

The Indian Veterinary
Journal

1947- May
VOL. 23. 6. 6.

JL
KZ m2, N24
N 47.23.6
79827

52/

THE
INDIAN VETERINARY JOURNAL

PUBLISHED BI-MONTHLY

(THE JOURNAL OF THE ALL-INDIA VETERINARY ASSOCIATION)

26, WALLAJAH ROAD, MOUNT ROAD P. O., MADRAS (S. INDIA)

Vol. XXIII

May, 1947 455

No. 6

Stilboestrol Dipropionate
solution in oil M&B



Stilboestrol and its dipropionate fulfil the functions of the natural oestrogenic hormone. Its uses in veterinary practice include the treatment of anoestrus due to sub-normal ovarian activity and pyometra in cattle. It has also been used for the induction of lactation in goats and heifers and symptoms of false pregnancy in bitches.

Rubber-capped bottles of 5 c.c. (1 mgm. per c.c.)
Rubber-capped bottles of 10 c.c. (10 mgm. per c.c.)

MAY & BAKER LTD.

Distributed by MAY & BAKER (INDIA) LTD.



JL
K2.M2, N24
N47.23.6
79827

PNEUMONIA
MASTITIS
METRITIS
CYSTITIS
PYELONEPHRITIS
NEPHRITIS
ETC.

Competent Chemotherapy with **CIBAZOL**

IN VETERINARY PRACTICE

Systemic Administration

Cibazol Tablets 0.5 g.
Bottles of 20, 100 and 250
Cibazol Ampoules 5 c.c.
Boxes of 5 and 20

Local Application

Cibazol Ointment 5%
Containers of 40 gm.
Cibazol Powder
Containers of 20 g., 100 g. and 500 g.



SOLE IMPORTERS
CIBA (INDIA) LIMITED.
G. P. O. Bag No. 1966,
BOMBAY

Published Bi-Monthly
Vol. XXIII

May 1947
No. 6

THE INDIAN VETERINARY JOURNAL

(The Journal of the All-India Veterinary Association)



Editor :

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

Veterinary Surgeon, Madras.

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

NOTICE

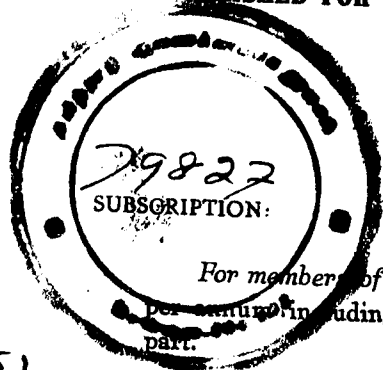
The Indian Veterinary Journal

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

PUBLISHED FOR THE ALL-INDIA VETERINARY ASSOCIATION

EDITOR:

SRINIVASA RAO, G.M.V.C.



For members of the profession and students:—Rs. 4 or 6s. 8d.
per annum including postage, in advance. Re. 1 or 1s. 8d. per
part.

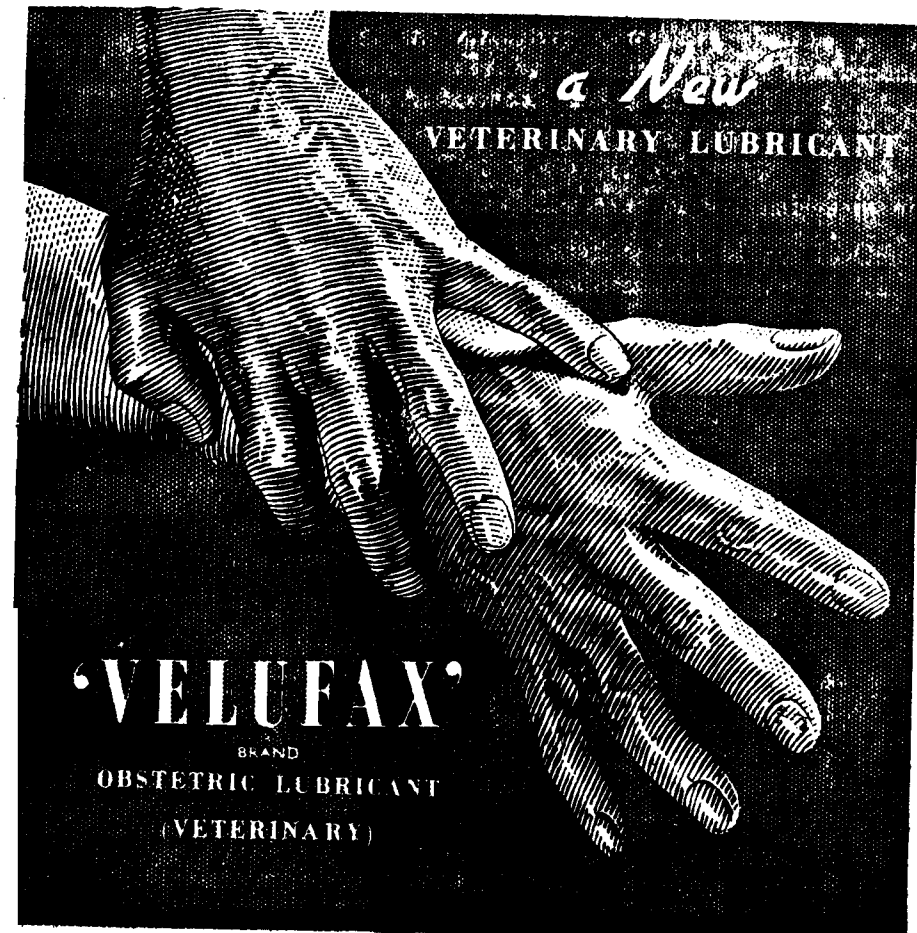
For others:—Rs. 8 or 13s. 8d. per annum in advance, or
Rs. 2 or 3s. 4d. per part.

1. Original Articles, Clinical Notes, Society Reports and
Notes on interesting cases are invited. Contributors of Original
Articles will receive 10 Copies of their papers free if wanted.

2. All Editorial Communications, Reports and Books for
Review and Exchange should be addressed to the Editor.

3. All contributions should be sent to the Editor. Contri-
butors are requested to sign their contributions. All communi-
cations must be authenticated by the name and address of the
writer whether intended for publication or not.

4. Members who do not receive the Journal regularly,
or who find it wrongly addressed, are requested to communi-
cate their correct address to the Editor at once. Non-receipt
of a particular issue should be intimated before the receipt
of the subsequent issue. If not those copies will be charged
for.



'Velufax' brand obstetric lubricant is a bland, pleasant-smelling cream for
application to the hands and arms prior to obstetric and rectal manipulations.

DEODORANT—neutralises unpleasant odours from rectal and vaginal contents,
post-mortem material, etc.

ANTISEPTIC—forms an effective barrier against skin infection.

EASILY REMOVED—readily washed off after use, without soap and in cold
water if necessary.



BURROUGHS WELLCOME & CO., LONDON

(THE WELLCOME FOUNDATION LTD., INCORPORATED IN ENGLAND)

AND COOK'S BUILDING, HORNBY ROAD

BOMBAY



SELECT OPINIONS ON VETERINARY PRODUCTS

CHEMOTONE (Cattle Tonic)

"Twelve thin animals were given Chemotone Tonic for one month. The General Condition of the animals appeared to have improved"—Director of Dairy Research, Govt. of India, Bangalore.

"This preparation has been tested by me in my practice during the last year, in cases of Mastitis, Agalactia, Parturient, Eclampsia and allied complaints arising after parturition. Under field conditions it is difficult for any veterinarian to be able to get a preparation for dispensing in such ailments. I therefore from my use of these medicines can well recommend this to any veterinarian for use in his daily practice"—Veterinary Asst. Surgeon, Benares.

HORSE CONDITION POWDER & CHEMOTONE

"The medicine Condition Powder for ponies and Chemotone which you have sent in dozens are being used by my clients under my personal supervision and I found that Condition Powder is very useful for ponies in Tropical Climates like India where diseases of Gastro-Intestinal type are common"—The Veterinary Assistant Surgeon, Nagaram.

MANGE OINTMENT

"Veterinary medicines which you have sent us, are being used in the Maharaja's Kennels by our Veterinary Surgeon. He thinks that Mange Ointment and Ticksol seem to be useful. We require rather large quantities of the above for our use."—Maharajah's Office, Pithapuram.

YOKEGALL OINTMENT

"Your Yoke-gall ointment is giving good result"—Veterinary Hospital, Parvatipuram.

TICKSOL

"The Tick Destroyer sample is of great use and a successful cure I have found and there is a great demand from my clients for same—Veterinary Dispensary, Vyara."

"It is with great pleasure that I inform you that the Ticksol sample sent by you has given very satisfactory results"—Veterinary Asst. Surgeon, Haliyal.

LIVINGALL (for Rinderpest) & CHEMOTONE

"I tried in 8 cases and in all cases the buffaloes were completely cured. I was entirely satisfied with the medicine. I wish every village keeps a stock of this very useful Medicine as a safeguard against this terrible scourge. I also found your Chemotone very useful"—S. L. Paradkar, B.A., LL.B. Ellichpur.

"Livingall is tried by the Express Dairy. I examined the animal and gave instruction to the stable keeper personally before 3 days. Today I was informed that the animal is now feeding well"—Dr. H. N. Chatre, Bombay.

GLYCOSOL (for foot & mouth disease)

"Trials were again undertaken during the present outbreak of Foot & mouth among the dairy herd here. Glycosol tried as a mouth wash has been found to be efficacious"—Imperial Dairy Dept. Govt. of India, Bangalore.

For more particulars, please apply to:—

Manufacturers:

THE CHEMICALS & FERTILIZERS MFG. CO., LTD.
POONA 2.

Distributors all over India.

When writing to advertisers, please mention this Journal.

PREMIER HOUSE FOR
VETERINARY INSTRUMENTS & APPLIANCES
HOSPITAL & LABORATORY FURNISHERS
HOSPITAL SUNDRIES

Repairs of All Instruments and Appliances Undertaken

Send for our Price List

MESSRS.

CIRUGIA DE LUX

Manufacturers, and Importers of

SURGICAL AND VETERINARY INSTRUMENTS
AND APPLIANCES; HOSPITAL AND
LABORATORY FURNISHERS

SIALKOT CITY (INDIA)

ENTERO-QUINOL (IODOCHLOROXYQUINOLINE)

Specific for all forms of Amoebiasis and other intestinal infections.

It is chemically 5 Chloro 7 Iodo 8 Oxyquinoline, practically odourless, tasteless, and insoluble in water.

Tubes contain 20 tablets of 0.25 grm. each.

EAST INDIA PHARMACEUTICAL WORKS LTD.
TOLLYGUNJE, CALCUTTA.

When writing to advertisers, please mention this Journal.

ALBERT DAVID LIMITED

(VETERINARY DEPT.)

SIOLAN Sterile milk protein injections. **FEEBLE STIMULATION-MILD & MODERATE REACTION** Invaluable in cases of eczema, ulcers, offensive discharges, glandular affections, genito-urinary diseases.

SIOLAN cum IODINE with .04% colloidal iodine to bring about speedy inflammatory resolution. For cases of glandular fever, endometritis, salpingitis.

COLLO-MANGANESE .25% injectable solution. Greatest colloidal activity, readily absorbable. In strepto-and staphylococcal infections and suppurating conditions.

SIONAMIDE OINTMENT 5% of p-amino-benzene sulphonamide and .40% of pure codliver oil with standardized vitamin A contents.

For the treatment of wounds where the action of sulphonamide is strengthened by vitamin A accelerating granulation and growth of epithelium.

LITERATURE ON REQUEST

ALBERT DAVID LIMITED

15, Chittaranjan Avenue :: :: CALCUTTA

When writing to advertisers, please mention this Journal.

The Indian Veterinary Journal

(The Journal of The All-India Veterinary Association)

Vol. XXIII

MAY, 1947

No. 6

CONTENTS

PAGE

I. General Articles

- A Check-list of Parasites, (Classes—Trematoda and Cestoda) in the Department of Parasitology, Madras Veterinary College Laboratory.—By S. V. Mudaliar, G.M.V.C. and V. S. Alwar. B.V.Sc. ... 423
- Contagious Caprine Pleuro Pneumonia—Some field observations in Madras Presidency.—By G. R. Viswanathan, G. M. V. C. P.G., M. Ramakrishna Pillay, G.M.V.C. and S. Venkatarama Ayyar, G.M.V.C. ... 435
- Pasteurisation of Milk.—By M. S. Rajendran, G.M.V.C. ... 447
- A Short Note on the Sheep of Nilgiris.—By U. S. Aswathanarayanan, G.M.V.C. and S. Ramanarayanan, G.M.V.C. ... 454

II. Editorial

- Wanted—An Indian Veterinary Council ... 457
- Administrators and Administration by Rao Bahadur R. Swaminathan, B.A., G.M.V.C. ... 458
- Retirement.—H. C. Ganjulee, B.H.V.R. ... 461

III. Clinical Articles

- Prostatic Enlargement in a dog. Treatment with Stilboestrol Dipropionate.—By Francis Joseph, G.M.V.C., P.G. and S. N. Vaidyanathan, G.M.V.C. ... 463
- Tape Worms in Canines—Therapeutic value of remedies used.—By S. Ramanarayanan, G.M.V.C. ... 465
- Sulphonamides in Foot and Mouth Disease of Cattle.—By P. C. Tripathi, B.Sc., G.B.V.C. ... 467
- Bovine Thileriasis.—By B. Ramaiah, G.M.V.C., Vizaḡapatam ... 470

IV. Association News

- United Province Veterinary Association—Proceedings of the 14th Annual General Meeting ... 471
- Bihar Veterinary Association—Proceedings of the Ninth Provincial Veterinary Conference and Rules ... 485

V. College News

- Madras Veterinary College—Final Diploma Examination Result, March 1947. ... 498

CONTENTS—(contd.)

Bihar Veterinary College—Final Diploma Examination Result, March and April 1947	...	498
VI. Obituary		
S. Krishnamurty, G.M.V.C.	...	500
N. Venkataratnam, G.M.V.C.	...	500
Ganga Singh Rawat, G.V.Sc.	...	500

Reliable Veterinary Products

For Passive Immunisation

TETANUS ANTITOXIC SERUM

2000 and 6000 I. U.

For Active Immunisation

TETANUS ANATOXIN

in 25 c.c. and 50 c.c. phials

For Active Leucocytosis

NUCLEIN

10% solution of nucleinic acid in 5 c.c. ampoules

BENGAL CHEMICAL

CALCUTTA

BOMBAY

TOXINATE:—Curative treatment for Rinderpest, Enterotoxin, Black-quarter, H.S., Anthrax-Braxy, Pleuro-pneumonia, Surra, etc.

Used with success in maunds.

Price Rs. 60/- per maund, loose packing

LEUCOCYTONE:—Prophylactic treatment for contagious and infectious diseases. Valuable where sera and vaccines are not available but cheaper.

Price Rs. 15/- per maund, loose packing

Stock ever ready

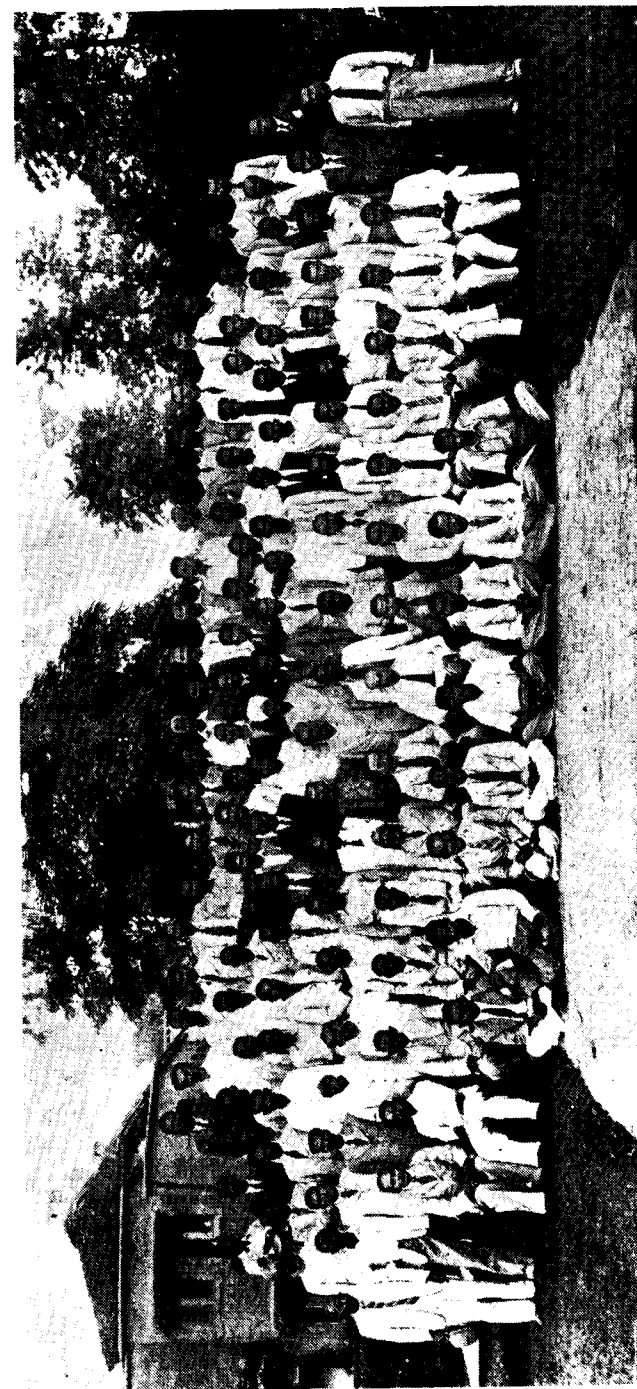
Invented by DR. A. M. MEHTA, G.B.V.C.

