. B. Tilak, 43. P. H. Abhyankar, 44. Dr. D. R. Chavan, 45. B. T. Chitre, 46. T. P. Nabar, 47. K. R. Alur, 48. D. B. Khole, 49. K. R. S. Aiyar, 50. H. A. Chhaya, 51. S. G. Kshirsagar, 52. G. R. Kurkibhavi, 53. M. R. Redkar, 54. C. J. Fernandez, 55. G. G. Chebbi, 56. S. R. Chadha, 57. R. G. Dharwarkar, 58. Rao B. V. R. Phadke, 59. Dr. D. S. Laud, 60. G. H. Joshi, 61. K. S. N. D. Dhakmarwalla, 62. M. H. Nagamia, 63. R. R. Tavargiri, 64. S. B. Hanchlikar, 65. V. N. Navangul, 66. R. K. Raikar, 67. M. M. Murgod, 68. R. N. Naik, 69. M. Mohey Deen, 70. H. R. Chandrashekharaya, 71. F. S. Khambata, 72. S. M. Mehitha, 73. S. V. More, 74. D. H. Bendigeri, 75. M. S. Mehta, 76. Fernandez Decruz, 77. S. Hattangadi, 78. T. G. Desai, 79. D. R. Mudholkar, 80. B. L. Purohit, 81. J. P. Damri, 82. J. H. Unarkar, 83. S. N. Gadag, 84. B. M. Phatarphod, 85. G. B. Shahane, 86. K. B. Nair.

9th October 1947.

The Subjects Committee formed on the previous night went through the following agenda at 10 A.M. and scrutinised it thoroughly.

Agenda.

1. A resolution to mourn the sad demise of Dr. B. B. Joshi, Dr. V. B. Mahabal and Miss. P. Davar.
2. G. R., R. D., No. 1088-III dated 2-5-1947 regarding (a) amalgamation of the Veterinary Department with Livestock and Dairy Development Sections and the Agricultural Department. (b) Abolition of the Veterinary Department.
3. Reorganisation of an independent Animal Husbandry and Veterinary Science Department for the Province.
4. Transfer of the Bombay Veterinary College to Poona.
5. Changing the designation of Veterinary Assistant Surgeon to Veterinary Surgeon.
6. Deputation of the Veterinary Graduates to Foreign Countries for higher studies.
7. Preferential treatment shown to Agricultural Graduates while selecting candidates for higher training abroad in Animal Husbandry.
8. Selection of personnel from outside source, possessing neither extra merit nor experience of the departmental working nor seniority.
9. Reconstruction plan for production of animals, dairy products, other animal foods to help the Province to meet the scarcity of food.

10. Regarding pay scales of the Veterinary Assistant Surgeons and the Municipal and S. P. C. A. staff.
11. Regarding preferential treatment to war-returned personnel.
12. Any other item that may be brought up with the permission of the Chair.
13. Election of office bearers for the next year.
14. Reading of Professional papers.

The subject Committee discussed and adopted the following resolutions which were later placed before and passed by the General Body of the Association. Dr. D. S. Laud presided over the deliberations.

RESOLUTIONS

1. This Association learns with great regret the sad demise of two of its members namely B. B. Joshi and V. B. Mahabal and offers its heartfelt condolences, to and sympathises with the members of their families. This Association also regrets to learn the early and sad demise of Miss. P. Davar, the Vice-President of the Bombay S.P.C.A. and offers condolences to and sympathises with those bereaved.
2. This Association deplors the policy of Government as laid down in Government Resolution, No. 1088-III dated 2nd May 1947 in amalgamating the Veterinary Department with the Livestock and Dairy Sections of the Agricultural Department and recommends that the Dairy and Livestock Sections should be amalgamated to the Veterinary Department with regard to the policy and administration under the complete control of the Director of Animal Husbandry and Veterinary Science and it further recommends that the designation of the Livestock Expert to the Government of Bombay be changed to that of Cattle Development Officer on the analogy of the Dairy Development and Poultry Development Officer. Further the Association recommends that the Director of Animal Husbandry and Veterinary Science should be directly responsible to Government and that under no circumstances this post should be held by any person other than a Veterinarian.
3. This Association resents the decision of the Government to transfer the Bombay Veterinary College to Poona without assigning any reasons notwithstanding the repeated appeals and representations made by this Association, and requests the Government again to reconsider and reverse the decision.
4. It is resolved that the present designation of the Veterinary Assistant Surgeon be changed to that of Veterinary Officer on the same lines as the Medical Officer in charge of dispensaries with a view to providing them with a status and position in public.
5. This Association has observed that step-motherly treatment is being meted out to Veterinary Graduates when deputing Officers for higher training abroad in Animal Husbandry and allied subjects. In spite of the fact that certain Veterinary Graduates that have been selected for training abroad are held back while fresh agricultural graduates have been selected and are being sent. The Association strongly deprecates this policy and recommends that justice should be done to the Veterinary Graduates in this matter.
6. This Association views with disfavour the policy adopted for recruitment to Gazetted posts, ignoring the claims of the people already in service.
7. It was resolved that the attention of the Government should be invited to the previous correspondence regarding the pay scales, distinction between old and new graduates and fixing the old graduates into new scales without jeopardising their

seniority. Further resolved to invite the attention of the Bombay Corporation and the S. P. C. A. authorities in respect of this.

8. It was resolved to continue the representation to Government deploring the policy of preferential treatment to war-returned candidates.

9. It was resolved that a Veterinary Officer should be in charge of salvage of dry cattle instead of Agricultural Graduate and dairy diploma holders in the interest of efficiency and request the Government to consider this impartially.

10. Resolved that the Director and the Government should be reminded to expedite the question of registration of Veterinary Surgeon's act which is still under Government consideration.

11. In view of paucity of Veterinary Assistant Surgeons in the subordinate Veterinary establishment this Association recommends to Government that re-employment may be given to retired persons in the subordinate cadre alone as a purely temporary measure, without affecting seniority and selection grades, their remuneration being equal to the substantive pay at the time of their retirement.

Election of Office-bearers for 1947 October onwards.

Dr. D. S. Laud	... President..
" T. R. Khaladkar	... Treasurer
" S. G. Kshirsagar	... Secretary.
" M. R. Redkar	... Jt. Secretary.

1. Dr. G. H. Joshi	} Members.	Dr. R. G. Sathe } Auditors.
2. " R. R. Tavargiri		
3. " S. G. Dixit		
4. " S. B. Hanchlikar		
5. " R. N. Naik		

Besides this, the Association decided to approach the Director, the Government and other public bodies as the case may be, in respect of the following:—

(a) To consider about permanent travelling allowance to Veterinary Assistant Surgeons.

(b) To consider about providing quarters on the premises of every dispensary and hospital to the Veterinary Assistant Surgeon to increase the efficiency and usefulness of the institutions.

(c) Regarding recommending to pay house rent at the rate of 15% of the pay taking into consideration the present conditions.

(d) Regarding paying Rs. 30/- per month to the Veterinary Assistant Surgeon who holds the charge and supervises the work of another dispensary in charge of a stockman.

(e) To consider the question of discouraging the programme of keeping the stockmen in charge of dispensaries.

(f) Regarding radio talks on Veterinary and Animal Husbandry subjects to be given by Veterinarians only.

(g) Regarding holding of certain posts in the Bombay Municipality by non-veterinarians.

(h) Requesting the Bombay Municipality to send their own scholars to the Bombay Veterinary College to meet their requirements.

The following professional papers, for want of time were taken as read:—

- | | |
|--|-------------------------|
| 1. Mastitis in cattle. | } By Dr. R. N. Naik. |
| 2. A preliminary study into
Corynebacterium Pyogenes
infection in animals. | |
| 3. Feeding of cattle during
famine. | By Dr. F. S. Khambatta. |

The Secretary, Dr. G. A. Hardiker, then thanked the Principal, Dr. M. Mohey Deen for having given all facilities to make the conference a success.

Dr. R. N. Naik thanked the Chairman, Dr. D. S. Laud, the Secretaries and the Managing Committee for making the function a grand success and thanked all the Members who attended the Conference to make it a success. Thus the Conference ended with "Vande Mataram Song".

G. A. HARDIKER,
Hon. Secretary,
Bombay Veterinary Medical Association.

APPENDIX A

Welcome speech by the Principal, DR. M. MOHEY DEEN

President, Chief Guest and Professional brothers,

It gives me very great pleasure to welcome Rao Bahadur Mankar, who has kindly consented to grace the function to-day. He is known by his activities, in connection with the work of the Humanitarian League, of which he is the Secretary. His association with us and our college is from very long time and he has readily attended many functions of our Association before. He has addressed the students of our college and only a few days before, he accompanied the members of the "Peace Mission" in their visit to the Hospital.

His love for animals is unprecedented and he is a ready help to them in suffering. His sphere of humanitarian work extends all over India, but the Province of Bombay which is notorious for famines, claims his special affection. When the Districts of Ahmednagar and Bijapur were ravaged by famine, he was the first to organise relief for the suffering cattle. Food and

fodder were diverted to these districts from surplus district and even free kitchens were provided for the needy people. His work in this connection with Thakkar Baapa ever remains appreciated particularly by the Agriculturists, public and Government alike. He was rightly called the saviour of dumb animals. His work particularly in connection with salvage of cattle and concentration camps is admirable.

Gentlemen, Rao Bahadur Mankar needs no further introduction since he is known to all in the veterinary profession. We are fortunate in having him this evening as our Chief Guest since he is the person who knows the aspirations and ideals of the veterinary profession and has given often free expression on the needs of the province in respect of welfare of cattle.

Gentlemen, I do not wish to stand long between you and the Chief Guest. I thank him once again for the ready consent, and the honour he has done to the association and to the profession in consenting to open the Annual Session.

Thanking you all.

APPENDIX B SECRETARY'S REPORT .

After thanking the members for their attendance, the Secretary presented the following report of the Association for the period from June 46 uptodate.

This association was founded in the year 1921 when it was known as "Bombay Veterinary Graduates Association" and the membership was only open to graduates of the Bombay Veterinary College. In the year 1929, by resolution No. 3, the association permitted the graduates of the other recognised Veterinary Colleges to become members with a view to create a better union among the members of the profession and to widen the scope for constructive work. Later on, in the year 1931, the name of the association was changed to Bombay Veterinary Medical Association to give it a more specific and definite identity.