Tel: Address:
"LION"
Ahmedabad

Apply to: **MEHTA BROTHERS**
1706, Khadia New Road, Ahmedabad.

When writing to advertisers, please mention this Journal.

UNITED PROVINCES VETERINARY ASSOCIATION



Group Photo taken on the occasion of the 14th Annual General Meeting held in October, 1946.

BENGAL VETERINARY COLLEGE



Group Photo taken on the occasion of Farewell given to Prof. H. C. Gangulee, B.H.V.S. in December 1946.

THE INDIAN VETERINARY JOURNAL

(The Journal of The All-India Veterinary Association)

Vol. XXIII

MAY, 1947

No. 6

General Articles.

A CHECK-LIST OF PARASITES, (CLASSES—TREMATODA and CESTODA) IN THE DEPARTMENT OF PARASITOLOGY, MADRAS VETERINARY COLLEGE LABORATORY

BY

S. V. MUDALIAR, G. M. V. C.

(Lecturer in Parasitology, Madras Veterinary College)

AND

V. S. ALWAR, B. V. Sc.

(Assistant, Department of Parasitology.)

The idea of making a collection of the endo-parasites found in this part of India originated about the year 1920 when the present laboratory was fitted up. The pioneer work in this direction was done by the late Mr. V. Krishnamurthi and he was followed by other workers, no less enthusiastic, among whom, may be mentioned the names of the late Mr. M. R. V. Panikkar, Rao Sahib M. Anant Narayan Rao, L. S. Parameswara Ayyar and the present senior author.

Specimens were collected from animals in the College during post-mortem examinations, from the local slaughter house, obtained from the staff of the Civil Veterinary Department, Madras, from Muktesar, Lahore and Hyderabad in India and also from places outside India, while certain specimens have been sent from here to England, Africa and America. Still, there are gaps in some of the genera if not in the families that require filling up.

The following check-list of helminths with hosts, location and locality, with the year of collection and a short note regarding the intensity and prevalence wherever deemed necessary, has been prepared with

the idea of making a record of collection in this Department of Parasitology, and also, to indicate the regional prevalence of the various helminths. Since the collection is an assemblage of specimens that were received from the staff of the Civil Veterinary Department, Madras, for diagnostic purposes and not obtained as a result of a regularly constituted survey, it does not pretend to be of a representative character. For instance, a large number of specimens have been received from certain places while none at all from others. This does not denote an absence of parasitism at the latter places. Anyhow, the list will show the places in this province, from where the specimens were obtained and their kind.

A truly representative collection is a necessary pre-requisite for constituting control measures in the eradication of helminths.

Synonyms of valid specimens have been omitted in the list as it will not serve any purpose. A brief account of the intensity of different species of helminths is included, wherever deemed necessary.

The present paper deals with the members of the Classes Trematoda and Cestoda available in this department and the Class Nematoda will follow this in due course.

Due acknowledgements have been given to workers from whom specimens were received. The authors' thanks are due to Mr. K. S. Nair Principal of the College and Rao Sahib M. Anant Narayan Rao for the encouragement and to Mr. S. N. Vaidyanathan for his very willing co-operation and help in the compilation of the class Trematoda.

PHYLUM PLATYHELMINTHES Claus, 1880

Class TREMATODA Rudolphi, 1808

Order DIGENEA V. Benden, 1858

Sub-order PROSOSTOMATA Odhner, 1905

Family DICROCOELIIDAE Odhner, 1910

Genus *Dicrocoelium* Dujardin, 1845

D. dentriticum (Rudolphi, 1819)

Host. Goat

Location. Liver

Locality. Punjab. Kangra Valley (1937)

This specimen was obtained through the courtesy of the Principal, Punjab Veterinary College, Lahore.

Genus *Eurytrema* Looss, 1907

E. pancreaticum (Janson, 1899)

Host. Cow

Location. Intestine

Locality. Muktesar, U. P. (1923). Hyderabad, Deccan (1936).

These specimens were obtained through the courtesy of the Director, Imperial Veterinary Research Institute, Muktesar, and the Veterinary Investigation Officer, Hyderabad.

Family OPISTHORCHIDAE Luhe, 1901.

Genus *Opisthorchis* R. Blanchard, 1895

O. noverca Braun, 1902

Host. Dog

Location. Intestine

Locality. Muktesar, U. P. (1925)

This specimen was obtained through the courtesy of the Director, Imperial Veterinary Research Institute, Muktesar.

Madras. Gudalur (1941), obtained from the liver of a bitch, being the only collection from a natural case, so far recorded from Madras.

Family HETEROPHYIDAE Odhner, 1914

Genus *Heterophyes* Cobbold, 1866.

H. heterophyes V. Siebold (1852)

Host. Experimental dog

Location. Small intestine

Locality. Madras (1929)

Genus *Monorchitrema* Nishigori, 1924

M. taihokui Nishigori, 1924

M. taihui Nishigori, 1924

Host. Kite

Location. Intestine

Locality. Madras (1932)

Family TROGLOTREMATIDAE

Genus *Paraгонimus* Braun, 1899

P. westermanii Kerbert, 1878

Host. Tiger

Location. Lung

Locality. Coorg (1930)

Other hosts. Dog

Location. Lung

Locality. Madras, Calicut, Coimbatore (1934)

The finding of this lung-fluke in dogs is interesting and attempts at more careful post-mortem examinations may reveal the helminth in more localities and hosts including man.



Family FASCIOLIDAE Railliet, 1895

Genus *Fasciola* Linnaeus, 1858.

F. gigantica Cobbold, 1855

Host. Cattle, buffalo, sheep, goat

Location. Bile-ducts, gall-bladder, liver

Locality Madras (1921)

Several specimens from all over Madras Province, from all the hosts mentioned above have been recorded.

Family ECHINOSTOMATIDAE Dietz, 1910

Genus *Echinostoma* Rudolphi, 1809.

E. revolutum Frohlich, 1802

Host. Dog, Pigeon, Chicken

Mounted slides obtained through the courtesy of P. Beaver, Lawrence College, Appleton, Wisconsin, U. S. A. (1940).

Genus *Echinoparyphium* Dietz, 1909.

E. recurvatum.

Host. Pigeon.

Location. Intestine.

Specimens in glycerine-alcohol and mounted slides obtained through the courtesy of P. Beaver (1940).

Genus *Euparyphium* Dietz, 1909.

E. malayanum Leiper, 1911.

Host. Dog, Cat

Location. Intestine.

Locality. Madras (1931)

These specimens were obtained experimentally at the Madras Veterinary College, Department of Parasitology, by feeding metacercariae from fish to dogs and cats.

Genus *Echinochasmus* Dietz, 1909

E. narayani n. sp. Mudaliar, S. V., 1937

Host. Kite

Location. Intestine

Locality. Madras (1937)

Family SCHISTOSOMATIDAE Looss, 1899

Genus *Schistosoma* Weinland, 1858

S. spindalis Montgomery, 1906

Host. Cattle, sheep

Location. Portal and mesenteric veins

Locality. Madras (1922)

This parasite is recorded from many places in South India

S. nasalis n. sp. Rao, 1932

Host. Cattle, buffalo

Location. Nasal veins

Locality. Madras (1932)

Bovine nasal schistosomiasis is caused by this parasite and fairly wide spread all over the province. The life-history of the causal parasite—*Schistosoma nasalis*—was worked out at this laboratory.

S. incognitum (= *S. suis*) Rao and Ayyar, 1933

Host. Pig

Location. Portal veins

Locality. Madras (1932)

This helminth was met with and described, from the portal vessels of the pig, for the first time, in Madras.

Other hosts. Dog

Location. Portal veins

Locality. Madras (1941)

S. indicum Montgomery, 1906

Host. Horse, Cattle

Location. Portal and mesenteric veins

Locality. Madras (1922)

S. bovis Sonsino, 1876

Host. Cattle, sheep

Location. Portal and mesenteric veins

Locality. Iraq (1935)

Preserved specimens were obtained through the courtesy of Mr. Mchattie, Iraq.

S. turkestanicum Skrjabin, 1913

Host. Sheep, goat, cattle

Location. Portal vessels

Locality. Iraq (1935)

Preserved specimens were obtained through the courtesy of Mr. Mchattie, Iraq.

S. nairi n. sp. Mudaliar, S. V., and Achary, G. R., 1945

Host. Elephant

Location. Portal vessels

Locality. S. India. Madras. Coimbatore (Topslip area) (1945)

Family PARAMPHISTOMIDAE Fiscoeder, 1901

Genus *Paramphistomum* Fiscoeder, 1901*P. cervi* Schrank, 1790

Host. Cattle, buffalo, sheep, goat

Location. Rumen

Locality. Madras (1923)

(The identity of this is doubtful and specimens resemble species of *Cotylophoron*)

P. explanatum Creplin, 1847

Host. Cattle, buffalo, sheep, goat

Location. Bile, ducts, liver

Locality. Madras (1923)

Genus *Cotylophoron* Stiles and Goldberger, 1910.*C. cotylophorum* Fiscoeder, 1901

Host. Cattle, sheep, goat

Location. Rumen

Locality. Madras (1926)

Genus *Gastrothylax* Poirier, 1883*G. crumenifer* Creplin, 1847

Host. Cattle, buffalo, sheep, goat

Location. Rumen

Locality. Madras (1923)

Genus *Fiscoederius* Stiles and Goldberger, 1910*F. elongatus* Poirier, 1883

Host. Cattle, buffalo, sheep, goat

Location. Rumen

Locality. Madras (1923)

F. cobbaldi Poirier, 1883

Host. Cattle, buffalo, sheep, goat

Location. Rumen

Locality. Madras (1923)

All the members of the Family Paramphistomidae mentioned above except *Paramphistomum explanatum* are very commonly met with in the rumen of cattle, buffaloes, sheep and goats of this province, and do not appear to cause any great inconvenience. The immature (larval) forms of *cotylophoron* species and possibly of others also are of consequence as causative factors in gastro-enteritis and diarrhoea in young animals. The species *Paramphistomum explanatum* has been very often met with in the liver of buffaloes particularly and may prove harmful to the organ though the extent of the harm caused has yet to be assessed.

Genus *Gastrodiscus* Leuckart, 1877*G. aegyptiacus* Cobbold, 1876

Host. Horse

Location. Large intestines

Locality. Madras (1923)

Other hosts. Elephant and mule

Location. Intestine

Locality. Madras forests (1930, 1935)

Genus *Pseudodiscus* Sonsino, 1895*P. hawkesi* Cobbold, 1875

Host. Elephant

Location. Intestine

Locality. Madras (1923)

P. collinsi Cobbald, 1875

Host. Pony

Location. Intestine

Locality. S. India. Madras. Godavari District (Palakol, 1937)

Genus *Pfenderius*, Stiles and Goldberger, 1910.*P. papillatus* Cobbold, 1882

Host. Elephant

Location. Intestine

Locality. Madras (1923)

CERCARIAL FAUNA IN MADRAS

Cercariae Indicae XXX Sewell, 1922(Cercaria of *Schistosoma nasalis* Rao, 1932)Host. *Limnea leuteola*

Locality. Madras (1931)

Cercaria kylasami n. sp. Rao, 1932Host. *Planorbis exustus*. (Deshyes)

Locality Madras (1931)

Cercaria saundersi n. sp. Rao, 1932Host. *Limnea acuminata*. (Lamarck)

Locality. Madras (1931)

Cercaria hurleyi n. sp. Rao, 1931Host. *Limnea leuteola*

Locality. Madras (1931)

Cercariae anomala Rao, 1929Host. *Indoplanorbis exustus*

Locality. Madras. Adoni (1928)

- Cercariae of Schistosoma spindalis* Montgomery, 1906
Host. *Indoplanorbis exustus*
Locality. Madras (1931)
- Cercariae Indicae* IX, X, XVII Sewell, 1922
Host. *Planorbis exustus*
Locality. Madras (1931)
- Cercariae Indicae* XXIII Sewell, 1922
(*Cercaria* of *Euparyphium malayanum* Leiper, 1911)
Host. *Limnea luteola*
Locality. Madras (1931)
- Cercaria Indicae* XXVI Sewell, 1922
(*Cercaria* of *Cotylophoron cotylophoron* Fishoeder, 1901)
Host. *Planorbis exustus*
Locality. Madras (1931)
- Cercariae Indicae* XXIX Sewell, 1922
(*Cercaria* of *Fischoederius elongatus* Poirier, 1883)
Host. *Limnea luteola*
Locality. Madras (1931)
- Class CESTODA Rudolphi, 1808
- Order PSEUDOPYHLLIDEA Carus, 1863
- Family DIPHYLLOBOTHRIIDAE Luhe, 1910
- Genus *Diphyllbothrium* Cobbald, 1858
- D. reptans* (Diesing, 1854)
Host. Dog
Location. Intestine
Locality. Madras (1922)
- D. felis*. (Creplin, 1825)
Host. Tiger, Cat
Location. Intestine
Locality. Madras, Bezwada, Kurnool (1931)
- Order CYCLOPHYLLIDEA Braun, 1900
- Family. ANOPLOCEPHALIDAE Cholodkovsky, 1902
- Genus, *Anoplocephala* E. Blanchard, 1848
- A. Perfoliata* (Goeze, 1782)
Host. Horse
Location. Intestine
Locality. Madras (1923)

- A. mamillana* (Mehlis, 1831)
Host. Horse
Location. Intestine
Locality. Madras (1933)
- A. manubriata* Railliet, Henry and Bouche, 1914
Host. Elephant
Location. Intestine
Locality. Madras Zoo (1923)
- Genus *Moniezia* R. Blanchard, 1891
- M. expansa* (Rudolphi, 1810)
Host. Sheep, cattle, camel
Location. Intestine
Locality. Madras (1920)
- M. benedeni* (Moniez, 1879)
Host. cattle, sheep, goat
Location. Intestine
Locality. Madras (1923)
- Genus *Pseudanoplocephala* Baylis, 1927
- P. Crawfordi* Baylis, 1927
Host. Pig
Location. Intestine
Locality. Madras slaughter house (1927)
- Genus *Avitellina* Gough, 1911
- A. lahorea* Woodland, 1927
Host. Sheep, cattle
Location. Intestine
Locality. Madras (1926)
- Genus *Stilesia* Railliet, 1893
- S. globipunctata* (Rivolta, 1874)
Host. Calf
Location. Intestine
Locality. Madras (1928)
- S. vittata* Railliet, 1896
Host. Goat
Location. Intestine
Locality. Madras. Venkataçiri (1938)
- Family MESOCESTOIDIDAE Fuhrmann, 1907
- Genus *Mesocestoides* Vaillant, 1863
- M. lineatus* (Goeze, 1782)
Host. Dog

Location. Intestine

Locality. Muktesar, U. P. (1938)

This specimen was obtained through the courtesy of the Director, Imperial Veterinary Research Institute, Muktesar.

Family DAVAINIIDAE Fuhrmann, 1907

Genus *Cotugnia* Diamare, 1893

C. brotugerys Meßgitt, 1915

Host. Fowl

Location. Intestine

Locality. Madras. Hosur Cattle Farm (1939)

C. bhaleraoi n. sp. Mudaliar, S. V., 1942

Host. Fowl

Location. Intestine

Locality. Madras. Hosur Cattle Farm (1942)

Genus *Raillietina* Fuhrmann, 1920

R. tetragona (Molin, 1858)

Host. Fowl, pigeon, crow

Location. Intestine

Locality. Madras (1923)

Family DILEPIDIDAE Railliet and Henry, 1909

Genus *Dipylidium* Leuckart, 1863

D. caninum (Linnaeus, 1758)

Host. Dog, cat

Location. Intestine

Locality. Madras (1920)

Genus *Diplopylidium* Beddard, 1913

D. nolleri (Skrjabin, 1924)

Host. Cat

Location. Intestine

Locality. Madras (1923)

Genus *Joyeuxia* Lopez-Neyra, 1927

J. chyzeri (V. Ratz, 1897)

Host. Cat

Location. Intestine

Locality. Madras (1935)

J. pasqualei (Diamare, 1893)

Host. Cat

Location. Intestine

Locality. Madras (1936)

Family HYMENOLEPIDIDAE Railliet and Henry, 1909

Genus *Hymenolepis* Weinland, 1858

H. diminuta (Rudolphi, 1819)

Host. Rat, bandicoot, squirrel

Location. Intestine

Locality. Madras (1930)

Family TAENIIDAE Ludwig, 1886

Genus *Taenia* Linnaeus, 1758

T. solium Linnaeus, 1758

Host. Man

Location. Intestine

Locality. Madras (1934)

T. hydatigena Pallas, 1766

Host. Dog

Location. Intestine

Locality. Madras (1929)

Other hosts. Tiger

Location. Intestine

Locality. Madras. Kurnool (1934)

T. pisiformis (Bloch, 1780)

Host. Dog

Location. Intestine

Locality. Madras (1923)

T. taeniaeformis (Batsch, 1786)

Host. Cat, tiger

Location. Intestine

Locality. Madras, Coorß (1920)

T. serialis (Gervais, 1847)

Host. Dog

Location. Intestine

Locality. Madras (1923)

T. zaißeri Hall, 1916

Host. Dog

Location. Intestine

Locality. Madras (1920)

Genus *Echinococcus* Rudolphi, 1801

E. granulosus (Batsch, 1786)

Host. Dog

Location. Intestine

Locality. Madras (1929)

CYSTIC (LARVAL) STAGES OF TAENIIDÆ

Cysticercus cellulosæ (cysticercus of *T. solium* Linnaeus, 1758)

Host. Pig, dog

Location. Muscles, heart, lungs, brain, diaphragm

Locality. Madras (1920)

C. bovis (cysticercus of *T. saginata* Goeze, 1782)

Host. Cattle

Location. Muscles

Locality. Madras, Kodaikanal (1930)

C. tenuicollis (cysticercus of *T. hydatigena* Pallas, 1766)

Host. Sheep

Location. Peritoneal cavity

Locality. Madras (1929)

C. fasciolaris (cysticercus of *T. taeniaeformis* Batsch, 1786)

Host. Rat, bandicoot

Location. Liver

Locality. Madras (1928)

Coenurus cerebralis (coenurus of *T. multiceps* Leske, 1780)

Host. Sheep

Location. Brain

Locality. Madras (1920)

C. gaiæri (Coenurus of *T. gaiæri* Hall, 1916)

Host. Sheep, goat

Location. Connective tissue

Locality. Madras (1928)

Hydatid (hydatid of *Echinococcus granulosus* Batsch, 1786)

Host. Cattle, sheep

Location. Lungs, liver, pleura

Locality. Madras (1928)

(To be Continued)

**CONTAGIOUS CAPRINE PLEURO PNEUMONIA—SOME
FIELD OBSERVATIONS IN MADRAS PRESIDENCY**

BY

G. R. VISWANATHAN, G.M.V.C., P.G. (*Edin. and Mukl.*)

Veterinary Investigation Officer, Madras Presidency

AND

M. RAMAKRISHNA PILLAY, G.M.V.C.

AND

S. VENKATARAMA AYYAR, G.M.V.C.,

Assistants to the Veterinary Investigation Officer, Madras.

Introduction.

This is one of the most devastating diseases of caprines that has been prevalent in this Presidency for a long time.

In British India, Steel (1889) encountered the disease in Khandesh and Walker (1914) in Punjab. It is also noted in the United Provinces. The disease has been occasionally seen in Ceylon and it caused numerous deaths in goats in 1930.

The occurrence of this disease in this Presidency was first brought to notice during the year 1932 by the Touring Veterinary Assistant Surgeon Mr. P. K. Rangesa Rao in Chittoor. Since then, it has been recorded in the districts of Tinnevely, Madura, Chingleput, North Arcot, Nellore, Anantapur, West Godavary, Kistna, Guntur, Coimbatore, South Arcot, Tanjore, Vizaġapatam, Cuddappah, Bellary and Salem. On the whole, it has been recorded in more than 500 villages.

In this Province, no work on sheep and goat disease has been done previously. Outbreaks of sheep and goat diseases were not reported; nor any correct annual mortality statement maintained. Only after the commencement of our investigations in the year 1934, the authorities were addressed to include the sheep and goat diseases in their mortality statement. Even afterwards, the reports have been very meagre and many outbreaks, in which the affected animals were slaughtered at the first sign of the disease, went unreported and unnoticed. The observations contained in this report are based entirely on our own exertions as a result of which many outbreaks were detected and facts collected on the spot.

Generally, in a good number of villages, there will be goats ranging from 500 to 1,000. These are kept along with the sheep, although a few

flocks have been maintained separately. When the disease starts in a flock, it is the usual history that it ushered in after a fresh purchase. The new ones first become affected and, later on, the incontacts, until gradually the whole flock becomes affected. In about ten days, nearly 100 animals out of a flock of 600 would have become infected, and 60 to 70 goats might have died. It is our experience that, in places where the sick animals have not been isolated and removed, whole flocks of three to four hundred goats are wiped out within the course of a month. We have seen in Dehydration Factories 200 to 300 animals affected with a mortality of nearly 125 in a day, out of a flock of 2,000, the number of the affected increasing every day. The economic loss to the ryots and to organised abattoirs from this disease is, therefore, very enormous. In all the instances, our diagnosis was based on *post-mortem* findings.

Local Names and Definition.

In Tamil Districts, it is called "Eralmootti Novu," "Eramootti Noyi" or "Kulaimootti Noyi". In Telugu Districts, it is called "Gundu Mooku Thegulu" or "Daḡḡu Roḡa" or "Daḡḡu Sankatam". It is an acute, infectious and contagious disease caused by *Borrellomyces Peri Pneumonia Caprae* (Longley 1940) and is characterised by high fever and pleural and pneumonic exudate, the peculiarity of the exudate being its tendency to clot immediately on exposure to air.

Epizootiological Study of the Disease.

Epizootiological study of the disease, under field conditions was undertaken by attending actual outbreaks and collecting information regarding the previous occurrence of the disease in villages. The disease does not occur in a sporadic form. It takes the form of an epizootic. It is highly contagious in nature. Unrestricted movement of animals and the breaking up of an affected flock by an unscrupulous owner, with a view to realise as much money as possible from the sale of animals, have been mainly responsible for the dissemination of the disease.

Species of animals susceptible.

Steel, observing the disease in India in 1889, was of the opinion that sheep also were susceptible to this disease. But, in all the places visited so far by the authors, the disease is species specific, and confined only to goats. Goats of all ages and of both sexes, whether debilitated or in good condition, were susceptible. Though a number of sheep and cattle have been with the goats in the same flock, yet, they have not been found affected. As regards the breed of animals affected, it may be said that the infection is more or less confined to the local breeds. The other breeds such as the Jamnapari, Surti, etc., are not met with to any extent in this Presidency.

Regarding the occurrence of the disease in hill stations, not even a single report has been brought to our notice during the last twelve years and

hence it is not possible to make any statement on the relative susceptibility of goats in hills and plains.

The Regional and Seasonal Incidence of the Disease.

The disease is generally found in villages near the foot of the hills, where a large number of goats are kept for grazing purposes and also in flocks on the roadside villages. From the investigations made, it is found that there is no definite season for its incidence and that it occurs throughout the year in this Presidency, although more prevalent during the cold season.

In some years it is more virulent than in others. No evidence has been found to correlate the disease with the prevalence of biting flies or mosquitoes.

Period of Incubation.

The exact period of incubation is not known and seems to vary in different outbreaks. It is usually 3 to 8 days; in some instances, even two weeks.

Symptomatology.

In the majority of outbreaks the disease has been observed in the acute form; in other cases hyperacute, subacute and chronic forms have been met with.

Hyperacute form.

In this from the affected animal dies in one to three or four days. In addition to the usual systemic disturbances, such as dullness, depression, off-feed, and highly congested mucous membrane, there are symptoms of respiratory distress. Breathing is accelerated and laboured with discharge from the nostrils which is thin and watery. The animal groans with pain and bleats. The temperature is very high even up to 106 or 107°F. The animal, in the majority of instances, will show a tendency to be recumbent, but, if it is standing, its elbows are turned out.

Acute Form.

This is the form most commonly met with in this Presidency. The general condition of the animal is not affected in the beginning. Cough is the earliest symptom and it is accompanied by occasional sneezing. There is discharge from the nostrils which at first is watery, then becomes mucous, and later on, turns mucopurulent. The animal becomes dull with impaired appetite, dribbling of saliva and grinding of the teeth. The temperature is raised to 106 to 107° and the respirations are difficult and accelerated. Later on, it becomes dyspnoeic and abdominal. The animal stands with its head and neck stretched forward and elbows

turned out. The cough becomes harsh and painful accompanied by nasal discharge and sneezing. Auscultation and percussion reveal consolidation of the lungs. Pressure on the chest wall is very painful to the animals. The affected animals are generally found recumbent, become indifferent to their surroundings, and die in about 8 to 12 days.

Chronic Form.

This is met with only occasionally. In this form, the symptoms, as in all chronic maladies, are prolonged and mild. 5 per cent of such affected animals recover after 2 to 3 weeks.

Duration of the Outbreak.

The duration of the outbreak in a village ranges from 15 days to three months depending upon the number of goats in the flock in the village, their susceptibility and also upon the climatic conditions. The duration is shorter in cold and rainy season and prolonged in summer months.

The mortality.

The mortality varies in different outbreaks, depending upon the climatic and local conditions. Generally it is about 70 to 80 per cent.

Immunity.

One attack confers immunity and there is no recurrence of the disease.

Post-mortem Findings.

The lesions of the disease are noticed exclusively in the lungs and pleura and they are commonly unilateral; bilateral lesions are seen less frequently. The right lung is the main seat of lesion and, even here, the diaphragmatic lobe is more often affected than the cardiac lobe. It is only rarely that the left lung is found affected.

The lesions are of the nature of consolidation of the lungs, which, on section, shows fibrinous tissue formation. Sometimes marbling also is noticed and a very good specimen of marbling has been preserved by us as a museum specimen. In some instances, fibrinous deposits are noticed on the parietal pleura. In less acute cases, thoracic effusion with serofibrinous deposit is noticed, which, on exposure to air, solidifies or clots taking the shape of the vessel in which it is kept. This is a very characteristic feature which has been mentioned by us as early as 1934. In advanced cases, pericarditis with thickening of the pericardium is noticed. No helminths have been found in the lesions.

Histopathological Examination.

Morbid materials from affected cases in the field were sent to the Principal, Madras Veterinary College, and to the Imperial Veterinary Re-

search Institute, Mukteswar, for histopathological examination and transmission experiments.

Out of 7 sections sent to Mukteswar in 1936-1937, two have shown broncho-pneumonia, one grey hepatisation, and four, consolidation of the lungs, suspected to be of helminthic origin.

The first reports of examination by Mr. Shirlaw of the Imperial Institute of Veterinary Research stated that the disease was of helminthic origin. But, after the examination of the materials sent during the years 1937-38 and 1938-39, this has been negatived.

Subsequently, Longley (1940), who undertook an intensive work on the disease, opined that, histopathologically, the lesions in the lungs present a very wide variety of picture, some or all of which may be present in the lung. To quote from his report, "The lesions of the lung are peculiar, in that the classical stage of red hepatisation, with rupture of capillaries and massive accumulation of erythrocytes in the alveoli, the orthodox prelude to grey hepatisation, seems rarely, if ever, to occur. The earliest lesion is probably always an oedema with capillary congestion, which is rapidly followed by very severe capillary engorgement, but rupture of the capillaries is not the rule. A rapid invasion of polymorphonuclear neutrophile leucocytes and monocytes leads directly to a grey hepatisation. This is quite commonly associated with a persistence of the capillary engorgement, and extensive areas of what, on histopathological grounds, can only be designated "Grey hepatisation" retain red colour, macroscopically, as a result of the persistent capillary dilation. Vesicles in the oedematous stage are often contiguous with vesicles in grey hepatisation. The alveoli in the surrounding hepatised areas are usually emphysematous.

The stage of hepatization is followed either by necrosis with the complete loss of all pulmonary structure or by organisation.

The bronchi manifest no change in the early stages, but become completely involved later, when they exhibit catarrhal inflammation and full with muco-purulent exudate. Bronchiolites is manifested earlier.

The specific organism has several times been evident lying both in the surface of the mucosa and within the lumen. Oedematous infiltration of the peribronchial connective tissues is common, and in this as in the infiltrated septa, the organism is frequently to be found. The oedema is characteristically followed by massive peribronchial cellular infiltration.

Pleura.

The pleura is thickened, oedematous and the capillaries are engorged in early lesions. A rapid leucocytic invasion of the oedematous mem

brane follows. The interlobular septa are similarly involved in direct continuity with the pleura. The organism is most readily discernable in the infiltrated septa. In late lesions there is well marked fibrosis."

Diagnosis.

The diagnosis is easily effected when the outbreak is well established and typical lesions as described above are seen at autopsy. Some difficulty may arise in distinguishing clinically between this disease and other forms of pneumonia of the goats as met with in verminous infection, rinderpest, pasteurellosis, goat-pox, etc., but little doubt should exist after the examination of the cadaver.

Verminous pneumonia is eliminated by the examination of the consolidated lungs for the presence of helminths both macroscopically and microscopically. Further, the lesions will be localised in places where the helminths are situated. The effusion in helminthic pneumonia will not be of a fibrinous character and will not clot immediately as in caprine pleuro pneumonia. The epizootiology of the disease such as species specificity, its rapid spread and heavy mortality will differentiate Caprine Pleuro Pneumonia from helminthic pneumonia.

Rinderpest Pneumonia:—The goat is highly susceptible to rinderpest but the pneumonic lesions taken in conjunction with Rinderpest lesions in the alimentary tract should leave no room for doubt about the nature of the disease. If necessary, transmission experiments will produce the disease in bovines.

Pasteurella Pneumonia:—In this disease, the isolation of *Pasteurella* pathogenic for rabbits and sheep, is a sufficient point in differential diagnosis.

Goat-pox Pneumonia:—The presence of lesions of goat-pox all over the body with characteristic umbellication is sufficient for a correct diagnosis.

Experimental Studies on the Virus.

(a) *Nature of the Virus*:—All the early workers on the disease have described one or other of the following as the causative agent—a *Pasteurella*, streptococcus, a fungus, a *Salmonella* or a helminth. In this Province, the disease was suspected by us to be of a virus origin from the very beginning of the investigation as the result of extensive field study, cultural and biological experiments.

Longley (1940) proved the etiological agent as a highly pleomorphic organism, which in fresh material examined by dark ground illumination, bore close resemblance to the organism of contagious Bovine Pleuro Pneumonia and which he designated as "*Borrellomyces peri pneumonia caprae*." He also proved that the organism is found both in the fresh pneumonic material and the exudate.

(b) *Resistance of the virus*:—Longley (1940) says that the organism is usually fragile and at room temperature loses most of the virulence in 24 hours. This is also our experience. In cold storage, it is non-infective at 96 hours, but a reduced infectivity has been maintained up to seven days, but not longer, even with the addition of Tyrode solution of glycerine.

The organism is destroyed by exposure to heat between 55°C to 60°C. for 40 minutes and also by 0.25 per cent formalin and 0.5 per cent phenol at 0.5°C. in 48 hours.

(c) *Transmission*:—Most workers have failed to transmit the disease or have obtained doubtful results. Walker (1930) in India, succeeded in reproducing the disease by the intrapulmonary and intratracheal routes. The disease could not be transmitted by feeding as the results of experiments conducted by various workers. In this Province, transmission experiments with the morbid materials were first conducted by the late V. Krishnamurthy Ayyar in 1933-34 and he declared it to be of virus origin. The first author of this paper (G. R. V.) has always been of the opinion that the disease was of virus origin as the result of his observations on vaccinated animals and after conducting transmission experiments.

Transmission experiments conducted with the morbid materials from the affected cases in the field always proved a failure due to the virus dying in transit as the result of climatic conditions and environments. During the year 1935, three diseased goats which were showing symptoms of cough were brought in a car from Penumoor of Chittoor District and handed over to the Principal, Madras Veterinary College, by the first author. Two more goats were handed over during the year 1936-37 for transmission experiments. Post-mortem findings furnished by the Principal in respect of those three goats showed the characteristic lesions of this disease viz. the presence of consolidation of lungs and sero-fibrinous effusions with adhesions.

The transmission experiments conducted by the Principal, Madras Veterinary College with the latter lot of goats "resulted in two instances in death from a severe pleuro-pneumonia." This has been recorded in the Annual Report of the Civil Veterinary Department, Madras, for 1936-37.

Again during the year 1938-39, sixty-six donor goats from actual outbreaks at various stages of the disease from different districts were supplied by the authors for initiating the experimental transmission of the disease in goats in Madras Veterinary College. The disease was transmitted by Longley, who, as quoted already, stated that the disease is due to an organism simulating that of Bovine Pleuro Pneumonia namely "*Borrellomyces peri pneumonia*."

The inoculation of fresh pneumonic material either subcutaneously or intravenously gives rise to an acute progressive and usual fatal oedema at the site of inoculation with death in 3 to 8 days. Also the inoculation of effusion from these lesions gives rise in a percentage of cases to similar lesions and the infection is by this means carried to 3rd passage. Pleuritic and pneumonic lesions can be induced by direct extension from similar lesions in the musculature and connective tissue in the thoracic wall.

Recently, Shirlaw at the Imperial Institute of Veterinary Research, Mukteswar, was able to confirm the findings of Longley from outbreaks in Bombay and North West Frontier Province. He was able to transmit the disease from material obtained both from the lesions and from the cultures.

Method of Spread.

The chief factor that is responsible for the spread of the disease is the unregulated and unrestricted movement of flocks from place to place. Constant movement of the flock from village to village for pasture and manurial purposes and the sale of animals from affected flocks in distant markets contribute to the easy dissemination of the disease over large areas.

Little is known as to how the disease spreads under natural conditions. Longley says that, in 12 goats subjected to close contact with both natural and experimental cases, only one case of pneumonia was recorded and he says that no explanation can be offered for this peculiarity. The authors of this article have to differ entirely from Mr. Longley's findings, based as they are on experiments conducted in the laboratory, because in all the outbreaks which they have investigated, the disease has spread from the diseased to healthy goats by direct contact, the infection being by way of the respiratory tract. Outbreaks of the disease in herds always coincide with the introduction of an infected animal.

Prophylaxis.