This is the first time in Free India that our association is holding its conference and like the whole nation which has passed through the state of transition with some gain and some loss, we also have done the same with some success and some failure, hoping other for a brighter future under the constitution of a Free India, a greater opportunity for the association to fulfil its objects.

This association had many difficulties at every stage of its progress but today I am glad to say that it has survived all the blasts of adversity and has maintained its identity and usefulness. All the credit goes to the members of the association who have unselfishly helped it to come to this stage. The

association is also much indebted to the advice and encouragement given from time to time by enlightened and distinguished gentlemen of high position. In this connection I should say that I would be failing in my duty if I do not mention a few names of those who were gracious enough to open the conferences and give an encouraging lead to the activities of this association. The association is specially grateful to the following gentlemen.

1. Major Williamson, Animal Husbandry Commissioner to Government of India.
2. Sir Gulam Hussein Hidayatulla, Ex-Minister.
3. Honourable Mr. Murarji Desai, Ex-Minister.
4. Major E. S. Farbrother, Director of Veterinary Services, Bombay.
5. Sir H. F. Knight, Adviser to Government of Bombay.
6. E. W. Perry, Reconstruction Commissioner to Government of Bombay.
7. M. J. Desai, Secretary, Revenue Department.

This year we are specially fortunate in getting Rao Bahadur J. N. Manker, the Secretary of the Humanitarian League, who does not need any introduction particularly to the veterinary world. He is the person who has given the greatest expression to the sufferings of the dumb creatures and I may say that he may rightly be called the "Saviour of dumb creatures" and this is the first time we have a distinguished free man in a free country to open the conferences. The members will agree with me when I say that the choice has fallen on the right person and we are sure our road to achieve our objectives will come nearer, and nearer. The association will ever remain grateful to Khan Saheb Dhakmarvala, Rao Bahadur V. R. Phadke and Dr. D. S. Laud for the yeoman service they have rendered to the association as successive Presidents of the association.

In spite of the 'delayed' notice of this 'delayed' Annual Conference which could not be held last December due to political and communal upheaval in the country, I am glad to note that the members have now assembled in large numbers and have really decided to make it a perfect success.

After the last Annual Conference, during the period under report, the managing committee met six times, though ordinarily they meet only twice in a year in normal times. It was necessary to meet often, at times even at short intervals, as the interest of the department, profession, education and above all the interest of the members who are the backbone of the whole structure were rudely shaken.

The following few are the most important of our activities.

According to Resolution No. 2 of the last annual conference a deputation consisting of Dr. S. Laud, S. R. Chadha and the Secretary waited on the Municipal Commissioner, Bombay, regarding the revision of scales of pay of the Veterinary Surgeons employed under the Bombay Municipal Corporation. He

assured that all possible steps would be taken for the revision of scales. The association also suggested different grades of pay for different sections and the Municipal Commissioner has officially informed us that the revision of grades is under consideration of the standing committee.

According to Resolutions Nos. 3 and 4, the authorities were approached to stop the policy of granting extension and re-employment to some posts, of retired men and I am glad to say that authorities have started respecting the legitimate demand of the members.

In its Resolution No. 5 it was resolved that the facilities for higher education and specialised training abroad be given to members of veterinary profession in equality with those of the sister departments, in schemes of Post War Reconstruction. The authorities were twice approached with regard to this Resolution but I regret to say that the authorities do not appear to have taken encouraging steps though they may be intending to do so many a time.

According to Resolutions Nos. 6 and 7 the question of revision of grade, distinction between old and new Graduates, disparity and invidious distinction in pay were repeatedly taken up and a deputation consisting of Rao Bahadur V. R. Phadke and Dr. S. R. Chadha waited on the Director of Veterinary Services and convinced him about the injustice. The association later on, during the course, decided to wait on the Honourable Minister but the association was informed by the Government, through the Director, that the Government had revised the scales as recently as November 1945, that further revision of scales of pay will be considered along with the general question of revision of pay scales of all the Government servants which was under active consideration of Government and that under the circumstances, Government do not consider it necessary to grant an interview. This is in short the present position with regard to pay scales etc. The association has of course submitted the lines on which the pay scales should be fixed and the grievances of the old Graduates should be redressed.

In Resolution No. 9 the question of celebrating the Diamond Jubilee of the College was taken up and it was later decided by the College authorities that the college staff and the students should celebrate the same with the co-operation of the association and the past Graduates: hence no further action needed.

According to Resolution No. 10 passed on 3rd December 1946 by the managing committee, the authorities were repeatedly requested, in the form of memorials and letters to protect the interests of competent senior persons and not to give any preferential treatment and benefits to higher posts, particularly to the Gazetted posts, for war returned personnel and had suggested 'double' promotion and treating the war period as 'double service' as benefits to the candidates. In this connection the Government have recently asked the association to point out instances of preferential treatment to war returned persons.

During the period under report, when the association learnt that the Government was actively considering the question of shifting the Veterinary College to Poona, the matter was taken up and a deputation consisting of Khan Saheb Dhakmarvala, Dr. D. S. Laud and the Secretary waited on the Honourable Minister in-charge of our portfolio who gave a patient hearing and assured the deputationists of his sympathetic consideration along with the other cabinet members before taking a decision. The Honourable Minister had further assured that the question would be discussed with the President and the members of the association at the time of his visit to the Veterinary College but the promise was not fulfilled for reasons best known to the authorities. This matter was very actively taken up and I regret to say that the Government have recently informed the association that the matter of shifting has been finally decided.

According to Resolution No. 2 passed by the managing body on 9-7-1947 on the strength of the Government Resolution No. 1038/III of 2nd May 1947, the Government was approached to clear the points noted below:

- Whether the Veterinary Department is to be abolished.
- Whether the Veterinary Department is to be amalgamated to Live-stock section or vice versa.
- Why the designation of the present head of the department is Director of Animal Husbandry and Veterinary Science, if Veterinary Department is to be abolished.
- Whether the head of the Veterinary Department or any senior member of it, and also well wishers of the profession, were consulted in determining the policy.

Besides requesting the Government to enlighten on the foregoing points, the association has humbly suggested that an independent Veterinary and Animal Husbandry department may be organised with all its branches directly responsible to the Director who should be responsible to the Government directly. The reply in this connection is not yet received from the Government.

In addition to these most important and vital subjects, the association during the period under report passed many other Resolutions and suitable actions were taken in all the cases. It will thus be seen that the association was all along very active in safeguarding the interests of the Veterinary Profession which will be seen from the volume of work turned out which is a record in the history of the association. Besides, I am glad to say that the association never failed to keep in touch with the activities of the sister associations in the other Provinces. The association desires to associate itself with all the ambitious activities of the Humanitarian League under the able guidance of Rao Bahadur J. N. Mankar, chief guest of this evening and I am sure he will be very glad to hear this. We all know that the Humanitarian League have in the past

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acknowledged and have been acknowledging the services of the Veterinary Profession in the famine areas and salvage of dry cattle. The association is sure that the able guidance of the chief guest of this evening would help us to solve many of our naughty problems confronting the Veterinary Profession in the country and particularly our Province.

Coming to the strength of the association, I am glad to say that the association has this year 194 members as against 176 last year and enlisted 18 new members and 6 life members as against 6 and 2 last year. I thank all those who have contributed to the strength of the association, but I am sorry to say that there are still heavy arrears inspite of appeals which will be read out to-morrow as a piece of information.

I thank the President and the managing committee and all the members in general for having given me the opportunity, for serving the association and request them to excuse me if there are any shortcomings during the time. I am particularly thankful to my colleague and co-worker Mr. M. R. Redkar, the Joint Secretary for his active help.

Gentlemen, I thank you all once again for all the co-operation and encouragement you have given to me to make my task for the year a success.

G. A. HARDIKAR,
Hon. Secretary.

APPENDIX C

Presidential Address by DR. D. S. LAUD, G.B.V.C., F.Z.S., (LONDON).

Mr. President, Gentlemen, my professional brothers and students,

It gives me great pleasure to extend a most cordial and hearty welcome to you all on behalf of the Members of the Bombay Veterinary Medical Association, to an extraordinary Annual Conference, which is being held to-day. We generally hold the annual conference every year in the month of December. Accordingly we should have convened the conference in the month of December last. But, we had agreed that our annual conference should synchronise with the Diamond Jubilee of the Bombay Veterinary College, which should have been celebrated by the College authorities, who have undertaken this task, in the month of December last. We had also decided to invite the All India Veterinary Conference on that happy occasion just in the same manner as we celebrated the Golden Jubilee of the College in the year 1936, when the Bombay Veterinary Medical Association undertook the task and I was then the Honorary Treasurer. The result was that we were able to collect over Rs. 5,000 to celebrate that happy function which we did so well. I am very much pleased to state

that the response from our graduates and patrons at the time was spontaneous and liberal. However, since the Jubilee Celebrations of the College have been postponed *sine die*, we thought that it was now time to hold at least an unusual annual conference. Hence we are now meeting hurriedly at this extraordinary annual conference.

At the last two Annual Conferences of our Association (1944 and 1945) we had two very distinguished guests viz., Mr. E. W. Berry C.I.E., I.C.S., the then Reconstruction Commissioner to the Government of Bombay to preside over our sessions in 1944, and Mr. M. J. Desai, B.A., LL.B., I.C.S., C.I.E., the then Secretary of the Revenue Department to preside over our conference in 1945. Both of them were Government Officials. But to-day we have in our midst a distinguished non-official as our chief guest, Rao Bahadur J. N. Mankar, who is the Secretary of the Bombay Humanitarian League.

Dr. Mohey Deen, the Principal of the Bombay Veterinary College has already introduced our chief guest of this evening in his welcome speech. I fully associate with him in what all he has said, and I need not say more. But suffice it to mention that I have known Rao Bahadur for a very long time since my graduation from this College and during the very long period of my service of 35 years in Bombay Municipality. As the Secretary of the Bombay Humanitarian League, Rao Bahadur is very well acquainted with our ideals and problems.

It is needless for me to go into the details of the activities of our Association. Mr. Hardikar, our enthusiastic Secretary has fully narrated in his brief report the work done. However, I would like to state that we have made a very satisfactory progress in our membership during the year and also in all other activities.

Now let me give you a brief history of our *Alma Mater*. Our College was established in 1886 as a premier Veterinary Institution in India with very high ambitions by the late Mr. John Henry Steel, F.R.C.V.S., who was then the first Principal of this Premier College in this Premier City of India. If the ambitions of Mr. Steel had been fully realised our College would by now have been on equal footing with the Grant Medical College, and our Veterinary Services would have seen better days. But unfortunately as the destiny ordained, these high ideals of Mr. Steel did not materialise for reasons best known to the officials, who then held sway and power. In the year 1936, Matriculation was made compulsory for admission to the College, and from 1940, the standard for admission was raised to that of Inter-Science "B" Medical Group with three years course with advanced curriculum. Thereafter our College came to be affiliated in 1945 to the Bombay University with a Degree of B.Sc. in Veterinary Science and the curriculum has been extended to four years after Inter Science. This is

the third year since the affiliation and in this connection our sincere thanks are due to the University Commission that made a favourable report, particularly to those gentlemen who helped us towards our goal viz., Dr. B. N. Uppal, Rao Bahadur D. L. Sahasrabudhe and Dr. Erulkar, and last but not the least Mr. Chadha who was then the Principal, of the College. But for his enthusiasm and quick action, we would probably have lingered and the affiliation of the College to the University would not have been a *fait accompli*, as is the case now.

But while we achieved this goal, we now have very distressing news and that is about the venue of Veterinary Education being shifted from Bombay to Poona. In this connection we made a representation to the Honourable Minister in charge of the Veterinary Department on the 18th September 1946, submitting the following against the proposed transfer:—

(1) According to certain arrangements existing between the Government and the Bombay Society for the Prevention of Cruelty to Animals, the Bai Sakarbai Dinshaw Petit Hospital for Animals, has been appointed as an Infirmary under the Act. As such this Institution affords ample clinical facilities to the students of the College in different branches of Veterinary Services. Those facilities could not be expected any where in the mofussil, let alone in Poona.

(2) In the retention of the College in Bombay there are other very important points, which should also be taken into consideration.

(a) The Bombay City and Harbour Veterinary Department, the enforcement of the Glanders and Farcy Act, the Bombay Zoo, the Markets and Slaughter Houses, the Pinjrapoles and the Gowshalas provide great material and ample facilities for the study of Epizootic and other animal diseases in Bombay.

(b) Facilities for practical demonstration of milk, meat and food inspection and their preservation under refrigeration exist in abundance at the Milch Cattle Stables, Markets, Slaughter Houses, Dairies and Refrigeration Plants in the City. Besides according to the Government plan, the Dry Cattle Farming Scheme and the milk Supply Scheme afford ample educative opportunities.

(c) Existence of the Goat Virus Producing Depot in the College and the location of the office and Laboratory of the Veterinary Investigation Officer Bombay Province in the College premises also provide facilities for practical educative opportunities.

(d) Clinical facilities provided for the students are unrivalled in Bombay, because a very large number of horses, cattle, dogs,

birds, poultry, sheep, goats and pigs are demonstrated to the students at the Bai Sakarbai Dinshaw Petit Hospital for Animals which is the best and most elaborate Society for the Prevention of Cruelty to Animals in India.

(e) Veterinary Colleges are located in presidency towns in other Provinces for the ample facilities which these cities afford in point of scientific and clinical research. Besides the natural contact which is so necessary for moulding the character of students is unrivalled in Bombay.

(f) Several well-equipped medical and other scientific educational institutions and above all the famous Haffkine Institute and the Tata Cancer Research Institute, which are in very close proximity of the College not only provide necessary academic and scientific atmosphere, but numerous opportunities for establishing useful contacts so necessary between the Veterinary and Medical professions.

(g) Government in affiliating the College to the Bombay University appear to have taken into consideration all the clinical, scientific and research facilities necessary for the purpose, which are already existing in the college and the hospital. As the Bombay University has affiliated the College with regard to the present conditions and situation, the opinion of the Bombay University will be necessary.

(h) The importance of the College will be further enhanced if Government would see their way to establish a depot for the preparation for Sera for the human beings and for animals. These sera for the human beings in India are mainly prepared by the Bengal Immunity Company who are reported to be so full that they cannot cope with the demand. This work could be profitably started if the Government would be pleased to establish a depot with certain number of horses and other animals in the compound of the college and the Lazaretto, where facilities already exist for establishing them and carrying out this work with the assistance of an expert. Since it is learnt that the Government is shortly to open a Serum Depot in the Province, it will facilitate the work if it is located in Bombay or Bombay Suburban District as the sister institution like the Haffkine Institute.

(i) On account of the proposed scheme for Greater Bombay there will be ample opportunities, rural as well as urban and further if the proposal of Government to establish a very big dairy centre at Palghar or in the alternative in the suburban area of the

Greater Bombay Scheme, it will afford ample opportunities in Bombay itself.

- (j) Taking the above facts into consideration, my Committee beg to enlist their strong but respectful protest against the idea of proposed shifting of the College to Poona, and on the other hand suggest shifting the office of the Director of Veterinary Services, Bombay Province, to Bombay, just as the case of the Surgeon General to the Government of Bombay on point of administrative efficiency and closed co-ordination between the department and the Institution. I may add here that in the past Government proposed to abolish the Veterinary College and at another time proposed to shift the College to Poona. We had then lodged respectful protests against these proposals and Government considered our arguments with unbiassed mind and decided to retain the college in Bombay City.

After submitting the above representation, myself along with Khan Saheb N. D. Dhakamarwala and Mr. Hardiker, our Secretary waited upon the Honourable Minister Mr. M. P. Patil in the Secretariat on 15th November 1946 and discussed the matter thoroughly with him, when Sir Evan Jenkins, the then Secretary to the Reconstruction Department and Agricultural Commissioner was present at this interview. At the discussion the Minister of Agriculture gave us to understand that there was the proposal of the Government to transfer the College to Poona on account of its rural atmosphere and that facilities existed there for Animal Husbandry which was not the case in Bombay and further he gave us to understand that one of our own Graduates whose name I do not wish to disclose, had also advised him for a transfer. When questioned whether the Bombay University had been consulted, the reply was in the negative. We were also assured that the Bombay Veterinary Medical Association would be consulted before a final decision was taken, but nothing was done. If Government feel that the want of a rural atmosphere in Bombay and the need of facilities for the study of Animal Husbandry, I fail to understand why Poona alone should be selected and not any other place like Ahmedabad, Nadiad, or Anand in Gujerat, for as you all well know Gujrat is the Garden of Bombay Province, Gujrat possesses the finest breed of Kankrej Cattle in this Province, there is a Government Cattle Breeding Farm at Chharodi, and above all Anand is a big Dairy-centre. But all these factors may now be ruled out of consideration in view of the fact that there is the development of Greater Bombay in progress. Government have acquired the village of ARE in Andheri in the Bombay Suburban District for milch cattle and development of Dairies in this very large area, while the salvage of dry cattle scheme will be located at Palghar nearer Bombay. Here I may quote an extract from the note on the Nutrition work in progress in the

Bombay Province in the year 1946. Under his No. 2204 dated 9th November 1946, the Nutrition Officer to Government, Dr. Dadachanji writes as follows:—

"A big Dairy Scheme for modern dairy farmers in the suburbs of Bombay at a place called ARE (Mean Andheri) is almost nearing completion. The model dairy farm will possibly have other private dairies built round it so as to convert ARE into a further model town for the City of Bombay and its suburbs. Ultimately it is hoped that all the stables from the City and suburbs will be moved to this centre under Government instructions and supervision".

I am given to understand that this scheme has already been taken up and it will take not long for completion. When such is the case and when one of the Ministers of Government viz., Mr. Dinkarao Desai, the Honourable Minister of Civil Supplies has already this very big and important scheme up his sleeves, which will provide ample facilities for the study of Animal Husbandry in the rural areas, in close proximity to Bombay, why another Minister of the same Government that is the Minister for Agriculture and Veterinary should feel the necessity of transfer of the College to Poona simply on the grounds of want of facility for Animal Husbandry and so on. Is it not preposterous to launch into a scheme, which will cost lakhs of rupees at this stage which the Government can ill afford to spend on the purchase of land, construction of college buildings, hostels, laboratories, hospitals and the construction of the infirmary for animals suffering from infectious diseases and above all their equipments and so on at the transfer of college to Poona? On the other hand will it not be wise policy at this stage to develop the present institution, rather than spend such large amounts, which is to my mind, could be best spent and which are principally needed for problems like the development and increase of Food Production and cloth, which are at present the vital needs of the country and above all to meet the very great problem of rehabilitation of the large number of refugees, who arrived and are still arriving in this City and the Province from Sindh and the Punjab? When we again wrote to the Minister for an appointment, we received a reply from Government dated 25th August 1947 that it is finally decided to shift the college from Bombay to Poona. Surely it is not possible for us to fathom the mind of the Government in spite of the great ordeals which Government has to face in the present difficult circumstances.

Our chief guest of the evening Rao Bahadur Mankar, as the Secretary of the Bombay Humanitarian League and who is so well conversant with our ideals and problems, will agree with me and endorse my views. My humble suggestion is that the successor as the President and the new members of the Managing Committee, who will shortly assume office of the management of the Bombay Veterinary Medical Association,

may take up this question again with Government and if necessary appeal to the Central Government and agitate in the press.

The burning question of the day is about the cow slaughter and protection of the sacred cow from the knife of the butcher. Since this question was first mooted by Seth Dalmia, several views both for and against the slaughter of cows have appeared in the press, and the supporters against cow slaughter have now demanded for legislation, prohibiting the slaughter. But of all the views that have appeared in the public press, I shall commend to you the view of that Great Man of India, the apostle of truth and non-violence, I mean Mahatma Gandhi, who has written a very fine article under the caption "How to serve the Cow" in the weekly "Harijan" of 31st August 1947, the extract of which appeared in the Times of India of 9th September 1947. While dealing at length with the several problems in connection with his articles, on the question of how to serve the cow, I shall give you the summary of Mahatma Gandhi's views here:—

(1) By the Hindus performing their duty towards the cow and her progeny. If they did so our cattle would be the pride of India and of the world. The contrary is the case to-day.

(2) By learning the science of cattle breeding, to day there is perfect anarchy in this work.

(3) By replacing the present cruel method of castration by the humane method practiced in the West.

(4) By thorough reform of the Pinjrapoles of India, which are to-day, as a rule, managed ignorantly and without any plan by men, who do not know their work.