For a long time, no method of prophylaxis was known. Henderson (1929) vaccinated goats by injecting lung emulsion subcutaneously and obtained encouraging results; vaccinated animals stood up to the natural disease, whereas 61 per cent of unvaccinated animals contracted the disease and died. Kolyali C. Ralf I and Araycre K (1935) claimed encouraging results with formalised vaccine. As the results of the above findings, vaccination in the field in this Presidency were conducted by us with the following materials :—

1. Formalised lung-tissue vaccine
2. Tyrode lung-tissue vaccine
3. Culture vaccine

1. Formalised Lung-tissue Vaccine.

From the year 1935 to 1944, 7,128 inoculations have been done with this vaccine in 23 villages under actual outbreaks. In the beginning, 2,392 goats were given a dose of 5 c.c. to 1 c.c. of the vaccine, but, later on, all the remaining animals received a dose of 3 to 5 c.c. From the observations made, it is seen that the vaccination was able to set up a reaction in about 10 per cent of the inoculated and there was a mortality of 3 per cent. Considering the small percentage of reactors with comparatively low mortality, and the fact that the disease was controlled in the infected centres, combined with the further salient feature that the infection did not spread to healthy localities, there is every reason to believe that the vaccine would be useful in controlling the disease. Longley (1940) states that immunisation with a formalised vaccine reduces the mortality at a subsequent test by insufflation to 25 per cent or even less. The Veterinary Investigation Officers, Baroda, Sind, Ajmere and Merwara corroborate our findings of the vaccinations. As regards the duration of the immunity in the field, it is not yet known.

2. Tyrode Lung-tissue vaccine : (Longley's).

In four villages, 539 goats were vaccinated with the vaccine prepared with fresh sterile lung-tissue in Tyrode Solution as suggested by Longley. The vaccine was injected subcutaneously in the ear in 5 c.c. doses. There were 47 attacks and 21 deaths in 3 villages. In our experience, this vaccine does not keep long under field conditions and becomes putrid and foul smelling in a very short time in spite of precautions taken in the preparation. As such it is not a convenient product for field use.

3. Culture Vaccine :

In 1,945, 1233 goats were vaccinated with the 89th generation culture obtained from the Imperial Institute of Veterinary Research, Mukteswar, in two centres—one, an infected area and the other a free one. In the free area, no reaction was noticed. In the infected area, nearly one hundred deaths occurred among 1,075 goats vaccinated. Further trials are necessary before giving any definite opinion regarding the efficacy of the culture vaccine in the field.

Prevention.

The usual hygienic and sanitary measures must be adopted to prevent the spread of the disease. It is essential to protect clean herds by strict isolation, for a suitable period, of all animals entering the herd, especially if it is known that such animals have come from an infected area. Complete isolation of infected herds should be adopted. It may be essential at times to slaughter all animals that have been exposed to infection. Good food and accommodation are essentials in the control of the disease.

Treatment.

Gudachft (1928) has used Salvarsan in doses of .2 to .7 grams according to body weight with good results. This worker obtained 88.4 per cent. of cures in 746 animals treated. This treatment is more or less on the lines suggested by Hutyra and Marek for the treatment of Bovine Pleuro Pneumonia.

In this province of Madras, treatment with Neosalvarsan was first undertaken in 1938 on two cases of Caprine Pleuro Pneumonia and both of them recovered. The dose given was 0.375 grams in 20 c.c. distilled water intravenously.

Subsequently in 17 villages, 81 animals, in varying stages of the disease, were injected with the drug, the dose varying from 0.0375 grams to 0.375 grams. Sixty animals recovered, giving a percentage of 74.7 for recoveries. Of these, 22 animals received a dose of 0.2 grams and all of them recovered. Thirty-one animals received a dose ranging from 0.075 to 0.1 gram; twenty-seven recovered giving a percentage of 87 for recoveries. Twenty-nine goats received a dose of 0.66 grams and below, of which only 12 i.e., 41.4 per cent recovered and 17 i.e., 58.6 per cent died. Thus it will be seen that a dose of 0.2 grams and above is required to effect a cure. One peculiarity noticed in the treatment with this drug was that the animal became very lively within one or two days and the rough dirty coat of the affected animal began to shine in a few days. The ryots, who were very much diffident about an effective remedy for this disease, became very much convinced after the practical demonstration. One injection was sufficient.

Treatment with the following drugs also were tried viz. Novarsenobillon (May & Baker), Sodium Cacodylate solution and Neoarsphenamine (Squibbs).

Novarsenobillon (May & Baker's).

From the year 1940 to 1945, 1,853 goats in different stages of the disease were treated with this drug. The dose was 0.1 to 0.15 gram in 15 to 20 c.c. of distilled water and it was given intravenously. This has been found very valuable in effecting a cure in the early stages of the disease. More than 75 per cent of the treated recovered. The cost of the drug also is not very much. Animals which received less than the dose mentioned above and also those in very advanced stages of the disease did not respond to the treatment.

Kulkarni (1945) Veterinary Investigation Officer, Baroda, in a private communication to us states that Novarsenobillon in combination with Sulpha products has been found to be successful in treating affected cases of Pleuro Pneumonia of goats.

Sodium Cacodylate Solution (3 grs in 1 c.c.). This was tried in doses of 1 c.c. subcutaneously as a single dose on five goats in the early stages of the disease. Only two recovered, giving 40 per cent success. In one case, an abscess developed at the seat of injection.

Neoarsphenamine (Squibbs).

This drug was tried only in two cases in early stages, the dose given being 0.375 grams in 20 c.c. of distilled water. This drug requires further trials in the field.

Thus it will be seen that there is evidence to support that the disease can be treated successfully if taken on hand in its early stages.

Summary and Conclusions.

1. Caprine Pleuro Pneumonia is locally called 'Eramooti Noyi' or 'Eralmooti Noyi' or 'Kulaimooty Noyi' in Tamil and 'Gundu Muku Thegulu' or 'Daggu Sankatam' in Telugu and occurs in a wide-spread manner in this province and also in other provinces, causing great economic loss to the ryots.

2. It is an acute, infectious, contagious and transmissible disease, caused by *Borrellomyces Peri Pneumonia Caprae*, characterised by high fever and pleural and pneumonic exudate, the peculiarity of the exudate being its tendency to clot immediately on exposure to air.

3. The disease is species specific and confined only to goats in natural outbreaks.

4. The disease is not seasonal and regional and not in any way connected with the prevalence of biting flies or mosquitos.

5. The period of incubation is usually 3 to 8 days, sometimes, three weeks.

6. The course of the disease is generally 3 to 8 days. Some animals linger for 2 or 3 weeks, with some recoveries in them.

7. The duration of the outbreak in a village ranges from 15 days to 3 months depending upon the census of the goats in the village. It is shorter in cold and rainy months than in summer season.

8. The disease is met with in an acute form generally, although sub-acute and chronic forms are recorded. One attack confers immunity and there is no recurrence of the disease. The mortality varies in different outbreaks. Generally it is about 70 to 80 per cent.

9. Post-mortem lesions of the disease are confined exclusively to the lungs and pleura with consolidation of the lungs and fibrinous pleurisy.

10. The disease spreads rapidly from the diseased to healthy goats, indicating direct infection.

11. Prophylactic vaccination with the formalised vaccine prepared from the affected lung tissue gives very encouraging results.

12. Treatment of the affected goats with Neosalvarsan (Bayer's) or Novarsenobillon (May and Baker's) gives recovery in 75 per cent of the cases, especially in the early stages of the disease.

Acknowledgements

We wish to express our particular appreciation of the ready help rendered by Dr. F. C. Minett, D.Sc., M.R.C.V.S., Director, Imperial Institute of Veterinary Research, Mukteswar, and all members of his staff without which the work could never have been accomplished successfully.

We wish to express our thanks to Major P. T. Saunders, O.B.E., M.R.C.V.S., the then Director of Veterinary Services, Madras, and Mr. T. J. Hurley, O.B.E., M.R.C.V.S., D.V.S.M., I.V.S., the present Director and his field staff for all the help rendered in making the investigation a success. Our thanks are also due to the Principal, Madras Veterinary College, and Lecturer in Pathology and Bacteriology, in the histo-pathological examination of the specimens sent.

References

- Aziz Ahmed (1942) Progress Report of the Veterinary Investigation Officer, North, West Frontier Province, 1940-43.
- Bhawa (1934) Progress Report of the Veterinary Investigation Officer, Sind 1942-43.
- Crawford (1934) Annual Report of the Veterinary Department, Ceylon, for the years 1930, 1932 and 1934.
- Curasson Infectious Pneumonia of the goat—*Trait de pathologie exotique, Veterinaire, et compares*, G. Vol. 1, Chapter 16.
- Gudachast (1928) Pleuro Pneumonic contagieux des chevres. *Therap. monatchi fur. veter. mede*; Mars 1928.
- Henderson (1928) Contagious Pleuro Pneumonia of Goats. Annual Report of the Veterinary Department, Nigeria, 1927, p. 31.
- Hutyna and Marek (1918) Special Pathology and Therapeutics of the disease of Domestic Animals.
- Kearney, W. (1928) Contagious Pleuro Pneumonia. Annual Report of the Civil Veterinary Department, Nigeria, 1927, p. 52.
- Kolyali, C. Ralf I and Arayce, K. (1935) Veterinary Record No. IX, Vol. XVI, p. 244.
- Krishnamurthi, V (1933) Annual Report of the Civil Veterinary Department 1933-34.
- Kulkarni (1945) Veterinary Investigation Officer, Baroda, Private communication.
- Longley, E. O. (1940) Contagious Pleuro Pneumonia of Goats. *Ind. Jl. of Vet. Sc. and Ani. Hus.* Vol. X, Part 1, June 1940.
- Mahajan, M. R. (1934) Progress Report of the Veterinary Investigation Officer, Hyderabad, 1934.
- Saunders, P. T. Annual Reports of the Civil Veterinary Department, Madras, 1933-34 and 1936-37.
- Steel (1889) Mortality in goats in the districts of Khandesh. *Vet. Jl.*, p. 455. 1889.
- Viswanathan, G. R. Progress Report of Veterinary Investigation Officer, Madras, 1933-34 and 1935 to 1945.
- Walker, J. (1914) Pleuro Pneumonia of Goats in the Punjab. *Jour. of Com. Pathol. and Therap.* p. 68. 1914.
- Whitworth (1935) Annual Report of the Veterinary Department, Straits Settlements, 1935 and 1937-38.
- Annual Report of the Imperial Institute of Veterinary Research, Mukteswar for the years 1938-39.

PASTEURISATION OF MILK *

BY

M. S. RAJENDRAN, G.M. V.C.,

Assistant to the Lecturer in Hygiene, Madras Veterinary College.

Among the articles of food that should receive a high priority of attention and protection is milk. It deserves such an attention both from the public and the Government because of its universal use and its great liability to easy infection with bacteria. Further, it is in itself an ideally good medium for the growth of these bacteria. The milk then becomes so changed or decomposed that it is unsafe as food.

Milk may either start on its journey in an unsafe condition, as when it is drawn from an unhealthy animal or, may at any point, along its line of travel, become changed from its natural state.

For the veterinarian, the diseases that are communicable to man through milk are very important and they may be classified under two heads *viz.* i. Those that are directly transmitted from the animals to man through milk and ii. those that are transmitted indirectly from man to man through milk. Under group (i) are Tuberculosis, Undulant Fever, Septic Sore-throat, Scarlet Fever, Mastitis (the cause of outbreaks of illness in children and usually of short duration) Anthrax, Foot and Mouth, Small-pox Cow-pox and Rabies. Under group (ii) are Typhoid Fever, Dysentery and Diarrhoea, Septic Sore-throat, Scarlet Fever, Diphtheria, Cholera and Infantile Diarrhoea.

The various bacteria found in milk may also be classified under the following heads *viz.* 1. Those that cause no apparent change in milk. 2. Those that change the flavour without changing the appearance. 3. Others that cause marked changes in both appearance and flavour. Among these are lactic acid bacteria, sweet curd producing bacteria, those that cause decomposition of casein and albumin and give off disagreeable odours and lastly those that apparently seem to have no effect on the flavour or appearance of the milk but may spread disease.

The greatest menace to the public health in some of the foreign countries through milk is tuberculosis. We in India were thought to be free from the fear of Bovine Tuberculosis but during the last few years it has become known that India is not altogether free from this menace. Many cases of Bovine Tuberculosis have been met with in the Indian Slau-

* Paper read at the Provincial Veterinary Conference, held at Madras in September 1946.

gher Houses. The recent tuberculin test conducted on the conservancy bullocks of the Madras Corporation have shown that there are many reactors among them. This shows how important it is to apply the technique of pasteurisation of milk in India wherever and whenever practicable. I say wherever and whenever practicable because pasteurisation of milk under Indian village conditions is not possible.

This leads us to the question "is sterilising the milk by boiling the only and the best way to render the milk safe for human consumption." There is no legal definition of "sterilised milk" but the term is conventionally applied to the milk that has been heated to at least 212°F or 100°C and usually higher for varying lengths of time. All, or nearly all micro-organisms, are killed by this process and the resulting milk is often bacteriologically sterile.

It has been observed that, at the boiling temperature, quite extensive changes in some of the constituent parts of milk take place. At this temperature, the milk sugar becomes caramelised, the casein and albumin are hardened, the calcium, magnesium and phosphorous salts are partially precipitated, the enzymes destroyed—all of which render the milk less digestible. Prolonged heating at high temperatures causes the destruction of vitamins C, A and D, in that order, but boiling under ordinary conditions does not destroy vitamin A. These changes are believed to interfere seriously with digestion and nutrition. Others prove to the contrary that heat exerts no deleterious effects in the digestibility of milk. There is a great divergence of opinion regarding the use of sterilised milk for children and it is true that well known observers have come to diametrically opposite conclusions. Considered from chemical and physiological points of view, it appears that milk, heated at low and moderately high temperatures for a moment, is more desirable than milk subjected to prolonged heating at a very high temperature.

Milk contains many constituents which are highly sensitive to heat. Andross (1940) in Scotland carried out some experiments on the loss that occurs on first boiling and mentions that 10 per cent of the nourishment of milk is lost on boiling. The greatest loss was in the albumen content of milk which was as much as 74·0 per cent; the loss in fat was 23·5 per cent, in proteins 13·5 per cent and in calcium 13·7 per cent.

Experiments with a view to find out the changes that occur in the chemical compositions of milk when subjected to heat during some of the common methods of processing adopted in this country, such as first boil, first boil followed by simmering for 10 minutes and pasteurisation were conducted at the Imperial Dairy Research Institute, Bangalore by C. P. Ananthakrishnan and three others in 1943.

At pasteurisation temperature, the decrease in volume was less than 0·5 per cent of the original volume. When raised to first boil in a closed vessel (95°C) the decrease in volume was 6 per cent and when the milk was simmered for 10 minutes after the first boil, the loss was 11 per cent.

Pasteurisation by the holding method caused no loss in any of the constituents of milk.

When milk was brought to first boil the loss in total solids amounted to nearly 6·5 per cent. When the milk was then simmered for 10 minutes loss in the total solids was 7·1 per cent.

The loss of fat in boiling was 11·7 per cent when the milk was brought to the first boil, but only 9·5 per cent when allowed to simmer for 10 minutes. This reduced loss in the second case is interesting and may be ascribed to the decrease in the creaming property.

The total quantity of albumin lost and not made available for consumption would amount to 37·8 per cent in the case of first boil and 44·4 per cent in the case of simmering for 10 minutes.

The loss at first boil in the total minerals was 4·8 per cent; in Calcium, it was 4·1 per cent and in Phosphorous 5·5 per cent. When further simmered for 10 minutes, the loss in ash, calcium and phosphorous was 6·8, 7·9 and 6·9 per cent respectively.

Andross (1939) found a loss of 74·13 per cent. in the albumin content when milk was brought to first boil. Kieferle (1930) states that heating milk between 100°-115°C for half an hour destroys 85·6 per cent of albumin.

Since the constituents of milk are of highest biological value the loss that occurs through boiling is a great loss indeed.

Pasteurisation.—The process of pasteurisation was first used in the beer and wine industry of France. A good deal of trouble was experienced in the preparation of these drinks as they got easily spoiled through the action of yeast and moulds. It was also known that the degree of heat necessary to kill them would also change the flavour of the product and render it unusable. Sometime in the early sixties, Louis Pasteur suggested that beer and wine heated to comparatively low temperature for a comparatively long time would overcome these defects without affecting the quality of the products. This suggestion was carried out with great success and about 20 years later, the process was applied to milk.

Definition.—Prof. Porcher has defined pasteurisation in the following manner; "Pasteurisation of milk should destroy, by the suitable

employment of heat, *practically the whole* of the bacterial flora and the *whole* of the pathogenic flora, if any, while inducing the slightest possible alteration in the physical structure of the milk or its constitution, chemical equilibrium and bio-chemical elements.

While the strict definition of pasteurisation does not define cooling, yet, cooling milk after pasteurisation to about 55° F. is a necessary part of the process, since there are bacteria left in the milk after the heating process is completed. These bacteria will multiply and increase unless the milk is cooled to temperatures at which the bacteria will not grow. *Failure to properly cool the pasteurised milk and maintaining it at that temperature until the article reaches the consumer defeats the very purpose of the process.*

Pasteurisation is also of commercial importance because milk which contains a large number of organisms may have the germs killed by the process and then the milk can be kept for a much longer time than would otherwise be possible. However, the process of pasteurisation should never be used as a cure-all for dirty milk, or as an excuse for putting on the market milk, which has an abnormally high bacterial count.