(5) When these primary things are done it will be found that the Muslims will of their own accord recognize the necessity, if only for the sake of their Hindu brethren of not slaughtering cattle for beef or otherwise. The reader will observe that behind the foregoing requirements lies one thing and that is "Ahimsa", otherwise known as Univesal compassion. If that supreme thing is realized, everything becomes easy. When there is Ahimsa there is infinite patience, inner calmness discrimination, self-sacrifice and true knowledge. Cow protection is not an easy thing. Much money is wasted on its name. Nevertheless in the absence of "Ahimsa", the Hindus have become destroyers instead of survivors of the cow. It is even more difficult to note the average quantity of milk that the cow in India yields is said to be roughly 2 lbs. per day, that of New Zealand is 15 lbs., of Holland 20 lbs. The index figure for healthy cows give up in proportion to the rise in milk yield. From the above one will realize how things stand at present and the way of improvements are necessary to be effected.

From my personal experience of 8 years as Superintendent of the Municipal Markets and Slaughter Houses in Bombay, I may state that the animals slaughtered at the Bandra Slaughter House come to Bombay from long distances. Freshly calved young buffalo cows are imported from Punjab, milked in Bombay for about 10 to 14 months until dry, and then sold to the butcher for slaughter. The best buffaloes in India are thus killed in their prime, while it may be noted that the large part of all milk supply nearly 80 to 90 per cent is buffalo milk. It may also be noted that the Municipality has levied a very high fee of Rs. 15/- per head for slaughter of a buffalo, simply with a view of discouraging the slaughter of these fine buffaloes. This is the highest fee so far known for slaughter. The cows and buffaloes are mostly of the small Deccani trotting type and come here from Poona and Sholapur Districts by train to Kurla. Thus you will observe that the type of cows and bullocks that are presented for slaughter at the slaughter houses in Bandra are of the scrappy kind and are unfit for dual purposes i. e. as milch and draught cattle. No animals are fed especially for the market, as is the case in foreign countries. The only really good grazing for the animals is during and immediately after the monsoon. The beef supply in Bombay is inferior as the weight of dressed meat of an Indian cow average about 250 lbs, as compared with, say, 700 lbs. in Australia, New Zealand, England etc. If such is the case, the question naturally crops up as to what should be done with such a type of scrappy cattle, and whether it would be economically worth while to conserve them.

While on the subject of the conservation of useful cattle from slaughter, I would like to give you an insight into the "Proposals for restriction of Meat Consumption" when as an Assistant Controller in charge of Civil Supplies Godowns of Government in Bombay. I was asked by Sir Henry Knight, the then Adviser to the Governor and who was in charge of the Civil Supply Department to express my views on them. The scheme was proposed by government. In this scheme it was proposed that Meat Ration cards should be issued to consumers and establishments on application against their agreeing to the surrender of 1 lb. of cereal food grains for every one lb. of meat ration given to them. I submitted a very comprehensive report on 19-10-1944 pointing out among other things that this exchange will be of a complicated nature in view of the fact that the consumption of cereal is far more important to allow the equivalent for the like quantity of meat as the latter will contain bones etc. and whether such a proposal will be beneficial from a nutritive point of view as a well balanced diet, rich in vitamin contents. It will be for the Nutrition Committee to work out this ratio. Further it will have to be borne in mind that the percentage of regular meat consumers, casual customers and establishments will have to be determined and ratio fixed accordingly. I do not wish to go into the whole length of this report but I suggested that instead of rationing

the meat, which involve a lot of expenditure for staff etc., apart from its complications, it will be more economical to have one meatless day in a week and follow the footsteps of Calcutta where there were two meatless days while within the municipal limits and the Cantonment of Karachi, the then Government of Sindh had introduced one meatless day in a week with effect from 7th October 1944. Further such a meatless day would not prove any hardship as there is the natural tendency amongst the majority of communities to observe one day in week as a vegetarian diet day on religious grounds which again is based on hygienic principles.

But in the meantime Government had already imposed the necessary restrictions under the Defence of India Rules under G. R. No. 9257 dated 12th June 1944 to the following effect against slaughter of :—

- (1) Bulls and bullocks physically fit and below the age of 10 years and suitable for work.
- (2) Cows in milk and cows in calf.
- (3) Young stock of the above suitable for breeding purposes.

However, under the above order provision was made, where these restrictions did not apply to the acquisitions in slaughter of such animals for a bonafide religious purpose.

Similarly under G. R. No. 9257/24 (a) dated the 12th June 1944, Government restricted the number of buffaloes to be slaughtered in Bandra, Bombay Suburban District, Kurla, Ahmedabad, and Malegaon in Nasik District. Further restrictions have also been imposed in giving quota to the butchers with a license to slaughter only certain number of cattle. There is also dual inspection of these animals both by the Government and Municipal Veterinary Officials at the antemortem examination at Bandra Slaughter house.

Rao Bahadur Phadke always had a thrust at me about the slaughter house at Bandra. Yes! we admit that the slaughter house at Bandra is very old and has become obsolete. It was built about the year 1866—1867 or so to meet the requirements of the population at that time. Capt. Flanders who was my immediate predecessor and a Vet from the Veterinary School at Toronto, Canada, very much desired to take up the improvements of our slaughter houses but from one cause or other and in view of the financial stringency, the matter was deferred although the Municipality had secured land for shifting the slaughter house from Bandra to Deonar near Chembur. When I succeeded Capt. Flanders in 1936, I immediately took up the question of improvement of the slaughter house and re-modelling the refrigeration plant at the Crawford Market knowing fully well the opposition which the meat traders of the market and slaughter house would have against the shifting of the slaughter house to Deonar. I had put up

two alternate proposals during the time of Mr. M. D. Bhat, M.A., J.P., I.C.S., the then Municipal Commissioner.

- (a) for shifting the Slaughter House to Deonar (original proposal) at an estimated cost of Rs. 29,46,735 and;
- (b) for remodelling the present slaughter house on the most modern and sanitary lines and fitted up with upto date equipment at an estimated cost of Rs. 8,49,030.

But before these proposals could finally be put up before the Municipal Corporation, the second World War broke out and the proposals had therefore to be kept in abeyance. However, before my retirement on the 29th July 1944, I had proposed the improvement of the slaughter house along with the markets in the Municipal Post War Reconstruction Scheme for which the heads of the different municipal departments were asked to formulate their proposals. I am given to understand that this question of the slaughter house is being taken up by the Municipal authorities. However, I would suggest that the Committee which will be shortly in office may take up this matter with the Municipal authorities if they so desire.

We have made considerable headway in improving the Veterinary education and the status of the Veterinary Graduates by the affiliation of the college to the University. But with regard to the prospects of the Graduates in Veterinary Science, it is very much regretted that nothing has been done by Government in this direction. There is, therefore, a necessity of not only increasing the scales of pay but also of prospect as well, for unlike other services, the Veterinary service is a specialized service, and one has to look for betterment of condition in the Veterinary Department only. The want of attention to this factor has already been reflected in the number of admissions to the Bombay Veterinary College, notwithstanding so much advertisement about free studentship, increase in the number and value of scholarships and other concessions. It is, therefore, but natural that a student before joining the college asks about the prospects the services can offer. It is very much regretted to remark that the scale of pay is in no way tempting, neither are the future prospects and promotions, as compared with those of other departments of the Government. The result is that neither the Government nor the Local Bodies are able to secure sufficient number of Veterinary graduates to fill the vacancies. In these hard days when the cost of living has increased it is for Government to see that the men in their service are adequately paid and are contented and happy. I would humbly submit for the consideration of our popular Government that the scale of pay of the Veterinary Assistant Surgeon may be fixed at the minimum of Rs. 150-5-200-10-300 and the Divisional Veterinary Officers in the Gazetted scale of Rs. 300-20-500-30-650.

I think our Graduates with all their training of four years in the college deserve this scale and what is more we shall be able to get up suitable candidates to join the profession. I therefore appeal to the popular government to consider the case in the light of the circumstances mentioned above. If government improve the lot of these servants, surely other sister services like the Municipality, S. P. C. A., Pinjrapoles and states will follow suit.

There is also considerable heart burning amongst the Veterinary Assistant Surgeons, whose seniority is not being recognised by making invidious distinction by recommending the defence service retrenched Veterinarians to higher posts. If this is done, the question naturally arises with regard to those Vets who were refused permission by Mr. E. S. Farbrother M.R.C.V.S., I.V.S., the then Director of Veterinary Services, Bombay Province, either for the sake of civil administration of the department or simply because they were not eligible to join the defence services on account of age limits. Similarly to my mind there should be no distinction made between the Veterinary Graduate in the department and have experience to their credit with the length of service in the department with the inexperienced recruits who have passed with the new curriculum, for after all experience and length of service must count. However, if the prospects are brightened and the grades are revised on the lines mentioned above, I think there will be no discontentment. As Mr. M. J. Desai, I.C.S., in his Presidential address on 28th December 1945 pointed out to us that it is always upto us to make the Secretaries understand the necessity of our demands. The senior officers, who guide the department should apprise the Secretary with full details. The proposals that we make should not be dictatorial in terms of so much staff required for a particular scheme, but should be explanatory as to the amount of benefit it would accrue to the country by saving lives of cattle and its utility to the public health.

With regard to the preventable disease of livestock, it is necessary to provide an upto date and well equipped laboratory and a serum institute not only for imparting instructions to the students but for manufacturing sera and other biological products for supplying the needs of our province. We are glad to note that this has been sanctioned.

In the light of the present knowledge for elimination of that great scourge in cattle viz., Rinderpest, Goat virus and sera vaccinations are the only remedies. We have now a central goat virus depot at the Bombay Veterinary College and further two more sub-depots have been opened and are functioning at Jalgaon and Dharwar. This is very satisfactory with the result that much work is being done towards preventive work and the immunization scheme is taken up.

It is now high time that District Veterinary Dispensaries should be provided with a microscope, for immediate diagnosis. At present the material is sent from the mofussil to the Bombay Veterinary College for diagnosis, and it takes about a week or so for the results to be known: this is obviously unsatisfactory. I am given to understand that this is under consideration of Government.

It is also necessary to have a post-graduate course instituted in our college in Bacteriology, Pathology and Hygiene including food inspection and Municipal Veterinary public health. For instance, we may have a degree in Bachelor of Veterinary Hygiene, just like the B. Hy. in Medicine, now that our college is affiliated to the University. There are enough facilities for such a course in Bombay with the large Municipal markets, slaughter house, dairies, cattle stables, refrigeration and ice plants in the city. Food inspection should not only be confined to Meat and Milk, but also should be extended to the inspection of milch cattle byres dairies fish, poultry, eggs, fruits, vegetables, refrigeration and preservation and provision stores, a vast range of field for training in public health.

We have often stressed the necessity of registration of the Veterinary Graduates. In this connection, I would again request the Director of Veterinary Services to take up the subject and not wait for all India Registration.

I do not wish to try your patience any longer. However, I crave your indulgence for allowing me a few minutes for doing my duty of thanking all those who have rendered me all their help and co-operation in carrying out the work of the Association, especially the members of the Managing Committee for their whole hearted support. I am also thankful to the guests for their kind presence this evening.

In conclusion, I have to thank again our chief guest of this evening, Rao Bahadur J. N. Mankar for very kindly accepting our invitation and spare his valuable time to preside over our function. I shall now request him to declare our conference open.

APPENDIX D

Speech delivered by the chief guest, RAO BAHADUR J. N. MANKAR,
Secretary, Humanitarian League, Bombay.

Doctor Laud and Friends,

I am much grateful to you for the honour you have done to me by inviting me as Chief Guest at the Extraordinary Annual Conference of the Bombay Veterinary Medical Association. I am surprised, however, how

your partiality of regard for me has made you to forget that you have chosen a layman for a conference of technical people. You should not be surprised, therefore, if you feel disappointed in not getting any assistance from me in your deliberations of technical matters for which you will have only to thank yourselves. I may be excused for having to differ from what has been said about me. But I am, of course, proud to feel that I am one of you in trying to serve the dumb friends and ameliorate their condition, physical and economical, and claim to be your professional brother though not technically as a Veterinary Surgeon. This feeling is responsible in inducing me to accept your invitation and while now in your midst I can safely bank on it and your indulgence, in tolerating shortcomings.

My connections and regard for my professional brothers, the Veterinarians is as old as my efforts for the service of the dumb. I have had ample opportunities to see them serving their constituency very faithfully in the face of immense odds and inequities which they are obliged to suffer, and suffer mutely, perhaps because their work lies among those who cannot speak and plead for their saviours except by mute blessings; but certainly under those who are perhaps the loudest, in ventilating the slightest injustice or discomfort and asserting their rights at any cost, I mean the custodians of administration and national welfare.

My contact with the department though begun with a fight for securing prompt measures for control of epidemics like Rinderpest and other diseases in the time of your Ex-Director, Dr. Farbrother, has since then been developed into a spirit of complete mutual co-operation and regard and has given me ample opportunities to know more of the scientific methods of saving and serving animals along with sentimental methods, to which I am pledged. I have almost been convinced that science and sentiment seldom differ in essence, provided they are considerably applied with a sense of service and sincerity. To me science seems to have emanated from sentiment, having the same humanitarian objects in view, but differing only in methods of application and I firmly believe that one without the other cannot really save the dumb animals.

During my long contact with the department and its staff I have found many of my friends sitting here as active missionaries always anxious to serve and save the dumb animals though labouring under departmental and pecuniary inequities and I am happy to say that the departmental heads have always extended full co-operation for animal welfare work done by public bodies and workers during normal and abnormal times. I may assure them that though their noble efforts and conscientious discharge of their duties may not have achieved anything substantial financially for them their services and sacrifices for a cause which is highly national and

humanitarian have achieved much for the country and have only made their case stronger, which can now demand immediate appreciation from the representatives of the people's Government, who have won the much-needed independence for our country, mainly to right the wrongs done during past centuries during foreign domination. I remind you that the strength of the struggle for independence lay only in the selfless services and sacrifices based on non-violent methods, preached and practised to this day by the Great Apostle of Ahimsa and the Father of the Nation "Mahatma Gandhi". Since such selfless services and sacrifices for the country's cause succeeded in throwing off foreign domination, there is no reason why your noble services and sacrifices for a similar noble cause of saving dumb animals should not succeed, in righting the wrongs especially by those in charge of the national Government now, whose sole aim is to restore justice to man and animals inhabiting the country.

I may also remind you that sanctity of animal life is one of the divine heritages of mankind which entitles him to hold a higher place in the creation of God. India, from time immemorial, recognised this sanctity of animal life and made it a cardinal principle of its religion. This sanctity of life translated into action by proper care and treatment of animals and thus saving them from ill-treatment, as you have been doing through the application of your science, justifies rationalism and humanity, as is borne out by the words of Ruskin that "Don't fancy that you will lower yourselves by sympathising with the lower creatures; you cannot sympathise with the higher unless you do with these". True civilization and humanity is, therefore, measured in terms of sympathy, love and mercy shown by mankind to all creatures, especially the lower ones and animal welfare workers are therefore the custodians and active missionaries of civilisation and humanity.

It is, therefore, no wonder that the cow—the symbol of Indian civilisation and humanity should figure marvellously in the history of the country through her performance in the pre-historic and pre-Vedic times. As the nebular conditions of the land settled and the civilisation dawned over the horizon of the land, quite naturally it simultaneously dawned over the mental horizons of religious seers. These formulators of religion or civilisation got a vision of the immense potentialities and mighty possibilities of the cow and defined cow and brahmini-bull, just as the cow and the bull of highest performance from scientific points of view are considered as mother and father of the herds.

India, the glory of the Globe was then literally a land of milk and honey. Sweet nectar like fountains of milk played perennial and profuse throughout the length and breadth of the country. The Nation was hale and hearty, pure and powerful. As observed by Dr. A. A. MacDonell

"to no other animal has mankind owed so much and the debt so richly repaid with a veneration unknown in other lands. So important a factor has the cow proved in Indian life and thought that an exhaustive account of her influence from the earliest times of the World would form a note-worthy chapter in the history of civilisation. But to-day the cow though yet an object of veneration, has ceased to be a fountain of milk due to various reasons known to you and me principal among which is want of care, food and adequate Veterinary aid. It has been rightly observed by Sir William Wedderburn "what country in the World has ever flourished which has neglected its cattle. We (British) boast ourselves as trustees of India, but what have we done to preserve cattle, absolutely nothing". But fortunately those days have gone and with the national Government in power, it should be and is their foremost concern to discharge their duty as trustees for the welfare of the country and humanity.

It hardly needs any mention that India is a land of distances and a land of villages subsisting on agriculture. Agriculture connotes draft especially in India where the use of mechanical power for agriculture is not suitable. Beast is superior to man in point of draft. The bullock is found most suitable to the purpose and climate and the female could be tapped for her milk. The animals whose males yielded food from fields and the females yielded luscious lactoproducts and whose fluid and solid excreta yielded fertility to the land, must naturally bear the palm. The cow thus became India's Kamdhenu and uncrowned queen of the land. It fed the land with the manure, the land fed the plant, the plant fed the man and the animal, and the man in his turn fed and cared for the animal. It is thus a cycle of Tapa, Bhoga, and Yagna, cast into motion and we have to keep these cycles into eternal motion for peace, plenty and prosperity. Even the modern civilisation of the World which is at its highest zenith in the West and especially in America owes very much to the cow. But for the cow their materialistic grandeur should be half shorn off in spite of the vast paraphernalia of their colossal means, money, munitions and machinery. Cow directly builds the Nation by sumptuous dishes of Lactoproducts for which no nation, no materialism has yet been able to devise any suitable substitute without serious detriment to national health and efficiency.

Thus cattle in general and cow in particular humanises mankind. Cow in a sense serves as barometer of country's cultural and economic level and is a sure indicator of mankind's moral and material progress. Cow and man form a link, both at a time, to swim or sink. They rise or fall together.

In eulogy of the cow as the foundation of national prosperity, you may perhaps think that I missed this function as a cow conference, but I mention this merely to impress upon you that you veterinarians are the highest benefactors of the nation and the country in as much as you have accepted

it to serve and save the cow as your profession. If cow has to live, she can give and prosper only with the help of veterinarians and their applied science. Charities cannot save them for all the times; it is their performance kept up by their being in health and free from diseases which not only can save them but preserve their dignity and divinity which has to-day only been proverbial and it is here that veterinary science and the votaries are concerned.

Reviewing the present position, it should be admitted that the treatment meted out even to the most useful animals is positively and deliberately cruel. The horse which is still the most useful animal is the worst sufferer. Cattle are subject to no small illusage even in the lands of the Hindus. Cattle are wretchedly thrashed and half-starved. Even the cows are uncared for and ill-fed. They have deteriorated in quality. In the past cow used to feed the man while to-day perhaps she eats the man. There is callous indifference on the part of the people and the State. Millions of cattle die every year of preventible diseases and many more are dragged to the slaughter houses. The home and professional industry of animal breeding is fast decaying. There is widespread paucity of milch and agricultural cattle. Those that are available are leaving a life of semi-starvation exposed to many diseases and exploitation of man. Death rate among cattle is abnormally increasing. Agriculture and production of food suffers for want of quality cattle. Hardly a spoonful of milk per capita is available out of the present milch cattle. Country is faced with a grave food shortage, starvation, disease and premature deaths. Hence this problem of Animal Husbandry and care and treatment of animals has become acute.

To-day after destruction of national and natural resources following up the last world war, reconstruction programme is being launched in the country including our Province. Let the Government realise, and I am sure they do, that no schemes of development of Agriculture and health of the people can succeed without planning to preserve and improve the cattle by launching generous schemes to reconstruct the Animal Husbandry, protect them from diseases and exploit all potentialities in the best interest of the nation.

As a member of the Imperial Council of Agricultural Research and once the member of the Provincial Rural Development Board, I have painfully observed that the subject of Animal Husbandry and Veterinary Science is not given the importance and the attention it deserves. The schemes sanctioned in the Reconstruction plans for the Province of Bombay are disappointing. Though the need for reorganisation and expansion of the Animal Husbandry and Veterinary Department is accepted and overdue steps proposed these are half-hearted and partial. It is false economy

to spare anything when country needs to grow more food, and for reason of that, protect and develop its cattle by all possible means.