As regards bacterial efficiency of pasteurisation, the resistance of Mycobacterium Tuberculosis to heat is usually used as the basis in establishing satisfactory "exposures" since M. Tuberculosis is more resistant to heat than the other pathogens likely to be present in milk. In order to give a margin of safety and to provide for the various defects in the pasteurising plant and in the thermometers, the 'exposures' recommended for commercial pasteurisation are always above those required for the destruction of M. Tuberculosis in carefully controlled tests.

Methods of Pasteurisation

1. Flash Pasteurisation: In this the milk is momentarily exposed to a temperature of 140–160°F (60–80°C) or even higher. Neither the time nor the temperature is accurately controlled and it is unsuitable for the treatment of the liquid milk destined for human consumption.

2. High temperature pasteurisation or simply High Pasteurisation: In this the milk is heated for a few seconds to 176–185°F (80–85°C). Though the temperature is controlled rather more than in Flash Pasteurisation, there is still a considerable variation in the total amount of heating that the milk receives. This method is frequently employed in Scandinavia.

3. High Temperature Short Time Pasteurisation (H.T.S.T. Pasteurisation): In this the milk is heated for 15 to 20 seconds at 159.8–162°F (71–72.2°C). This has been largely evolved in the United States of America. In the best types of this apparatus, the time and temperature of

exposures are under automatic control and the results can be predicted with a considerable degree of certainty.

4. Stassanisation: This is a comparatively new Short Time method of processing, taking its name from its inventor Dr. Stassane. Stassanisation is actually a modification of the Flash Method of Pasteurisation and is somewhat different from H.T.S.T. method. The milk is processed in a completely closed tube being distributed in thin layers without any access to air, each layer being about 1/25th of an inch in thickness. The milk is heated rapidly under slight pressure in such a way that it is unable to lose its carbonic acid. The temperature attained is 165° F, the milk being in contact with the heating surface for 15 to 16 seconds. Rapid heating is followed by speedy cooling to a temperature of 58° F. The heating agent is water.

5. The Retorder Type of the Low Temperature Pasteurisation: This is sometimes spoken of as the Continuous Flow Method. The temperature employed is 138–150.8° F (58.9–66.0° C) and the heated milk instead of being held in a closed vessel, flows continuously through an apparatus receiving on an average 30 minutes for its passage.

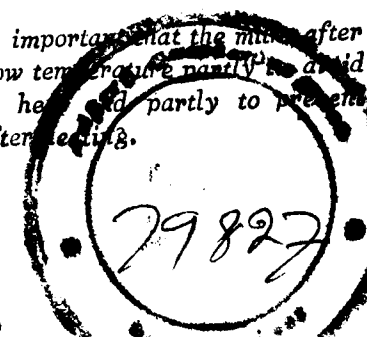
6. Holder or Holding Type of Pasteurisation: This is sometimes called Low Temperature Pasteurisation. In this the milk is heated to the same temperature as in the above method and kept at this temperature in a closed vessel for 30 minutes. The temperature varies in different countries. If as is usual in the smaller plants, the milk is held in the same vessel as that in which it is heated, the term Batch or Vat Pasteurisation is generally applied. If, as is usual, in the larger plants, the milk is held in a separate vessel from that in which it is heated, the term Pocket Type of apparatus is sometimes employed. When the milk is bottled before being heated, the process is referred to as "In-bottle method" of pasteurisation. In the Holder Process, both the time and temperature of exposure can be controlled with considerable accuracy.

In the first four of the methods described, the margin of safety is small and slight fluctuations of temperature or time of exposure may affect the efficiency of the processing. In methods 1 to 5 of the continuous flow type there can be no certainty that every particle of milk is exposed to the required temperature for the required time. Such a certainty can be ensured only by the Holder Method of Pasteurisation described under 6, where the milk after being heated to the required temperature is held at that temperature for the required time.

Whichever method is employed, it is important that the milk after being heated, should be rapidly cooled to a low temperature partly to prevent further changes in the milk caused by the heat and partly to prevent multiplication of the bacteria that are left after heating.

5L
KZ m2, n24

11.2.23.6



Advantages of Pasteurisation: (1) The milk is rendered 'safe' as all the pathogenic organisms are destroyed. (2) The majority of the non-pathogenic bacteria are also destroyed (3) The usual life of the milk is prolonged.

At the same time, it should be remembered that pasteurisation cannot make dirty milk clean. Dirty milk contains heat-resisting organisms (thermoduric) in abundance and, after treatment, such milk will soon become putrid from the multiplication of such bacteria.

Disadvantages of Pasteurisation: The only real disadvantage seems to be the loss of vitamin C. This can, however, be made good by the addition of orange juice.

Bacteriastatic Property: It is possible that a real growth-inhibiting factor may exist in fresh clean milk but its activity seems to be very much less than has been supposed by workers who relied exclusively on plate count for its measurement. The effect of pasteurisation on the multiplication, inhibiting factor seems to be negligible. Destruction does not occur till it has been exposed to a temperature of 158—167 °F. for one hour.

The statement frequently made that bacteria grow more rapidly in pasteurised than in raw milk is without adequate foundation, provided the comparison is made between the samples of the same milk before and after pasteurisation and not between different milks of different ages and different degrees of cleanliness. It is admitted that, if milk is drawn from the udder under sterile conditions, one half of it left raw, and the other half pasteurised, and both halves are inoculated with the same number of organisms, the plate count, after a given time, may be higher in the pasteurised than in the raw sample. (Allen 1916). This, however, may be explained by the presence in the raw milk of a non-specific agglutinating property which is responsible for the growth of many of the organisms in clumps. This property is destroyed by pasteurisation so that the organisms tend to separate more freely after division and therefore give rise to a larger number of colonies in the plate count. (Hobbs 1939). This large number does not mean an aggregate increase in the total bacteria.

Allen (1917) compared the rate of gas formation from lactose by coliform bacteria growing in milk. He proved that gas was formed rather more rapidly and more abundantly in pasteurised than in raw milk suggesting that pasteurisation favoured bacterial multiplication. Interesting as his results are, it is dangerous to generalise for the following reasons *viz.*, (1) they were carried out with organisms belonging to only one group (2) the number of strains examined were few and again (3) no information is given as to whether the amount of dissolved oxygen in the two milks were equalised before the inoculation of the organisms.

Nelson and his colleagues in 1935 working with milk drawn under aseptic conditions and inoculated with dirty raw milk found that pasteurisation led to some decrease in the reduction time of Methylene Blue. On the other hand, they found that the keeping quality of commercially pasteurised milk was longer than that of the certified milk, even though the average bacterial count at the time of examination was higher in pasteurised samples.

The observations of Hobbs in 1939 in which the metabolic activity of several different types of organisms was estimated by methylene-blue reduction test showed that the growth rate varied from milk to milk and from one type of organism to another. As a rule the growth rate was slightly higher in raw than in pasteurised milk, sometimes the reverse. Taking all the observations together, there was little to suggest that pasteurisation favoured the growth of organisms in milk. However this requires further observations.

Pasteurisation Plants: Thermoduric (heat-enduring) and thermophilic (heat-loving) organisms are liable to be present in varying numbers in all pasteurising plants and multiply rapidly unless extreme care is exercised. The best way to combat this trouble is to attend to the operation of the plant; cleaning it often and discontinuing or interrupting the processing at least every three or four hours for cleaning purposes appears to be the correct procedure.

No milk should be pasteurised twice because the multiplication of the "thermophiles" will thereby be encouraged.

Pasteurisation in Madras City—The only Pasteurisation Plant in Madras is that of the Lynavarm Milk Supply Union and the processing is done by the Flash Method. This is not an ideal one. In England and Wales only two official methods of pasteurisation are allowed.—The Holder Method and the H. T. S. T. Method. No milk that is not treated by one or the other of these methods in a plant licensed by the local authority is allowed to bear the term 'Pasteurised' on the bottle.

It is to be admitted that pasteurisation of milk is not suitable for village conditions since not more than one or two animals are kept by an ordinary villager and the milk produced is meant for his own home consumption. Only the excess, if any, is sold to the neighbour. I do not, however, see any reason why pasteurisation should not be practiced in large towns wherein thousands of gallons of fluid milk are distributed or sold every day to the public. To overcome the infection of milk during transport and handling, 'In-Bottle' pasteurisation may be tried.

A SHORT NOTE ON THE SHEEP OF NILGIRIS.

BY

U. S. ASWATHANARAYANAN, G.M.V.C.,
Touring Veterinary Assistant Surgeon, Ootacamund.

AND

S. RAMANARAYANAN G.M.V.C.
Veterinary Assistant Surgeon, Ootacamund.

From time immemorial the Nilgiris have been a sheep-rearing tract. The climate is temperate, the mountain pastures are in plenty, particularly in the Ootacamund Taluk, and consequently there has been a great scope for development of sheep rearing industry. It has been recently discovered by the Sheep Breeding Research Station, Poona, that the Nilgiris sheep offers one of the best types of wool in India. Hence an attempt is made in this article to bring out the characteristics of the sheep in the Nilgiris as they exist today. It should however be remembered that during the last decade, there has been a decline in the breed owing to extensive slaughter and also as a result of intensive agriculture.

The sheep are distributed throughout the district but the major portion of the stock is in Ootacamund Taluk, mostly in the Najanad area and outskirts of Ootacamund town, where there are extensive pastures. The total population of sheep, which was well over four thousand ten years ago, has come down to about two thousand and five hundred in 1945 owing to indiscriminate slaughter for meat. The shepherds keep these animals mainly for mutton and manure and they have not practised shearing of wool. It is only during recent years, when the sheep shearing unit of this Department came to the Nilgiris, that shearing was demonstrated to them. The best time for shearing is in March just after the winter, and before the onset of the monsoon in the early part of June. Only one shearing is practicable in this District.

The sheep are of a medium size, weighing about 40 to 50 pounds; their height is about 27 inches, length about 24 inches, and girth about 35 inches. They have long and broad heads, length averaging 6 inches from occipital crest to the upper edge of muzzle, breadth across the forehead averaging 4 inches. The face is of white colour devoid of wool. The apex of the neck and forehead are woolly, forming, as it were, a fur cap for the animal. The ears are elliptical averaging 4 inches at the broadest point. The eyes are prominent and bright with the muzzle of a pale-pink colour. As a rule horns are absent but a small percentage of rams and a few ewes

have short horns of about 3 to 4 inches; very rarely long and curly horns are seen in rams. The neck is short and thick and well-set on a compact strong body. The tail is uniformly flabby and devoid of a switch. It is well set on the body and extends to just above the hock. Most of the sheep have got a white fleece over the body, and yield about 1 to 1½ pounds in one shearing.

Ewes come to maturity when they are about a year old and they live up to ten years. They lamb invariably thrice in two years. One lamb at a time is the rule; rarely two may be born.

General management.—The sheep are not fed with any concentrates but they are left for grazing all day and penned at nights. Grazing is available in plenty from May to December, but from January to April there is insufficient grazing owing to frost; the animals then go down in condition. Young lambs are allowed to go for grazing along with the adults when they are about a month old. Scientific breeding has not been practised to any extent. Ewes and lambs are never kept separate either during day or night. One ram for every 30 to 40 ewes is kept in the flock for stud purposes. Castration of rams is undertaken when they are 4 to 6 months of age. The pens are constructed with enclosures either of mud walls or cuttings and loppings of trees. Zinc sheet roofing is provided to provide shelter from incessant rain and frost.



A flock of sheep grazing on the Wenlock Downs of the Nilgiris.



DR. PANGAL'S
VETERINARY INSTITUTE

26, WALLAJAH ROAD,
MOUNT ROAD,
MADRAS, 2.

A few of Dr. Pangal's specialities to all
Lovers of Horses, Cattle and Dogs.

1. "Race Horse Brand" Equitone. A valuable Blood Tonic and conditioner for Race Horses, Polo Ponies, Hunters, etc. Quite indispensable to keep the horses in hard work always fit.
Price per 2 lb. tin Rs. 5.
2. "Tendon Lotion" For Inflamed and Sprained Tendons, Ligaments and joints in Horses. Price per lb. bottle Rs. 2.
3. "Electric Mange Cure" An excellent remedy for all kinds of Mange and is a specific for Follicular Mange. Acts like magic.
Price per bottle Rs. 2.
4. "Scented Pulvex" Tick specific. A wonderful Tick destroyer.
Price per tin Re. 1-4.
5. "Canatone" Vitamin Mineral Food for Dogs.
Price per 1½ lb. tin Re. 1-8.
6. "Cough Electuary" A Specific for Cough and Catarrh in Horses.
Price per lb. Rs. 8.
7. "Bovotone" Best Tonic Powder for cattle containing Minerals and Vitamins.
Price per 2 lb. tin Rs. 2.
8. "Mange Dressing" A specific for all kinds of Mange.
Price per big bottle Rs. 3. Small bottle Re. 1-8.
9. "Dr. Pangal's Resolvin" Indicated in absorbing—without firing—Splints, Ring bones, Spavins, Enlarged Joints, Sprained Tendons and Ligaments; and cures Sore Shins, Capped Elbows and Hocks.
Price per 4 oz. bottle Rs. 8.
10. "Dhum Dhum" A specific for Dhum, i. e., heavy breathing, so common in horses. Acts like magic.
Price per 2 lb. bottle Rs. 6. 1 lb. bottle Rs. 3.
11. Anodyne Paste for Horses.—Indicated in treating swollen joints, inflamed tendons and ligaments (Work not disturbed).
Price per 3 lb. tin Rs. 4.

For Other Specialities, Please Apply For Literature.

When writing to advertisers, please mention this Journal.

THE
INDIAN VETERINARY JOURNAL

(The Journal of The All-India Veterinary Association)

Vol. XXIII

MAY, 1947

No. 6

Editorial

WANTED—AN INDIAN VETERINARY COUNCIL

With the dawn of independence for our country and with the reorganisation of the Veterinary Education and Veterinary Services that has been going on during recent years in the different Provinces, a time has arrived when it has become necessary to organise the profession, co-ordinate it and give it a correct guidance in all its activities. An officially recognised and statutory body in the form of an Indian Veterinary Council has become a vital necessity for the profession. The suggestion to form such a Council "to take on the full control of the profession in India on a par with similar Councils in Western countries" was first mooted at the Third All-India Veterinary Conference held in December 1924 by Mr. A. D. MacGregor in his Presidential Address. The suggestion was acclaimed and adopted by the Conference which passed a resolution "authorising the President of the Conference to address the eminent men in India requesting for their opinion and co-operation for the formation of an Indian Veterinary Council". Unfortunately, no further action appears to have been taken on the subject and consequently no progress has till now been made in that direction during all these 23 years since the suggestion was first made.

A stage has now been reached when the profession should seriously take up this question of having an Indian Veterinary

some personality with bright beaming countenance, he was loved and feared alike. He had, it seems, the endearing habit of addressing his students "My boys" and took an immense delight in talking to them freely and without restraint. That gives us a clue to his real nature. And what a difference to some of the latter-day Administrators who had an immense delight in keeping themselves aloof and apart, thinking it, or rather, expressing it, as *infra dig* to mingle or even move with their men! These Administrators never *talked* to their men but only *talked at* them; they tried to cover their incompetency with an air of superiority but, of course, without much of a success. As Abraham Lincoln said, you can fool some people for all time, you can fool all people for some time, but not all people for all time. The camouflage wears out soon and the person comes out in his own real colours.

Col. Gunn being an officer of the Army Veterinary Department was essentially a disciplinarian, and a good disciplinarian at that: but there was *human touch* in that discipline. He had an innate desire to learn things at first hand and took a delight in mingling with the ryots very freely. The late Pattagar of Palayakottai, the well-known breeder of Kangayam cattle, used to talk to me often, in very endearing terms, about Col. Gunn and his passionate love for animals. It appears the Colonel used to discuss the minutest details of the various aspects of Animal Husbandry and speak very appreciatively about the practice obtaining in this land. His book on Cattle of Southern India, which is a mine of information on the subject, is a living testimony to his capacities and abilities. This is in shining contrast with the work of some of his successors in office. I remember one officer who, at the fag end of his career, wanted to see what the lesions of Foot and Mouth Disease looked like! He had not bothered to see it all his life, although Foot and Mouth Disease is quite so common in this country! Visiting the countryside, studying the local conditions and finding out the requirements of the ryots and of the men working under him—these have been quite foreign, and even an anathema, to a good number of Administrators. They contented themselves

with their files and the notes contained therein and never troubled to know what exactly is obtaining in the villages where alone the real India lives. It is a shame and a pity, is it not?

(To be continued.)

RETIREMENT

H. C. GANGULEE, B.H.V.S.

Pro. H. C. Gangulee, B.H.V.S., who retired recently was born at Agra, United Provinces, in 1893. After receiving early education in the General Assembly Institution (now Scottish Church College) at Calcutta, he joined the Bengal Veterinary College, from where he qualified as a Veterinary Graduate with uniformly brilliant results and was commended by the late Principal Col. F. Raymond, C.I.E., for his excellent progress. He obtained Government Scholarships throughout the course of his study and was the recipient of prizes in Anatomy, Animal Management, Materia Medica, Surgery, Shoeing, Medicine, Physiology, Breeding and Rearing, Hygiene and other subjects as well as the best students prize. He was deputed as an Assistant Research Officer to investigate into a peculiar form of elephant disease at Khandmohal in Angul District in Orissa. He underwent Post-graduate course at the Imperial Institute of Veterinary Research, Mukteswar; Patho-Bacteriological Laboratory, Calcutta Medical College; Pasteur Institute, Assam; and at the Indian Association for the Cultivation of Science, Calcutta. He has contributed a large number of papers of varied professional interest to British, French and Indian Veterinary Journals. He was the recipient of an award from Edinburgh in recognition of an original contribution made by him and received also special mention for researches in Parasitology in the Annual Report of the Board of Scientific Advice for India as well as in the Report of the Progress of Agriculture in India. He was for many years a Member of the Committee of Management of the Bengal Veterinary College, as well as a Member of the House-staff. He had worked in practically all the Departments of the

Bengal Veterinary College and Hospitals and became the Principal of the institution. Latterly he came the Professor *cum* Research Officer of the College and Hospitals from which position he retired in December 1946. He was a good horseman and also a polo-player.