From what I know of the department, its institutions and field staff I am constrained to observe that there is very little to the credit of the present Ministry so far, as reorganisation and development is concerned. Even the recommendations of the Linlithgow Commission and the Imperial Council of Agricultural Research have not been fully acted upon. I feel that this is evidently due to the fact that Animal Husbandry Department is treated as a branch of the Agricultural Department, in our Province. As a matter of fact animal breeding, husbandry, dairying, Veterinary medicine and Surgery are inseparable part of one branch of national development and should be fostered as such. Animal life being a higher form of evolution dominates over plant life for subsistence under laws of nature. Animal science is not only, not more useful and complex, than agricultural science but has built up a noble profession which is held high in the public estimation. Besides Animal Husbandry and Veterinary Science being an applied one occupies a superior position in the sphere of biological science and in rendering services to the development of a nation and agricultural country and as such has undisputed rights to develop quite independently. I wonder how the important fact has escaped the notice of our Ministers who have accepted the need of independent department even of fisheries under a Minister. If fisheries whose economic value even if developed is negligible and whose use is sectional be compared to the huge value of livestock and its earnings and its supreme and universal importance for development of agriculture and building up of a healthy nation, can be an independent portfolio under a special Minister. Animal husbandry—Veterinary Science should be an independent major portfolio under a Special Minister. The present Government should survey the progress and consider the past experience of the step-motherly treatment given to this branch by the past Government and instead of treading the same faulty beaten track, centralise this important branch under a special Minister of Animal Husbandry and Veterinary Science. In matters of such scientific departments I believe the Government should not feel shy to act upon the considered view of the Imperial Council of Agricultural Research and Royal Commission on Agriculture and other recognised Veterinary Associations, and do justice to this important branch of national development. I note from the reports of the Association and speech of the President that our Government have recently brought Animal Husbandry and Veterinary Science under one Director for which they deserve congratulations. But I hope your conference will arrive at the above conclusion and firmly approach the Government with a request for developing this branch as an independent portfolio under a special Minister so that it may have greater opportunities of serving the animals and the country. When this is achieved there should be no difficulty in expanding and developing the educative and research side as

well as application, of the science for treatment, control of diseases and results of researches to larger number of animals. To-day I find in our province that there are no adequate number of dispensaries. It is only recently proposed to abolish dual control of dispensaries and start one dispensary at least in each Taluka under 5 year plan. I wonder why the Government have not planned to take over the control of all dispensaries from local bodies at a stretch.

I believe, Government should immediately take over the control of all the dispensaries and abolish dual system in the first year of the plan with a view to bring about efficiency and uniformity of administration.

I find from the reports that there are about 970,000 cattle and about 42,00,000 sheep and goats and 5,00,000 camels and horses and the number of Veterinary Assistant Surgeons is hardly about 170 with about 154 dispensaries. It has not been possible to start dispensaries in all the Talukas and Petas not to say anything about the villages or groups of villages. Thus the Veterinary aid being given by the Government at present is negligible. Even according to the recommendation of the Royal Commission on Agriculture, made 20 years ago, there should be one Veterinary Dispensary for every 25,000 cattle though from efficiency point of view, this proportion is also very low. Yet taking it as a basis of expansion, there should be at least 540 Veterinary Assistant Surgeons in our Province. In view of this the schemes proposed by the Government in the Reconstruction Plans fall much too short even of the minimum requirements of the Province. Apart from this, the question of control of diseases calls for most urgent attention of the Government. As is well known the incidence of death due to epidemics is very great in our Province. Thousands of best useful milch and agricultural cattle are being swept away from year to year and the cultivators and the public are put to a loss of millions of rupees. Growing of food and supply of milk are seriously affected. It is the paramount duty of the state to save so many useful lives from premature deaths and to save the people from shortage of food consequent upon the loss of cattle. Luckily Veterinary Science has advanced to an extent to be able to save the animals from epidemics if adequate staff and protective vaccines and sera as well as medicines are available. It is false economy to spare money in providing for these at a stretch. Half hearted measures in this respect, not only will not succeed in stamping out epidemics but money spent in such half-hearted measures as well as in the development of animal husbandry will also be wasted. The position of cattle in the country at this juncture is critical. Country cannot afford to lose a single animal even if the present production of food is to be maintained. For growing more food as planned by Government many more quality cattle are essential. I draw the attention of the Government that dilatory and half-hearted measures will only accentuate the situation with regard to cattle in the Province and if they really intend

to do any national good of a lasting nature, it is now, and now alone, that they should provide for adequate protection to the existing cattle.

Government should not forget that the income derived from and with the help of cattle is greater than any other source of revenue. Out of the total earnings of India from all sources estimated at about Rs. 2,200 millions, income from and with the help of cattle alone amount to about Rs. 2,200 million rupees. In fact it is the cattle alone that support the Government and the people. It is, therefore, wrong for any Government, and the more so for National Government, to economise in providing means of protection and development of this important industry.

We are surprised how poor is the contribution of the state for the welfare of the cattle through veterinary departments in the country say about Rs. 54,29,000 which hardly comes to four annas and pies six per 1000 cattle per year when compared to the princely amounts spent by other countries for protection and development of cattle and milk supply. For example during 8 years from 1932 to 1939 Britain spent about 40 crores of rupees to keep up their cattle and dairy industry as a means to supply protective food to the nation, while the same Government here destructively exploited the cattle of our country and left us in a precarious condition. Let the National Government immediately by paying maximum attention and making generous grants for developing the department of Animal Husbandry and Veterinary Science as a major branch under one Minister save the cattle and the people from threatened breakdown. Apart from providing more dispensaries and larger number of stockmen under each dispensary the question of special officer and special staff for control of diseases such as Rinderpest, Tick and other parasitic diseases, Surra, Ranikhet and diseases among Dairy cattle and Disease Investigation officers with adequate number of Research Institutions in the Province, demands priority. No improvement in cattle is possible or should be undertaken before weeding out all diseases that kill them at any stage of improvement. I hope Government will be implicitly guided by the advice of the Director of Animal Husbandry and Veterinary Science and your Association which is the authoritative public opinion in this respect and sanction all measures suggested by them at a stretch instead of planning them as a long range plan.

Whenever the question of development or expansion of such technical branches is raised, Government is in the habit of evading on the ground that technical graduates are not available. I am not prepared to accept such an evasive excuse especially because Government themselves can prepare more graduates by starting more colleges and even by starting short term courses as a temporary measure. For example if one more College for Veterinary Graduates is started immediately our need for additional graduates can be supplied soon. But here too the usual reply of

the Government in the past was that students do not join the college in sufficient number. With this reply or presumption the duty of the national Government should not end. They should enquire into the causes that keep off the young men from joining the college and immediately remedy them. Apart from the question of aptitude for a particular branch of science and profession, the decisive factor in the selection of a line in life for an ambitious young man is the pecuniary side of it. The Grades offered in the past to the Veterinary Graduates were beggarly and the revised grades at present are still lower and inequitable in as much as an invidious distinction between old course and new course graduates is made. Though the requirements for admission and period of study in case of B. Sc., Veterinary are by no means lower than Bachelors in other branches of science; they have meagre chances of promotions and postings to higher posts and have no chance at all for additional earnings from professional practice. Their constituencies are poor and their patients are dumb and unruly and averse to treatment. They have larger area to look after with no assistants, no conveyance and are faced with immense difficulties and dangers of their profession. They have to thrust themselves on their constituency and make them treatment minded. They have no official status in rural officialism. Yet they have to work hard at the sacrifice of their comforts and comforts of their family very frequently in foreign areas. They are obliged to neglect the education of their children as their place is necessarily in Taluka towns and villages where there are no institutions for higher education and they have no savings to defray the heavy expenses of education in cities. Thus professionally, socially, officially and financially, a Veterinarian has a sad tale of sacrifice and disappointment. While facing all this and meekly putting in full course of services, he reaches a maximum of about Rs. 170/- or Rs. 175/- after perhaps 20 years of hard life and then he has no further chances as there are very few higher posts in the department and for whatever there are men from outside the Province or war returned people are directly recruited, dealing a death blow to the departmental career of experienced men of the department. Unless all these disabilities are removed, Veterinary Colleges can never attract students. Government should seriously consider these disabilities and inequities between Graduates and Graduates, and raise the start and grades of Veterinary Surgeons to Rs. 150 to Rs. 250/- grant special allowances for conveyance and education of their children and decide to give higher posts only to the men in the department with approved services.

Such measures alone can induce young men to follow this noble profession with contentment and turn out more efficient work. As I have observed above, anything spent on this department will more than compensate for, by saving millions of rupees worth of cattle and useful lives which, in turn, will serve mankind by labour, milk, manure, hides and what

not. I whole heartedly support the plea raised by Dr. Laud and your Association and wish that you should persistently put up your case to the Ministers and not rest content until your legitimate grievances are redressed. I have no doubt, our Ministers are well meaning and sympathetic. The very fact that they are our representatives is reassuring. They will do justice by removing this long standing cause of discontent and make the education and application of this humanitarian science, a matter of attraction to the young men of the country.

From the agenda of the Conference and the speech of Dr. Laud I find that the Government has already taken decision to transfer the College from Bombay to Poona in face of cogent reasons for keeping the college in Bombay. I do not understand whether this decision of Government is based on any grounds of development, financial or increasing the efficiency and utility of the institution. On the face of it, it seems absurd to remove fully equipped progressive college having other clinical, social and educational amenities patent to Bombay alone, to Poona where Government will have to spend huge amounts for providing buildings and expanding the hospital. Supposing the Government will do all that though not justified to do, how can the full fledged popular Sakarbai Hospital having all special of Indoor and Outdoor patients or the like of it can be created at Poona and how can 60,000 dairy cattle of Bombay be found in organised groups in close proximity for clinical purposes and study in Poona? Again the geographical importance and social as well as educational importance of Bombay is in itself a reason why the Bombay Veterinary College the only one of its kind not only in Bombay but in India should not be removed. Students from Gujrat, Kathiawar and other Provinces will find it very inconvenient to go to Poona which is already congested so far as educational institutions are concerned. If the Government thinks that Maharastra can independently support another college so far as students are concerned, they can certainly start a new college! The Government should reconsider their decision and instead decide to start one more college in the Province to produce more graduates. They should also consult the Indian Council of Agricultural Research and the Bombay University to which the college is recently affiliated.

I join in the protest raised by you on this issue not only as your friend but also as a public worker and friend of the dumb cattle.