A gentleman of great character and high intellectual attainments, Mr. Gangulee was loved and respected alike by his students and colleagues. We wish him a long period of healthy retired life.

WE ANNOUNCE THE INTRODUCTION OF
UREA SULPHAZIDE OINTMENT

5%

For topical use in infected wounds, ulcers, burns etc. Urea Sulphazide ointment contains Sulphanilamide, Urea and Azo dye chemical compound. The combination is therefore most suited to give a therapeutic effect of each ingredient enhanced by synergism.

NOT FOR EYE AFFECTIONS

Obtainable in one ounce containers ready for immediate use.

UNION DRUG CO. LTD. CALCUTTA.

T'phones:
Cal. 1159.
Cal. 4975.

285, BOWBAZAR STREET
CALCUTTA

T'Gram
"Benzolic"
Cal.

Clinical Articles

PROSTATIC ENLARGEMENT IN A DOG TREATMENT WITH STILBOESTROL DIPROPIONATE

BY

FRANCIS JOSEPH, G.M.V.C., P.G., (Mad.),
Lecturer in Animal Hygiene,

AND

S. N. VAIDYANATHAN, G.M.V.C.,
(Addl.) *Asst. Lecturer in Animal Hygiene,*
Agricultural College, Coimbatore.

Stilboestrol dipropionate—a synthetic product—is remarkable for its effect both by mouth as well as by injection.

It is reported as an effective substitute for the natural follicular hormone of the ovary and is advised in the treatment of all conditions attributable to deficient secretion of ovarian follicular hormone. It has, in addition, been shown to have an inhibitory effect on carcinomatous prostatic enlargement and metastases therefrom. The usefulness of the preparation in this condition is believed to be the result of its inhibitory effect on the androgenic hormones, and comparable with, though possibly less effective than, the effects of orchidectomy.

Enough records of its useful application on different veterinary subjects are available and Smythe (1945) reports of its use in the successful treatment of anal adenoma and prostatic enlargement in a dog as well as mammary neoplasms in a bitch.

Smythe (1946) details some further notes on the use of Stilboestrol dipropionate in neoplastic and non-neoplastic conditions met with in canine practice and opines that "prostatic enlargement dependent on glandular hypertrophy or hyperplasia reduces in size with the very rapid disappearance of symptoms, but may recur after a period of several months, when they usually again respond to Stilboestrol therapy. Prostatic carcinoma appear to be uninfluenced by stilboestrol injections".

The following is a record of a case of enlargement of the prostate in a dog successfully treated at the Agricultural College Veterinary Hospital, Coimbatore, South India, with Stilboestrol dipropionate.

A wire-haired terrier dog, aged about six years, was presented at the hospital on 6-6-1946 with the following symptoms, which were in evidence for some weeks previously; difficulty in urination and defecation accompanied by painful and prolonged straining, urine passed in drops, fits of screaming noticed on those occasions.

Treatment was commenced with the oral administration of urinary antiseptics and diuretics. At the end of a month there was no relief of symptoms.

Palpation of the abdomen revealed a rounded, solid mass of the size of a marble in the pelvic region. Digital examination per rectum showed that the enlargement was confined to the prostate. There was no evidence of suppuration in the gland. Neither was there anything to suspect carcinogenesis.

Stilboestrol dipropionate—10 mg.—was injected intramuscularly on 6-7-1946 and it was supplemented by an oral dose of 1 mg. of the drug every morning and evening in tablet form continuously for 12 days except on the 11th when a second injection of 10 mg. of stilboestrol was repeated.

At the end of the first week of treatment the enlargement of the prostate was found to be smaller. End of the second week revealed that the swelling had practically disappeared. The dog had by now obtained complete relief of symptoms.

Examination on 2-7-1946 showed complete disappearance of the swelling in the region of the prostate.

The treatment ceased on 20-7-1946 and the trouble had not recurred up to the end of November 1946 when an examination of the dog was possible.

References.

- Smythe, R.H. (1945). Treatment of certain canine neoplasms by Stilboestrol. *Vet. Rec.* 10th Mar. 1945. Vol. 57, No. 10, p. 155.
 " (1946). Some further notes on the use of Stilboestrol in Canine practice. *Vet. Rec.* 10th Feb. 1946. Vol. 58, No. 7, p. 75.

TAPE WORMS IN CANINES—THERAPEUTIC VALUE OF REMEDIES USED

BY

S. RAMANARAYANAN, G.M.V.C.,

Veterinary Assistant Surgeon, Ootacamund.

Tape Worms infestation in canines is a very common condition which often causes unthriftiness, dermatitis, etc. The intelligent owner fears the danger of human infestation from these worms and is very particular of getting his pet thoroughly freed of them. In dealing with these worms, the Veterinarian has from time to time used various drugs. The following are the common ones used by me for some time now. (1) Male Fern, (2) Areca. (3) Arecoline Hydrobromide, (4) Nemuro, (5) Cestarsol, (6) Tenaline and (7) Kamala. I would like to give my experiences with these anthelmintics.

Male Fern.—This is the drug of choice in human practice. It is also extensively used in canine practice but it has given way to other drugs. It is given in an oily emulsion in an empty stomach after a proper preparation of the patient. Action takes place in from 2 to 3 hours. Its disadvantage is mainly its smell. It is also not easily administered; sometimes, in a few minutes after administration, delicate dogs dribble violently from their mouths and become greatly depressed. Toxic symptoms such as dyspnoea and twitching of muscles have occurred, necessitating the use of prompt remedial measures in the form of stimulants and demulcents.

Areca.—Areca is a very handy drug procurable from any bazaar. Betel nut, which is sold as 'Vettu Pakku' (Tamil), is freshly and finely powdered and administered to dogs in empty stomach, mixed with plenty of treacle, after previous preparation of the patient. The dose is calculated at 1½ to 2 Grs. per pound body weight. It would be a good plan to give a few grains—5 to 15 grs.—of Potash Bromide in syrup, ten to fifteen minutes prior to the administration of this vermifuge. This invariably prevents the Areca being vomitted, which otherwise, often occurs. Action takes place in 15 to 40 minutes; the evacuations are mucoid and the worms are passed in clusters.

Arecoline Hydrobromide.—This drug I prefer giving in a liquid form. For convenience, a solution of 2 grs. to ounce, is kept ready and the dose is computed at 1½ minims per pound body weight. In addition to the usual preparation of putting the patient on liquid diet the previous day, the drug is administered two to three hours after a light meal of meat. Action takes place in 15 minutes to half a hour and is powerful. Sometimes even within 10 minutes of the administration of the drug, the first motion occurs

and is followed in quick succession by more evacuations with expulsion of worms. Occasionally, even before any motion occurs, the worms are seen wriggling out from the anus when the dog is seen running in a frenzy as though to relieve a sticking object. The drug is a very reliable one.

Nemurool.—This is a Bayer's Patent, which is not available now in the market. It was a great boon in the pre-war days in the treatment of tape worms. The tabloid was administered half an hour after a milk diet and after preparing the animal in the usual way. Action took place in 15 minutes to half an hour. The results were uniformly good but extreme care was necessary in the computation of the dose. There were cases of collapse which needed prompt remedial measures.

Castarsol.—(Arecoline Acetarsol M. & B.) This was placed in the market a few years back. The dose recommended by the makers viz. one tabloid for every 15 pound of body weight with a maximum of 4 tabloids, has not given satisfactory results in my hands. After extensive trials and experience, I prefer a working dose of one tabloid for every 12 pounds, with a maximum of 5 for an Alsatian, and 6 for a Great Dane. Action takes place in 20 to 40 minutes. A warm soap water enema is often found necessary, but this is due more to the disinclination of the animal to have the evacuation. The rectal contents have then been found to be loose. Castor oil as advocated by the makers was administered in a few cases that had no action in an hour.

Tenaline.—This is another patent preparation with arecoline as its base, and is available both in liquid and capsule forms. The liquid is palatable and is handy for administration. The dose is computed at 2 minims per pound body weight. The action is very mild and at no time toxic effects were observed.

Kamala.—This drug has been used in very delicate toy dogs and not as a routine treatment, the dose given being from 15 to 20 grains in syrup. The action is very mild and the worms are expelled in from one to two hours.

For complete eradication of tape worm, it is necessary that a second treatment is undertaken at the end of a month. Areca, or preparations with Arecoline, are not used in subjects below six months of age, or on any animal having catarrhal condition of the intestines. In their administration, great care should be exercised, as the alkaloidal content in areca is not constant. Any untoward toxic effects are dealt with promptly. The toxic symptoms are—frequent and repeated evacuations, often without effort, relaxed anus, salivation and distressed respiration. The physiological antidote, atropine, 1/200 to 1/100 of a grain in 2 or 3 cc. of warm saline, should be injected subcutaneously. Other measures such as stimulants, warmth and absolute rest should also be given.

SULPHONAMIDES IN FOOT AND MOUTH DISEASE OF CATTLE.

BY

P. C. TRIPATHI, B.Sc., G.B.V.C., P.G. (Lah.)
Veterinary Assistant Surgeon, Shahjehanpur, U. P.

It is generally believed that Foot and Mouth disease is a very mild affection which should not give room for much anxiety, that the disease spreads out rapidly and subsides equally rapidly, and that the period of incapacity for work and the consequent damage to the animal is not much. This belief is not shared either by the field-worker or by the owners of affected animals who know only too well that the economic loss caused by this disease is indeed very great. The period of actual suffering from the disease and the consequent period of incapacity is often a great strain both to the animal and to its owner and any attempt to mitigate and shorten this period is to be welcomed. In this short note, a record is made of one such attempt by the author by the use of Sulpha drugs.

About 150 cases in all were treated systematically, up to the date of preparing this note, using chiefly powder forms of Sulphanilamide, Sulphadiazine, Sulphapyridine (M & B), Sulphathiazole (Cibazol) and Thiazamide paste (M & B), as local applications, supplemented by internal administration of the common sulphonamides.

The cases were classified as mild, moderate and severe in accordance with the manifestation of the symptoms as seen clinically.

	Number of cases
Mild	51
Moderate	95
Severe	4
Total	150

Technique adopted.—The mouth lesions were first cleaned carefully and thoroughly with Lotio Potassi Permanganas followed by a solution of Potassi Chloras. Then, Sulphonamide powder made into a paste, with honey or glycerine as a base, was applied all over the lesions thoroughly. This was repeated for the next few days twice daily.

The foot lesions were cleaned well with Lotio Cupri Sulphas and all sloughed material, if any, were removed as far as possible. They were then dried well with rectified spirit. Thereafter, Sulphonamide ointment, chiefly Thiazamide paste, was applied thoroughly and repeated every day. Care

was taken that the lesions were, as far as possible, cleaned of all pus and debris every time a fresh dressing was applied.

Internally, a full dose of Sulphanilamides or Sulphapyridine (Vety.) powder was administered thrice daily for two to three days depending on the severity of the case.

The period of affection and incapacity in the various classes of cases which could be followed closely was as follows:

Cases treated with sulphonamides.

1. Total number of mild cases under observation: 14.

No. of cases.	Period of affection.	Period of incapacity.
2	24 hours	3 days
8	36 hours	4 days
4	48 hours	4 days
Total 14	Average 37.7 hours i.e. 1.57 days.	Average 3.86 days

2. Total number of moderate cases under observation: 22.

No. of cases.	Period of affection.	Period of incapacity.
6	3 days	5 days
16	4 days	6 days
Total 22	Average 3.73 days	Average 5.73 days

3. Total number of severe cases under observation: 4.

No. of cases.	Period of affection.	Period of incapacity.
1	5 days	8 days
1	6 days	9 days
2	7 days	9 days
Total 4	Average 6.25	Average 8.75 days

Cases treated without sulphonamides.

1. Total number of mild cases under observation: 12.

No. of cases.	Period of affection.	Period of incapacity.
2	3 days	10 days
8	4 days	12 days
2	5 days	15 days
Total 12	Average 4 days	Average 12.15 days

2. Total number of moderate cases under observation: 24.

No. of cases.	Period of affection.	Period of incapacity.
8	5 days	20 days
16	7 days	22 days
Total 24	Average 6.33 days	Average 21.33 days

3. Total number of severe cases under observation: 4.

No. of cases.	Period of affection.	Period of incapacity.
2	10 days	25 days
2	12 days	30 days
Total 4	Average 11 days	Average 27.5 days

N. B.—The period of affection is intended to denote the length of time the animals were clinically diagnosed as suffering from the disease and the period of incapacity as the period of time the animals were unfit for average work on account of the disease or its direct sequelae, there being of course no sharp line of demarcation between these two conditions as usually encountered in the field. Only cases which were under close observation have been taken into consideration for the above classification.

Summary of results achieved.—(Comparative):—

	No. of cases (Total of all cases Mild, Moderate and Severe).	Average period of affection.	Average period of Incapacity.
Treated with Sulpha drugs.	40	3.85 days	8.11 days
Treated without Sulpha drugs.	40	7.11 days	20.33 days

Conclusion:—

About 150 cases of Foot and Mouth disease in cattle were treated with Sulpha drugs in which 40 cases (mild, moderate and severe) were intimately followed during the whole course of treatment. From amongst the large number of cases treated without these drugs, 40 typical cases were also closely followed. The end results, both as regards the actual period of disease and consequent incapacity for work, were consistently good when Sulpha drugs were used. The average period of incapacity was reduced to less than seven days, whereas in cases where Sulpha drugs were not used, the average period of incapacity was about three weeks.

This remarkably shortened period of the actual disease and its sequelae with Sulphonamide therapy warrants a more extensive field trial for this method of combating Foot and Mouth disease. The comparatively low cost of the treatment, if we rightly consider the immense loss on account of the disease and its attendant sequelae, is also a point for consideration.

BOVINE THEILERIASIS

BY

B. RAMAIAH, G.M.V.O.,
District Veterinary Officer, Vizagapatam.

During the years 1941 and 1942, I had an opportunity of treating 20 animals—5 cattle and 15 buffaloes—in Vizag District for Bovine Theileriasis and the following short note will, I am sure, be found interesting.

History and Symptoms.—Cases attended the institution in the various stages of the disease. The disease was ushered in with pyrexia ranging from 103 to 107°. The appetite was not much impaired unless the pyrexia was very high. What was most prominent and attracted one's attention was the condition of both the eyes. They were blood shot, the eye-lids were swollen, the conjunctiva was oedematous, the cornea cloudy and there was intense photophobia with a mucopurulent discharge from the eyes.

This condition lasted for a week when the fever abated a little. Thereafter the inflammation of the eyes gradually lessened, but the cornea was found to turn opaque. In another few days, the fever completely subsided leaving a dense white opacity of the cornea. By this time the animal became much debilitated and thin. In a couple of cases there was an occasional cough while in another two cases definite lung symptoms were noticed. There was nasal discharge and rattling in the chest with cough and dyspnoea terminating in death. One pregnant animal aborted. All these complications were noticed in buffaloes in which the disease appeared to be more severe. No enlargement of the lymphatic glands was noticed externally. The disease ran a chronic course ranging from 2 to 4 weeks.

Diagnosis.—Blood smears from the auricular vein were sent to the Imperial Veterinary Research Institute, Mukteswar, from a few of these cases. "Organisms resembling Theileria mutans and annulata" were found in those smears.

Treatment.—To control the pyrexia, intravenous injections of Acridine and Trypan Blue (in doses of 40 to 50 c.c. of a 1% solution) were administered but they did not seem to have any specific effect in controlling

the disease. Oral administration of Liquor Arsenicalis and Acid Carbolici were tried in some animals with not much of a success. However, they had some effect in gradually bringing the temperature down. The eyes were treated with Z.A.B. solution, Silver Nitrate solution, and Hydroxid flav and Ac. Boric. The general condition was also attended to.

With the above treatment a few cases were successfully treated when they were in the initial stages and were discharged cured without any damage to the eyes.

In 1944, I saw two white calves aged four and six months which showed pyrexia, lachrymation, and enlargement of the pre-seapular lymph glands. One of them died and the other was cured. Smears taken from the lymph gland were sent to the Principal, Madras Veterinary College, who reported "Koch's Blue bodies present".

I would be glad to hear if a disease exhibiting similar clinical symptoms especially in buffaloes has been observed by any others and if so the causal agent observed by them. I should also like to know if Theileria produce such severe clinical symptoms.

Association News

UNITED PROVINCES VETERINARY ASSOCIATION.

Proceedings of the 14th Annual General Meeting of the United Provinces Veterinary Association held at Lucknow on 14, 15 and 16th October, 1946.