Apart from the question of starting another college in our Province, I also believe that with a view to make Veterinary Science popular and useful among the masses, Government should start short course classes for preparing Stockmen and for giving elementary education to the sons of cultivators, cattle owners and others interested in the science, keeping admissions open to Vernacular Final students. I would also suggest that the Revenue Patils in villages must be trained to be able to render first

aid to cattle in their respective villages. Lessons on general information about common diseases of cattle and precautionary measures and first aid, should be introduced in the text books for schools in rural areas.

With regard to post-graduate training and training for special subjects both in our country and abroad preference should always be given to deserving senior members in the staff of Veterinary Department as it will give impetus to more efficient work. The policy of selecting agricultural graduates for higher studies in Veterinary and Animal Husbandry Science is suicidal for Veterinary Department and should not be followed.

I believe there are many such problems connected with the conduct of development and expansion of the Animal Husbandry and Veterinary Science Department, on which Government holds different views from the experts. With a view to consider all these questions in details and arrive at impartial conclusions, beneficial to the whole nation and its development, the Government should appoint a Committee including representatives of Animal Husbandry and Veterinary Science Department and your Association and some public Institutions like the Bombay Humanitarian League to go into all these details and recommend to the Government, ways and means to remove disabilities and secure immediate developments including starting of new research institutions in the Province for subjects like Animal Nutrition, Artificial Insemination and Diseases among Dairy Cattle.

Having advocated your case and that of your patients the dumb creatures so far as the Government is concerned, I also admit that the lack of appreciation of your noble endeavours on the part of the people is unpardonable. I charge these people and societies like Gowshalas and Pinjrapoles, who never avail of your valuable help for treatment of their domestic animals, with wilful cruelty to their dumb friends whom they exploit and yet allow them to be tortured under agencies of diseases. Such people and societies are unfit for keeping animals. This kind of neglect and indifference is no less responsible for premature deaths and deterioration of our dumb friends. Society for the Prevention of cruelty to animals and humanitarian societies should see that this sort of callousness does not go unpunished. They must compel such owners to make their animals receive regular treatment and see that the animals do not suffer. More than 10 crores of rupees are annually spent by animal infirmaries and Goshalas on sentimental methods of saving animals. If they only spend a tenth of this huge sum in giving treatment to animals without which even the best animals die, they can utilise the young veterinarians and remunerate them generously.

To you young men, I have to give my highest compliments for serving the dumb animals at great personal discomfort and inconvenience and with least compensation. You have done your part gloriously. We have won

the struggle for Swarajya which demanded sacrifices from all quarters. Let yours be a valuable contribution in the field of service, so neglected and yet of the highest national importance. Every good act is bound to be rewarded and appreciated by a just and national Government. Without any lucrative motive continue to do your noble work and justice is yours. You have my full sympathies in solution of your problems. As servant of the dumb I am bound to make a common cause with you.

Never think that you serve animals for service sake. Every human being owes them a duty and obligation. Through the service of animals we serve our-selves and God.

Mere utility and scientific points of view will not help us or will not keep up your enthusiasm. Remember that no animal in our country is useless or a burden. If they appear to be so now, we are responsible for it. We should save them, serve them and improve them. We still need more animals, but better animals. Until we can breed better animals, we have to pull on with whatever we have. If we proceed destructively the whole rural economic arrangements will tumble and the country will starve.

Along with scientific methods of saving animals by proper feeding and protection from diseases, we have got to save them from slaughter-houses. The present legislative restrictions are deceptive and leave room for fraud. Government will have to stop slaughter of cattle if they care to save the nation. Until this is achieved you have an opportunity to save maximum of cattle by rejecting them from slaughter even under the present legislation. Do your part honestly with considerations of humanity and national outlook and earn the blessing of the Dumb and the people.

I congratulate the President and Members of your Association for useful work done by you in—asserting the rights of the profession and professional brothers and also in the development of the science and the Department. It is through such organised associations and their firm fight that you will be able to get your wrongs righted. Be loyal to it and make it stronger to voice your grievances.

I am glad that your Association has decided to work in co-operation with public institutions like the Bombay Humanitarian League. You can rely on its co-operation for all endeavours to save and serve the cattle.

Thanking you once again for the honour you have done to me by inviting me as your chief guest and for the patience and tolerance with which you have heard me, I declare the Conference open and leave you to consider the important agenda which is before the Conference and to take considerate and firm decisions to enhance the interests of the dumb cattle by application of your noble science through contented Veterinarians.

APPENDIX E

Speech delivered by P. A. MHATRE.

Mr. President, Dr. Rao and my young and old friends,

When Rao Bahadur Mankar asked me to speak, I would not have liked to speak to you as I had no desire of inflicting one more speech upon you, but I take this opportunity for my own selfish gains. I have met many of you individually but I never had an occasion to meet all of you together in such a grand gathering. I could not have had an occasion to meet the younger friends who are just launching on their self sacrificing profession. Having met you now I take this opportunity of thanking you all for the help that you have rendered to us many a time to treat all our cattle without any compensation whatsoever. Yours is a grand profession. An ordinary medical practitioner, however, inadequately he may be paid, can always look forward to the thanks that his patient gives, to the gratefulness that patient's relations express when the patient recovers from the illness that assails him. In your case you neither receive thanks of your patients nor are you in a position to get the benefit of the praise from grateful relations. In these days you are actually paid much less than a labourer is paid. Not that, I despise the labour or value the labour less when it is made with brain, but I do think that the labour follows the plan put forward by brain and that a brain worker is worth his meed, and he should be paid adequately to keep him in comfort and to allow him to pass his old age with ease. That is what he deserves. Therefore when I heard your Secretary and also your Chairman complaining about the pittance with which you are paid in Government service, my heart went out to you. You have many disadvantages with which to struggle. The distances that you have to travel to meet your patients and to treat them are enormous. The places where you have to stay in order to be easily available to the dumb creatures are generally far away from the society of men. With all these shortcomings and disadvantages you have nobly struggled and the old amongst you that enthused the younger to take up the practice of this selfless devotion to the cause of dumb creatures, deserve thanks. On behalf of all the institutions which require your help and on behalf of all the dumb animals who come within the chain of your practice, I thank you all.

The other matter which came to my knowledge while I sat here listening to the lucid and the eloquent reports of your Chairman and Secretary was that the Government intended to transfer your College from Bombay to Poona. In this matter a thought occurred to me. Has there ever been a transfer of a noted educational institution from one city to another anywhere else? I thought myself what would happen if Government of England for instance were to think of transferring the Cambridge and Oxford Universities from their present site to an admittedly better populated and more magnificent town of London. Would people sit quiet and listen to such a

proposal: Would the learned who have passed through the portals of these great ancient institutions allow the institutions to be transferred from their hoary and hallowed place to one that is new? I thought, is there really an instance of this nature anywhere in the world where noted seat of learning is transferred from one place to other? Then why should this institution of veterinary knowledge respected throughout India serving not only the Province but many other parts and States by turning out selfless workers and friends to dumb creatures, having its history going back to last sixty years, provided with all the facilities and equipment necessary to conduct the institution of this type, being in the midst of one of the greatest cities in India or probably the greatest city if we take into account the present influx of number of refugees in our midst, having all the facilities of number of breeds of milch cattle, variety of horses and other animals, and also having in our midst a well equipped and well kept zoo which shelters a fauna of all climes, situated next to one of the biggest veterinary hospitals in the Presidency, having been so fortunate so as to be in the Communication centre of the whole of India, having a climate which is all the year round equable and pleasant, be transferred from its present site to Poona, where admittedly there is not a good veterinary hospital, nor variety of animal population, nor the facilities of transport and communication, nor are the equipment and supplies so easily available. Instead why not allow it to remain where it is? Nor is this the only thing that came to my thought while I sat amongst you. I said supposing this institution were really transferred to Poona, was it possible that it can be developed into a first class institution? Was it possible to transfer all its facilities and comforts to that institution in Poona? Was it possible to do it as cheaply as it was possible to modernise this self-same institution with but a trifle of expenditure? I compute that at the minimum the transfer of such an institution would cost the Government not less than Rs. 50,00,000/-. It may cost the Government more and it will not give to the students a fraction of the facilities of study and observation and the comforts that Bombay Institution is giving and is likely to give if preserved and modernised. When I thought of Government spending this huge sum in days when such huge sum can be utilised for more productive purpose than satisfying the whims of an Officer or launching on a programme of an improvement by breaking and destroying all that is old and trying to rebuild on ashes of the old Institution another institution emulating the magnificence and surely the fate of Fatehpur Sikri. I said to myself is this wise? After all when Government itself undertakes to spend such huge sums whose money do they spend? I say, my friends, the money spent by the Government so lavishly are your own moneys or the moneys of the tax-payers and herein lies your hope, that if the Government is so quick to spend moneys of the tax-payers on fruitless tasks, the tax-payers should have something to say in this matter. In these days of democracy, it would not be difficult for you to carry your appeal from the obdurate Government to the people and ask them to help you in this struggle of rights against the wrongs. How this can be done can

be understood by looking to what happened or what was happening to another institution in this city. The Government that was at that time working for the avowed good of the people, decided, as you my friends know, to close the Bombay Arts School. This school, which they proposed to close, had served not only the Province of Bombay loyally but had made a landmark throughout the whole of India, by fine pieces of art and extraordinary skill that they brought to bear upon their work. Even the murals now in the Council Hall of the Central Legislature have been painted by School of Arts students. It would not take you long to find out the evidence of their work in beautifying and ennobling the town and island of Bombay. You have to look to fine carvings on buildings like Victoria Terminus, Bombay Municipality and many other fine buildings which the city boasts and which would not have been beautiful monuments of art unless the Bombay Arts School students had poured all that they know in moulding its beauty and chisling its lines. This matter of closing the Arts School was taken up by Arts Students who agitated and obtained public support the result was that ultimately the Government had to revoke their decision to close the Arts School and that Arts School is still here in this city amongst you in your midst. I can well understand that some of you older friends who are enmeshed in the Government Departments may not be in a position to lead such a struggle with complete freedom but this is no reason why my young friends here who are launching upon their career and who owe it to their mother institution should not see that it is not despised and broken when she can be improved and ennobled by their efforts. I therefore appeal to these young friends to put in all that they can in this struggle and allow the public to see the utility of the institution and ceaselessly carry on the propaganda until such time as the Government decides to maintain this institution in this city.