The following delegates attended :—

- | | |
|--|--------------------------|
| 1. Mr. T. J. Egan
(President, 1st meeting) | 14. Mr. R. P. Singh |
| 2. " B. N. S. Chowdhary (Chairman,
Reception Committee) | 15. " R. P. Sinha |
| 3. " Sardar Bahadur Sardar Udam
Singh | 16. " A. W. Hameed |
| 4. " K. C. Sen Gupta | 17. " Mohsin Ali |
| 5. " K. Govinda Rau | 18. " H. C. Joshi |
| 6. " S. H. Qureshi | 19. " Mohd. Athar Khan |
| 7. " Shamsuddin | 20. " Ali Hasan Khan |
| 8. " Mohd. Abraham | 21. " Saadat Khan |
| 9. " N. R. Michael | 22. " Hadiyar Khan |
| 10. " M. L. Verma | 23. " Mohd. Naim |
| 11. " S. M. H. Naqvi | 24. " Ameer Singh |
| 12. " Hari Har Singh | 25. " D. N. Bhatt |
| 13. " K. A. Raza | 26. " Ibrahim Ali Khan |
| | 27. " D. P. Yadav |
| | 28. " Khazan Singh Yadav |
| | 29. " E. S. David |

- | | |
|------------------------------|----------------------------|
| 30. Mr. Z. M. Khan | 78. Mr. Kunwar Bahadur |
| 31. " D. P. Kapoor | 79. " S. D. Tyagi |
| 32. " Syed Ali Rizvi | 80. " D. S. Tomar |
| 33. " H. P. Kapoor | 81. " J. P. Sharma |
| 34. " H. N. Kapoor | 82. " R. B. L. Shrivastava |
| 35. " R. L. Arora | 83. " Budh Ram |
| 36. " J. P. Chowdhary | 84. " H. M. Badola |
| 37. " N. B. Saxena | 85. " B. K. Shrivastava |
| 38. " Mohd. Sulaiman Malik | 86. " B. D. Kapri |
| 39. " K. M. Roy | 87. " H. H. P. Shrivatsava |
| 40. " Indra Gupta | 88. " L. M. Dwivedi |
| 41. " Balbir Singh | 89. " J. M. Dass |
| 42. " Q. S. Balyan | 90. " M. Tahwar Ali |
| 43. " I. K. Ansari | 91. " B. Sinha |
| 44. " V. D. Sharma | 92. " W. A. Kidwai |
| 45. " Shamsbadul Hasan | 93. " Jamil Ahmad |
| 46. " T. S. Shastry | 94. " G. K. Gupta |
| 47. " Tej Bahadur | 95. " O. S. Shrivastava |
| 48. " Ali Hyder Jafri | 96. " J. P. Kukrgi |
| 49. " Z. A. Ansari | 97. " S. D. Bhardwaj |
| 50. " K. D. Pandey | 98. " Nasir Hussain |
| 51. " B. B. Singh | 99. " Kesheo Ram |
| 52. " B. P. Singh | 100. " K. D. Narain |
| 53. " A. P. Pandey | 101. " Anwar Uddin |
| 54. " R. S. Misra | 102. " Yusuf Hussain |
| 55. " S. B. L. Kakrania | 103. " S. H. Naqvi |
| 56. " S. Dayal Singh | 104. " G. P. Shrivastava |
| 57. " C. S. Saxena | 105. " K. H. Zaidi |
| 58. " G. Singh | 106. " P. C. Mukherjee |
| 59. " Indra Gupta | 107. " S. M. Prasad |
| 60. " G. N. Prasad | 108. " Chhajju Singh |
| 61. " M. G. Sinha | 109. " Mohd. Afrahim |
| 62. " B. P. Verma | 110. " S. N. Mathur |
| 63. " Mehd. Yakub | 111. " Junaid Abbasi |
| 64. " K. C. Dass | 112. " S. N. Bhattacharya |
| 65. " C. S. Lall | 113. " J. B. Prasad |
| 66. " Bhavneshwar Singh | 114. " D. S. Shrivastava |
| 67. " J. S. Shrivastava | 115. " M. S. Dwivedi |
| 68. " S. A. H. Rizvi | 116. " N. S. Varma |
| 69. " P. A. Singh | 117. " Mohd. Main Khan |
| 70. " R. G. Mehrotra | 118. " H. E. Charles |
| 71. " Mohd. Yusuf Khan | 119. " R. N. Shrivatsava |
| 72. " Satish Chandra Manglik | 120. " J. Singh |
| 73. " Mahipal Singh | 121. " C. W. Broach |
| 74. " J. D. Bisht | 122. " M. A. Shakoar |
| 75. " Mahmud Ali Khan | 123. " J. L. Chaturvedi |
| 76. " Ilfifur Nabi | 124. " J. L. Govil |
| 77. " M. S. Bhatnagar | |

The conference commenced at 4 P.M. on Friday, the 14th October 1946 in the premises of Biological Products Section, Badshahbagh, Lucknow.

T. J. Egan Esq., Adl. Director of Animal Husbandry, United Provinces on an invitation from B. N. S. Chowdhary Esq., Chairman of the Reception Committee occupied the presidential chair amidst applause. Mr. B. N. S. Chowdhary, Chairman of the Reception Committee read out an address of welcome in the following words:—

Mr. President and Gentlemen,

34 long years have elapsed since this Association saw the dawn of its life. It grew tremendously, prospered and progressed due to the untiring efforts and co-operation of its members. It got love, sympathy and inspiration from all corners. All went well till it reached the age of 22 in the year 1934, when the fateful 13th conference of the Association was held. Since then, for these 12 long years, the Association has been lying, for some reason or other, in a dormant state; perhaps uncared for as if it had been exiled. All these years it was in the dark. Efforts for its revival during the war time could not succeed due to hundreds of unforeseen and unparalleled difficulties. During these dark and stormy days, to our utter sorrow, we lost some of our valiant soldiers. The destiny was cruel to us to snatch away such noble and valuable souls in such grave and difficult circumstances. We had to pass through hard times.

The storm is at last over now and the dark threatening clouds have cleared. Due to the ceaseless, untiring and unflinching efforts and zeal of some of the members of the Association we have been able to steer our ship safely on its course of progress and the Association has been able to tide over the difficulties, pass through the storm and see the light again though still dim. Friends, if, with fervour and courage, you continue the ceaseless efforts you have been making these days, I am sure, bright days are ahead of us.

Two or three decades ago, our profession was feared and hated by the poor, ignorant and illiterate villagers. It was really a hard job for our workers to do their duty. The times have now changed and people have begun to understand things and to appreciate the work done by the veterinarians. They have come to recognise the value of the service rendered by the officers of the Veterinary and Animal Husbandry Departments. But, alas our services are not yet fully appreciated by the Government and our plight remains much the same as what it was before.

But it is no use to continue moaning about the past. We hope for the best and look forward to bright days ahead. Honest labour coupled with honesty of purpose never goes in vain and you can take it for granted that you will certainly be rewarded for all your labours quite soon and at no distant period.

Brothren, envy not others. Do not find fault with others. It contracts one's mind and degenerates his soul. No, we shall not make ourselves so small. We must, and we do, aspire to do our duty unflinchingly in the best way that lies in our power. Our Motto is *To Serve*, not only the cause of humanity, but also the cause of all living beings. This has been taught to us by our elders and we have taken the lesson to heart.

My thanks are due to you all for participating in this Conference and making it a success and for the patient hearing that you have given to the few words I have spoken this evening.

With these words, Gentlemen, I resume my seat and pray Almighty God to help us in the mission of our life and also to give fair wind and fair weather so that the ship of our Association may go on sailing forth over the rough seas of times with peace and progress to the cherished goal. May God bless our Association, Amen.

After this, the acting General Secretary Mr. K. A. Raza spoke as follows :—

Mr. President and Gentlemen,

We have great pleasure in according the most cordial and hearty welcome to you all. We are very fortunate, indeed in having Mr. Egan to preside over our deliberations to day inspite of other demands on his valuable time. We are really very thankful to him for so kindly accepting our invitation. He is a source of immense encouragement to this reborn Association.

This Association was formed in the year 1912 and it consists of veterinary graduates serving in the United Provinces. Due to some reason or the other, the Association ceased to function from the year 1934 and could not be revived till now. It is due to the extra-ordinary efforts of some of our colleagues that it is showing signs of life and activity again, after a long period of suspended animation, and this annual general meeting is being held to recommence its activities. We will be failing in our duties if we do not thank those colleagues. They deserve our sympathy and appreciation. We are fortunate enough that this Association is being revived at a very opportune time when the popular Ministry has taken charge of the reins of administration of the province and it is upto the profession to keep the Government informed of the various means of advancing the profession and developing the livestock industry of the province.

Aims and Objects.—The aims and objects of the Association are :—

1. To improve the health and breed of the Livestock and thereby improve the condition of the farmer and ultimately the health of the nation.

2. To promote the professional knowledge of its members.
3. To create an *esprit-de-corps* amongst its members.
4. To improve the status of the members of the Veterinary profession.
5. To co-operate with other Veterinary Associations of the country in the advancement of the Veterinary profession.

Besides these, there are several other advantages of holding an annual general meeting. Such a meeting serves as a common platform for bringing together professional brethren and enables them to hold discussions on professional subjects and difficulties. It provides an opportunity for new and old members to meet, to exchange thoughts and experiences and to make united efforts for the common cause of achieving our objects.

Since the revival of the Association we have so far received donations amounting to Rs. 1,060/-. We have also sent a representation of our Association to the Pay Commission of the United Provinces.

This Association is not solely concerned with advancing the selfish self-centered interests of the profession but to improve the technical and professional ability, standing and qualifications of its members, no less than to secure for them just and equitable conditions of service; to be more frank, to try to secure for its members that degree of remuneration which is in consonance with the quality of their work and their value to the community at present. Very little consideration is accorded to the Scientific and Educational attainments of the veterinary graduates unlike the medical profession. The Association is not only striving to raise the salary of the members of the profession but is also endeavouring to secure a status for our men which will attract the best products of the country and will offer opportunities for the full development of the service as one of positive animal health. Some revision of the scale of pay of the members is essential and imperative; for "Discontent never breeds success". One of the important ingredients of an efficient and contented service is that there shall not be any financial difficulties to prevent individuals from playing their full part in the community to which they belong. Seeing our plight in the past, we are grateful to our Director Sir Frank Ware for having truly lifted us out of very low level. During his regime, he has transformed us from a pure Veterinary Service into an Animal Husbandry service and entrusted us with the highest task of public utility service which in a way has entailed very heavy duties and burden on us for the development of livestock industry of the Province. To expect the profession to bear all this in a contented manner, our Association strongly feels that in order to encourage the best talents in the Province to join the profession and to make the services contented it is essential, particularly during the present post-war high prices,

that our scale of pay needs further revision immediately. The example of Punjab can be profitably quoted here. That province possesses the best livestock industry in the country. This is solely due to the untiring efforts of the contented profession in that Province. Their scales of pay and prospects of promotion are worth copying if we are to build up a similar profitable livestock industry in this Province—a role which has now been assigned to the profession here.

In spite of all representations and frequent appeals, we have suffered in several ways *viz.*, (1) Non-Veterinarians were recruited for filling up higher posts (2) No one was thought suitable for studies overseas even when the Government was anxious to send some and advertised for it. This is highly discouraging in as much as it makes the present staff zeal-less and discontented. It may appear correct to a certain extent, and in particular circumstances, but it cannot be said to be a sound policy. If Government feels handicapped of suitable hands for higher posts, they should select persons of merit from the subordinate staff and get them trained in advance for such posts or else they should encourage them to go on study leave and qualify themselves. It is the subordinate staff who are in direct touch with the public and who require better professional equipment. In the marketing, the poultry, and the fisheries sections of the department, no Veterinarian has been given any opportunity to show his capability, while in the central Agricultural and Marketing department, the livestock section is all manned by members of this profession and several other posts of responsibility are also occupied by them. The claim of our colleagues in the Veterinary Department for promotion as compared to those of the staff in the newly developed sections of the same department are being ignored. For example, *a person after getting three months training in poultry is given the same scale of pay as a Veterinary Graduate who has spent at least three years in a Veterinary College.* Another non-Veterinarian of about three years of service in one of the sections of our department has recently been promoted to a gazetted post, while a veterinary graduate having all the requisite qualifications and experience is required to put in 15 years of service to qualify for a gazetted post. Does it not amount to sheer injustice? The plea that this is of a temporary nature is no argument.

Consider for a while the work of a Veterinary Assistant Surgeon. He has hospital work, he attends to outbreaks of contagious diseases, inspects slaughter houses, conservancy cattle, hackney carriages and stallions, attends fairs, shows, and markets, does propaganda work, and daily renders advice to farmers on all aspects of livestock; in addition, attends to correspondence, maintains registers, files and what not? Right from a livestock adviser to a dresser and a clerk. All these for a ridiculous pay of Rs. 80/- per month. The condition of our brethren in the research sections in a town like Lucknow or on the farms is highly deplorable. They are the

hard hit persons who are groaning under the stress of circumstances. In addition to pay, they get a petty sum as house-rent allowance which is absolutely inadequate. Will the authorities concerned judge for a moment whether this petty sum is attractive enough for research or farm work?

The benign Congress Government is out to serve the people in general and the farmer in particular. Our mission is also the same. We are here to serve the dumb animals which is real gold for 90% population of India. Surely, we will be doing a great injustice if we do not feel for them and improve their health. We are here to achieve that end. Not only that, we also serve the public in general by ensuring the health of livestock and thereby maintaining a proper supply of vital good stuffs such as milk, ghee, eggs, fishes mutton etc. It is a tragedy when our profession is so useful to the public, and we are always ready to serve the society, our status is kept so low. We hope and pray that our efforts will not go in vain and a day will come when the livestock industry will flourish and our profession will be realised as really an asset in the national economy of India.

The speech of the acting General Secretary being over, the house passed unanimously, all standing, the resolution of condolence on the sad and sudden demise of the following:—

- | | |
|-------------------------------|------------------------------------|
| 1. Mr. Khan Bahadur Sheikh | Late President of the Association. |
| Niaz Mohd. | |
| 2. Mr. Gardar Udai Singh | |
| Sidhu ... | General Secretary. |
| 3. Mr. Abdulla Qureshi | Finance Secretary. |
| 4. Mr. S. M. Raza Husain | Joint Secretary. |
| 5. Mr. S. Salman Hasan Naqvi. | 12. Mr. S. M. Tahir Mirza. |
| 6. " G. R. Khan | 13. " H. M. Tahir Beg. |
| 7. " Rai Kedar Nath | 14. " S. M. H. Alvi. |
| 8. " G. B. Roy | 15. " N. Rajpal. |
| 9. " G. M. Mukherjee | 16. " Manon. |
| 10. " Jalauddin | 17. " V. S. Gupta. |
| 11. " S. M. Shah | 18. " U. S. Rawat. |

The house then congratulated the following recipients of honours:—

1. Sir F. Ware, Kt. C.I.E., F.R.C.V.S.,
2. Mr. R. L. Kaura, M.B.E., B.V.Sc., M.R.C.V.S.
3. Sardar Bahadur Sardar Udam Singh.

The following professional papers were then read and discussed before the house:—

1. "Dyspepsia"—O. S. Shrivastava. G.B.V.C.
2. "Use of Penicillin in Veterinary Practice"—C. W. Broach G.V.Sc.

After these papers the messages from the following gentlemen wishing success for the revived Association received by the Acting General Secretary were read out to the house :—

1. Mr. T. S. Davies ... *Ex-Vice President of the Association.*
2. Mr. M. R. Mahajan ... *Planning Officer, United Provinces.*
3. Mr. Capt. P. N. Bhal ... *Deputy Director Vety. Services, Allahabad.*

The president then, winding the day's proceedings, spoke as follows.—

Gentlemen,

I appreciate the revival of the Association just after 12 years and I appreciate the efforts of the Vice-President Mr. T. S. Davies and the Acting General Secretary Mr. K. A. Raza. I wanted to improve the department and its lot but this was in such a mess that it necessitated first to improve the members professionally and technically. Now seeing that this effort has been successful, I will put forth my best efforts for improving the Department. I am all out for such an organisation as this and I will see that the Veterinary Profession gets its due recognition in India and am ready to further its cause with all my heart and soul. I have great hopes from you all and I am sure you will, by your whole hearted co-operation and vigour, undertake the new task of development of livestock and help the profession and the public to the best of your abilities.

Library will also be needed to keep us in touch with the rest of the world. I would therefore suggest that you put up your efforts for a really good central library and also start running a journal as of old, so as to propagate your views. I will suggest here for your information that the professional articles in the foreign periodicals really deserve reading and studying by you all.

Replying to the points raised by the Acting General Secretary, I will say here that no doubt your responsibilities have been increased manifold. I really sympathise with you and could tell with honesty that it took nearly twelve years to bring your pay to Rs. 80. Regarding the posting of a non-technical man to a gazetted post you need not spoil your breath. My policy has always been to select an efficient man for the post and, in any department, efficiency should be the hall mark of policy. This is one thing that cannot be sacrificed. But in this particular case I may tell you that this was a temporary one and it had to be taken up. We can change any time. It is not a permanent policy but due to war and non-availability of men it was done. Regarding overseas studies, although people were recommended I do not know why they were not called for interview. But if the

practice of Government continues to send students outside, I see no reason why you do not get a chance.

Gentlemen, I shall support your cause and your Association as long as I am here.

The day's business came to an end with a vote of thanks to the President for his sympathetic views and encouraging remarks for the Association.

The house then adjourned to meet again next day.

Second day—15th October 1946.

The second day's proceedings commenced at 9 A.M. with Mr. B. N. S. Chowdhary in the chair. The house took up the various resolutions for discussion and adopted No. 1-6 resolutions given in appendix A. The election of the office bearers and members of the Executive for the year 1946-1947 then took place.