Once again, my friends, the old friends who have helped us and the young friends who give promise of helping us, all of them together and singly, I thank you. I thank you on behalf of dumb creatures whom you have been serving and whom you are likely to serve. Because the dumb creatures cannot express their thanks, I whose lot has been cast amongst them have to thank you on their behalf and again request you to carry on your noble profession of helping them.

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APPENDIX F

Thanksgiving Speech by R. N. NAIK, G.B.V.C.,
Bacteriologist, Bombay Veterinary College, Parel, Bombay.

President, R. B. Mankar and gentlemen,

It gives me great pleasure to propose a vote of thanks on behalf of the members of the Bombay Veterinary Medical Association to the President Rao Bahadur Mankar who has identified himself with our ambitious aspirations and who has given us a record address to-day, and also to the other guests who have given us the pleasure of their company on the occasion of this extraordinary session. Rao Bahadur Mankar is a very busy person; he has dedicated his life for the preservation and protection of cattle life. His activities in saving cattle from the grip of famine and from the cruel hands of butchers are wellknown. He has, in these days of scarcity of animals, volunteered to cooperate with the Government with the purse of the Humanitarian League, to save cattle by salvaging them to the up-country. He is thus doing a great service to the livestock which are essential for the prosperity of the Country. He has been a familiar figure in all meetings of the Indian Council of Agricultural Research, Delhi and in other meetings in this province held in connection with the salvage of and affording protection to cattle. Among the non-veterinarians he is one of the few who has studied the question of cattle thoroughly and is doing substantial humanitarian work all on charitable basis for the conservation of cattle life as silently as possible. We really feel proud and honoured of his presence here today as the goal of his League and of our association is identical although the ways adopted by each are different. Our Hearty thanks are due to him.

We are inspired with confidence and hope at the presence of Dr. Mohey Deen and Dr. Chadha and also of the presence of the retired men viz: Khan Saheb Dhakmarwala who is our living original preceptor of Veterinary Science in India, Rao Bahadur Phadke, the first Indian Principal, and then the Director of Veterinary Services of Bombay Province and Sind, Prof. Miranda, Dr. D. S. Laud, Dr. Khaladkar and others. Without the goodwill, co-operation and healthy guidance of these men this association is not in a position to make a headway in asserting its rights and status; our Hearty thanks are due to them.

We feel very grateful to Dr. Koppikar and Mr. Mhatre and other guests who in warmly responding to our invitation have given us the pleasure of their company here to-day. I thank them heartily.

President and gentlemen, we consider that this extraordinary session is a momentous one. For, not only we have to transact a heavy agenda of business affecting the vital activities of the profession but also we are

meeting for the first time in the history of the Province in an atmosphere of freedom of thought and expression and of post war plannings. The freedom which our leaders have secured for us has made every Indian to be conscious of his rights because of his moral dignity as a person. This dignity of personality demands effective opportunity for normal life, growth, opportunity, happiness and security. If this is true of every Indian it should also be true of this Association. This body of Veterinary Scientists as it is constituted with the avowed object of furthering the case of Veterinary Science in this Province has also secured an opportunity for development into a dynamic body of strength and power in all matters of Animal Science as in Western Countries. In the past, many of our resolutions and deliberations, appeals and advice sent to the Government have vanished in thin air, but I am certain that if we act wisely and tactfully we will be able to come into our own for being recognised by present democratic Government as an indispensable advisory body in the matters of breeding animals on the principles of preventive medicine or in other words maintaining a balance of health with a view to the production of animals, animal products, dairy products and poultry products. We have the knowledge, we have the enthusiasm and energy to play our part commensurate with the importance of our Science towards the production of protective food urgently needed for the country. We want opportunity; we want facilities; we want wide expansion of the department; we want research institutions in every branch of Animal (Husbandry and Veterinary) Science; and we want men, equipment and tools too. I have very strong reasons to attribute the existing poverty of India to the neglect of the Animal husbandry and Veterinary Science and if things are allowed to drift in any manner which is not based upon science I am afraid worse days will be ahead. For "Poverty is the parent of revolution and crime" says Aristotle. It is recognised in all prosperous countries that the prosperity is dependent upon the cattle wealth. The Editor of the Journal of American Veterinary Medical Association says in the last August issue that "The difference between the progressive West and the backward East is rinderpest". i.e. the progressive Western Countries directly attributed their prosperity to the eradication of rinderpest which they have achieved by rational planning. Truly it is stated that milk and honey flow in abundance where the Veterinary profession is well developed.

In the end, I thank our popular Principal, Dr. Mohey Deen and his staff for the co-operation extended in making the function a success. I thank the Principal and the Secretary, Society for Prevention of Cruelty to Animals for allowing to use this hall.

Again, on behalf of the members of the association, I offer hearty thanks to you all, for so kindly honouring us by your presence to-day in such an abundant measure.

Agriculture and rural Development
Department,
Bombay Castle, 28th August 1947.

From

The Assistant Secretary to the Government of Bombay,
Agriculture and Rural Development Department.

To

The President,

Bombay Veterinary Medical Association.

Subject:—Veterinary Department Preferential treatment to war
service personnel-in

Sir,

With reference to your letter No. 185 of 47 dated the 22nd July, 1947,
I am directed to request you to give instances where Government have not
cared to respect the grievances of the Veterinary Assistant Surgeons of the
Civil Veterinary Department and have upheld the claims of war returned
personel of the Department for appointments to higher posts without any
justification.

Your obedient servant,

(Sd.)

Assistant Secretary to the Government of Bombay,
Agriculture and Rural Development Department.

Agricultural and rural Development
Department,
Bombay Castle 25th August 1947.

From

The Assistant Secretary to the Government of Bombay
Agriculture and Rural Development Department.

To

The President,

Bombay Veterinary Medical Association.

Subject:—Bombay Veterinary College Shifting of - to Poona.

Sir,

With reference to your letter No. 184 of 47, dated the 1st August, 1947,
I am directed to say that Government has finally decided to move the
Bombay Veterinary College from its present site at Parel to Poona.

Your obedient servant,

(Sd.)

Assistant Secretary to the Government of Bombay,
Agricultural and Rural Development Department.

UNITED PROVINCES ANIMAL HUSBANDRY STOCKMEN'S ASSOCIATION.

The first Annual Conference of the United Provinces Animal Husbandry
Stockmen's Association was held at Meerut on the 14th, 15th and 16th
July under the presidency of Mr. P. L. Sharma, Livestock Officer, Meerut.

88 Delegates attended the Conference. On the first day Mr. Mohd
Ayub Khan, the Chairman of the Reception Committee, welcomed the
members after which the President of the Conference delivered his
Presidential address. In the course of his address, the President appreciated
the enthusiasm of the organisers of the Conference in arranging this
conference in the face of present day difficulties and hopes that such meet-
ings would prove very useful to everyone. He then stressed the importance
of livestock to an agricultural country and pleaded for untiring efforts to
make the province self-sufficient in respect of livestock. The illiteracy and
conservatism of the masses, he said, was difficult to deal with but that
should not dishearten us. He finally sympathised with the Stockmen in
their low scales of pay as compared with those obtaining in other depart-
ment of Government and expected that they would get sympathetic
consideration at the hands of the Government on proper representation
through the Association. Lastly he wished the conference every success.

The remaining days of the conference were devoted to business
meetings of the Association for passing of accounts election of office-
bearers and the passing of rules and bye-laws of the Association. Shrimati
Prakash Wati Sood, M. L. A., was elected President, Mr. P. N. Misra,
Vice-President and Mr. J. P. Saxena General Secretary.

There were also interesting papers that were read at the Conference
one on cattle Breeding by Mr. J. P. Kashyap and another on 'Importance
of Animal Husbandry in Nation Building' by Mr. R. R. Pal Sharma.

After passing a number of resolutions for the improvement and the
status of the Stockmen, the Conference ended.

THE MADRAS VETERINARY ASSOCIATION Provincial Veterinary Conference

Under the auspices of the Association, the Eighth Provincial Veterinary
Conference will be held at the Madras Veterinary College on the 26th, 27th
and 28th December 1947.

Sri G. R. Viswanathan, G.M.V.C., P.G. (Edin. & Mukt.), Principal of the
Madras Veterinary College, is the Chairman of the Reception Committee,

and the Honourable Minister for Development, Government of Madras, is being approached to open the Conference. The Reception Committee membership fee is fixed at Rs. 5/—and the Delegate fee at Rs. 3/—. Sri S. Vancheeswara Iyer, Assistant Disease Investigation Officer (Poultry) and Sri. V. Panduranga Rao, Assistant to Lecturer in Anatomy, as the Secretary and Treasurer respectively for the Conference. Any resolutions to be moved in the Conference should be sent to the Secretary not later than 20-12-47 and any remittances in connection with the Conference may be sent to the Treasurer. Those who are not members yet are requested to become members and it is hoped that a large number of the members will enroll themselves as Reception Committee Members or as Delegates and make the Conference a success. Professional papers, if any to be read in the Conference may be sent sufficiently early to the Secretary so that they may be placed before the Committee for their scrutiny in time.

Madras Veterinary College, }
28th Novr, 1947.

M. R. SUBRAMANIA SASTRY,
Secretary.

Review

Veterinary Anaesthesia.—John G. WRIGHT, M.V.Sc., F.R.C.V.S., Second Edition, 1947 Pp. viii 218. 62 Figs, *Publishers Messrs. Bailliere, Tindall & Cox, London, W.C. 2. 12s. 6d.*

"The success of a Veterinarian as a Surgeon depends in no small degree on his knowledge of anaesthetics and his skill in their administration". These words of the author in the preface to the first edition of this book are very profound and true and will be agreed to by every practising Veterinary Surgeon. We are sure that this book on Veterinary Anaesthesia by Mr. John G. Wright, who is an expert in the line, would be found eminently useful by every practitioner. The subject has been dealt with in an excellent way, with attention to the minutest detail which is to be appreciated very much, under various heads like local, regional, general, etc. And the various agents that are recorded and used in these methods have also been considered at length. The author is a great believer in the Chloral Hydras as a narcotic agent and therefore devotes one full chapter for discussing its administration and its dosage. In spite of his strong advocacy, the experiences of many in the field and also of the Army authorities during the recent war, have been otherwise. On the whole Veterinary Anaesthesia is a very useful publication which should be in the hands of every practising Veterinary Surgeon.



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