1. Mr. L. Verma ... *President*
2. Mr. S. M. H. Naqvi ... *Vice-President*
3. Mr. K. A. Raza ... *General Secretary*
4. Mr. J. L. Govil ... *Joint Secretary*
5. Mr. R. P. Singh ... *Finance Secretary*
6. Mr. Q. A. Bari ... *Auditor*

Editorial Board of the U. P. Veterinary Magazine :—

7. Mr. A. W. Hameed Editor (Urdu Section) and Chief Editor.
8. Mr. C. W. Broach (English Section)
9. Mr. Tej Bahadur (Hindi Section)

Before taking up election of members to the Executive body the house passed resolution No. 7, Appendix A, and in the light of that, elections were held as follows :—

Executive Committee Members

1. Meerut Circle— Mr. D. P. Kapoor
Mr. H. P. Kapoor
Mr. Balbir Singh
2. Bareilly Circle— Mr. J. D. Bisht
Mr. Ali Hasan Khan
Mr. H. C. Joshi
3. Lucknow Circle— Mr. Athar Khan
Mr. L. M. Dwivedi
Mr. E. S. David

4. Allahabad Circle— Mr. Hafis Mohd. Naim
Mr. Hadiyar Khan
Mr. B. P. Verma

The house next dealt with the question of examination of old accounts and pay commission questionnaire. Resolution No. 8, Appendix A, was passed in connection with old accounts and according to resolution No. 9 Appendix A, a sub-committee consisting of the following members was recommended to study the questionnaire.

- | | |
|-----------------------|---------------------|
| 1. Mr. M. R. Mahajan | 2. Mr. K. A. Khan |
| 3. Mr. S. M. H. Naqvi | 4. Mr. C. W. Broach |
| 5. Mr. H. C. Joshi | |

Further Mr. M. R. Mahajan and Mr. K. A. Raza were elected to appear before the Pay Commission on behalf of the Association. The house discussed and passed resolution No. 10 in this connection.

The meeting then adjourned to re-assemble again at 4 P.M.

In the after noon the Conference re-assembled under the presidentship of Mr. M. L. Verma and took up various resolutions for discussion and passed the resolutions from 11 to 20 in Appendix A.

The house then adjourned to meet again next day.

Third day—16th October 1946.

The third day's proceedings commenced at 9 A.M. with Mr. S. M. H. Naqvi in the chair. The following professional papers were discussed.

1. "Use of Goat's milk in Veterinary Practice"—T. S. Shastry, G.B.V.O.
2. "Artificial Insemination"—P. C. Mukherjee, G.B.V.O.

The house then took up resolutions for discussion and passed resolutions from No. 21 to 43. Appendix A.

In the evening, with a vote of thanks to the President and the delegates, a group photo and light refreshment in honour of the delegates, the conference came to end.

MUNNA LAL VERMA,
President.

(APPENDIX A)

RESOLUTIONS

1. Resolved that Mr. T.J. Egan and Sir Frank Ware, Kt. C.I.E., F.R.C.V.S., be requested to become the patrons of this Association.

2. Resolved that the subscriptions for Annual Membership and Magazine be separate.

3. Resolved that the annual subscription for the Association be rupees six only.

4. Resolved that the subscription be realised by the circle Veterinary Inspectors and that it be sent to the Secretary of the Association by the 15th of April positively.

5. Resolved (a) that a magazine be published and that it be bi-monthly.

(b) that it consist of sections in English, Urdu and Hindi with 16 pages allotted to each section.

(c) that the annual subscription of the Magazine be Rupees four and that the editing of the Magazine, its size and numbers, be left to the discretion of the Board of Editors.

6 Capt. P. N. Bhal's resolution that this Association would have two branches, Viz One for Gazetted Officers, another for Non-gazetted Officers because by so doing the interest of both can be served better, was put to house for discussion and opinion. The house dropped this resolution as such and, instead, adopted the following:—

Resolved (a) that the Gazetted Officers of the U.P. Veterinary Service have every right to become members of this Association by virtue of their being Veterinarians, but if they like, they can have their own Association and that this Association has no right to debar these officers from becoming members of this Association.

(d) that Capt. P.N. Bhal be suitably replied and a copy of resolution No. 6(a) be enclosed for reference.

7. Resolved that the Executive Committee be represented by three members from each circle thereby making the strength to twelve.

8. Resolved that the Executive Committee be authorised to form a Sub-Committee to check old accounts which are in a very topsyturvy condition.

9. Resolved that the following be the members of a sub-committee to study the pay Commission Questionnaire :—

- (1) K. A. Raza.
- (2) M. R. Mahajan
- (3) S. M. H. Navqi
- (4) H. C. Joshi
- (5) C. W. Broach

10. Resolved that Mr. K.A. Raza and Mr. M.R. Mahajan be requested to appear on behalf of this Association before the Pay Commission.

11. Resolved that the Veterinary Staff posted at the farm, laboratory and stock-men training class who are at a great disadvantage and have no amenities of life, be given special allowance as follows :—

- | | |
|----------------------------------|-------------|
| (a) Veterinary Inspector | Rs. 80 p.m. |
| (b) Veterinary Assistant Surgeon | Rs. 50 p.m. |
| (c) Stock-men | Rs. 25 p.m. |

12. (a) Resolved that U.P. Government be moved to allow the U.P. Veterinary Stock-men to form an Association of their own.

(b) Resolved that the Secretary Stock-men's Association, Meerut be informed accordingly.

13. Resolved that a post of a Technical Assistant to the Director of Animal Husbandry, United Provinces (in Class II of U.P. Veterinary Service) be sanctioned and that all the papers, regarding posting, transfer, promotions and other technical matters be dealt through him and that this post be filled from the subordinate veterinary service by promotion.

14. Resolved that the Government be requested to give us a courtesy right to Prefix "Doctor" before our names as is done in the Medical and Public Health Departments.

15. Resolved that the Director, Animal Husbandry, U.P., be requested that, when merits are equal, promotions and special training be given to members of the service according to their seniority.

16. Resolved that the Hospitals be graded in three classes and a list be prepared according to the importance of the hospital and the postings done step by step.

17. Resolved that an unfettered right of appeal against orders of supersession be conceded and the result communicated to the member concerned with a copy to the Association.

18. Resolved that the establishment list of the department be prepared according to the seniority of service of members in the different cadres with mention of their educational qualifications. The list should be revised and published annually and supplied to each member, if necessary on payment, and to the Association.

19. Resolved that at least 15 per cent selection grade posts in each cadre be created at its maximum grade (fixed) for senior members.

20. Resolved that the Veterinary Hospitals, particularly the Sadar ones, be provincialised, well equipped and maintained on the standard of medical institution.

21. Resolved that the Veterinary Inspectors

- (a) be recognized as Gazetted Officers and
- (b) be provided with tents, two clerks, two peons, typewriter and furniture for office etc.

22. Resolved that the pay of the staff be revised as under.

- | | |
|-----------------------------------|---------|
| (a) Veterinary Inspectors | 300-500 |
| (b) Veterinary Assistant Surgeons | 150-300 |
| (c) Veterinary Compounders | 40-75 |
| (d) Veterinary Stock-men | 40-75 |
| (e) Menials | 30-40 |

23. Resolved that a compensatory allowance of Rs. 40 p.m. be paid to all Veterinary Assistant Surgeons who are either not holding charge of hospitals or entrusted with additional duties.

24. (a) Resolved that a fair chance be given to the graduates of Indian Veterinary Colleges to compete for 1st class posts without insisting on foreign qualifications.

(b) Resolved that 75 per cent of superior posts be reserved for the members of the Sub-Veterinary Service.

25. Resolved that all the marketing and poultry posts be given to Veterinary Graduates as is the practice in the Central Government as these officers are better qualified for the posts and can discharge their duties more efficiently.

26. Resolved that the restriction of 15 years' service for promotion to gazetted posts be reduced to 10 years' as has been done in some other departments of the province.

27. Resolved that the designation of Veterinary Inspector be changed to District Livestock Officer.

28. Resolved that the control over the services of the compounders in the Veterinary Hospital be handed over to the Department in a quasi-Government way in the interest of the efficient working of the hospitals and in the interest of Public work.

29. Resolved that all the posts of Dairy, Ghee and Poultry sections be given to Veterinary Stock-men who are better qualified for the post.

30. Resolved that the General Secretary, U.P. Supervisor Kanunge Association be informed that this U.P. Veterinary Association cannot be affiliated to the proposed federation of all the Associations of the U.P. Subordinate Services (Executive) as this is not a subordinate service (Executive) Association.

31. Resolved that the Government be approached to provide a suitable building permanently for the office and the residence of the Veterinary Inspector and other officers like the Deputy Director, Assistant Director, Livestock Production and the Senior Poultry Inspectors and that for the residential portion of the Veterinary Inspector the rent be deducted from the pay according to rules.

32. Resolved that all the Veterinary Inspectors be empowered to grant casual leave to their subordinates as is in force in Meerut Circle.

33. Resolved that no license for plying the Hackney carriages be granted unless the animal and the harness are passed by a Veterinary Graduate as fit for use.

34. Resolved that 50 per cent of the charges for operations (including injections) where they are levied, be paid to the Veterinary Assistant Surgeon in Charge of the Hospital.

35. Resolved that the present private practice rules for the Veterinary Assistant Surgeons be revised in consultation with the sub-committee appointed by the Executive Committee.

36. Resolved that the present designation of the Veterinary Graduates of the Indian Veterinary Colleges be changed to "Veterinary Surgeon" instead of "Veterinary Assistant Surgeon" as there are no Veterinary Surgeons in the Department to whom they may be called as Assistants.

37. Resolved that consequent on the expansion of the Department and its change over to the Animal Husbandry Department, an Animal Husbandry Manual be prepared in consultation with this Association or its representatives to be selected by the Executive body of this Association.

38. Resolved that all the local bodies (Municipal, District Board Town Area Committee and Notified area) be requested to grant an inspection fee of Rs. 2 per animal used in Hackney carriage.

BIHAR VETERINARY ASSOCIATION

Group Photo taken at the Ninth Provincial Veterinary Conference held on 30th & 31st December 1946 and 1st January 1947



Standing 2nd row:—Haveswari Prasad, A. Lall, A. K. Verma, R. B. Singh, R. J. Singh.

Standing 1st row Left to Right:—N. K. Lall, L. R. Paramanik, R. K. Shaw, K. D. Narain, B. M. Prasad, B. N. Sinha, Md. Tayab, T. P. Banerjee, S. M. Hussein, R. C. S. C. Prasad, Sharfuddin Ahmed, V. N. Singh, H. D. Khan, V. N. P. Sinha.

Sitting Left to Right:—G. Prasad, M. A. Rahim, Q. Khan, M. Naimuddin, H. K. Roy, S. K. Sen (President), Basir Ahmed, N. D. Singh, P. Topno, K. P. Singh, A. U. Ahmed.



BABU HEMANTA KUMAR ROY, G.B.V.C., P.G. (Mad.)
Assistant Director of Veterinary Services, C.V.D., Bihar
Who retired on 14-11-45.



C. PERUMAL PILLAI, G.V.Sc.,
Dip. Agric.,
Asst. Govt. Veterinary Surgeon, Ceylon,
Who has proceeded to Philippine University
for Advanced Studies in Veterinary Science



M. L. KOHLI, L.V.P.,
Asst. Research Officer,
Indian Veterinary Res. Institute,
Who has been selected by the C.V.D. Punjab
for higher studies in Applied Genetics in U.K.

39. Resolved (a) that Veterinary Assistant Surgeon be allowed to treat Anti-Rabic cases and levy fee for them, and
(b) that the Government be approached to provide Anti-Rabic Treatment free of charge for bovines, only when brought to hospital as the agriculturists are unable to afford heavy expenses on this treatment, all other animals to be charged.
40. (a) Resolved that the following be added to Rule '11' in the last "or have retired from the Department".
(b) Resolved that the words "two years" in Rule "13" be replaced by "one year".
41. (a) Resolved that the office of the Financial Secretary is absolutely necessary and it be created to help the secretary in the efficient discharge of duties with regards to finance. The Financial Secretary will be one of the members of the Executive body.
(b) Resolved that there should be two Joint Secretaries to help the Secretary in his work.
42. Resolved that Lucknow be fixed for the next General Meeting in April.
43. Resolved that this conference authorises the General Secretary to send copies of these resolutions to the press, and to the authorities concerned.

L. GOVIL,
Joint Secretary,
for President,

BIHAR VETERINARY ASSOCIATION

Proceedings of the Ninth Provincial Veterinary Conference held under the auspices of the Bihar Veterinary Association at the Bihar Veterinary College, Patna, on the 30th and 31st of December, 1946 and 1st January, 1947.

First Day 30th December, 1946.

The conference commenced at 10 a. m. on Monday the 30th. December, 1946 in the west lecture theatre of Bihar Veterinary College which was tastefully decorated. The following delegates were present:—

- | | |
|------------------------------|-------------------|
| 1. Mr. S. K. Sen, President. | 3. Mr. M. K. Roy. |
| 2. Col. S. M. Ishaque | 4. " Q. Khan. |

- | | |
|--------------------------|--------------------------|
| 5. Mr. N. D. Singh. | 20. Mr. A. K. Verma. |
| 6. " S. M. Moosa. | 21. " Hareshweri Prasad. |
| 7. " R. B. Singh. | 22. " V. N. Singh. |
| 8. " B. M. Prasad. | 23. " S. M. Hussain. |
| 9. " R. C. S. C. Prasad. | 24. " R. J. Singh. |
| 10. " G. Prasad. | 25. " M. A. Rahim. |
| 11. " H. D. Khan. | 26. " L. R. Parmanik. |
| 12. " A. Lall. | 27. " V. N. P. Sinha. |
| 13. " Sharfuddin Ahmad. | 28. " B. Narain. |
| 14. " Md. Tayab. | 29. " T. P. Banerjee. |
| 15. " P. Topno. | 30. " M. Naimuddin. |
| 16. " R. P. Singh. | 31. " R. L. Prasad. |
| 17. " S. M. Hussain. | 32. " B. S. Sharma. |
| 18. " K. D. Narain. | 33. " A. U. Ahmad. |
| 19. " R. K. Shaw. | |

Letters were received from several members regretting their inability to attend the meeting and wishing success for the conference. Among the visitors were.

Hon'ble R. C. Singh, Minister for Irrigation.
" Jaglal Choudhari, Minister for Excise.

Mr. Hamid.

Dr. A. C. Choudhari.

Mr. M. B. Bose.

Mr. V. Srinivasan, and
the Staff and Students of Bihar Veterinary College.

Mr. S. K. Sen, B.Sc., M.R.C.V.S., Animal Husbandry Officer, Bihar, Principal of the Bihar Veterinary College and President of the Association welcoming the Hon. Dr. Mahmud, Minister for Development and requesting him to declare the conference open made the following speech :—

Hon'ble Dr. Mahmud and Gentlemen,

I feel very happy in my pleasant task, as the President of the Bihar Veterinary Association, to welcome you among our midst on the occasion of the opening of our ninth Annual General Meeting. I call it an annual general meeting though for the last 8 years since 1938 no meeting was convened and the activities of the Association remained more or less paralysed for various reasons, the chief among them being the last war. A great deal of events have taken place since 1938 which had profound repercussion on the lives of the human races all over the globe. The effects of the war had reflected very severely on the political and economic condition of this country and left it in a turmoil. Now that we are in the threshold of independence, we are looking forward to more changes in the political life and economic structure of our people and society. It is our utmost desire

that the Veterinary profession should play an important role in rehabilitation and in shaping the future of our country for the ultimate happiness and prosperity of our people.

The immediate problems which confront every country in the world are those relating to food production and human nutrition, so that large scale famines along with its associated calamities can be averted. The world wide food shortage has brought into being an international appreciation of the primary importance of proper human nutrition and with it a awakened realization that agriculture ranks first amongst all the industries the world over. International discussion have recently taken place in Copenhagen, where U. N. F. A. O. have been considering plans elaborated by its Director Sir John Boyd Orr, who, while commenting upon the vast and unsurpassed contributions which the Veterinary profession could make to the solution of many problems facing F. A. O. by the effective control of major diseases of livestock said, "there was no more important job facing us to-day than to get the Veterinary profession to eliminate diseases of animals."

In India, Sir, the Veterinary profession is preparing itself to take over the entire responsibility of livestock production and animal husbandry. With this end in view the Veterinarians are actively considering the need for reorientation of education in Veterinary Science and Animal Husbandry. The recent trends of thought on Veterinary education has brought into prominence the question of including Animal Husbandry subjects in the curriculum of Veterinary Colleges.

Now coming to the question of curriculum for Veterinary education, we all demand in one voice that the present 3 years course should be extended to 5 years on Matriculation or 4 years on I. Sc., and that the Bihar Veterinary College should be immediately affiliated to the Patna University, so that the standard of efficiency and the status of the profession are raised to those of other Colleges in India and abroad. The Education Committee of the Imperial Council of Agricultural Research after 4 years of hard work has prepared and circulated a syllabus for adoption in all Colleges intending to have a course ending in a degree. We want that this course should be immediately introduced. The College here should be well equipped to impart a sound and complete course of training in Veterinary Science and Animal Husbandry suited to the special peculiarities of this country. The graduates of this College will then be able to fill all the vacancies in higher posts which are at present reserved for men qualified in foreign Colleges. The need for hunting seats in colleges abroad for general training should altogether cease.

Feeling is often expressed that the profession has not, so far, attracted suitable men. I frankly admit this position. The reasons for this are that unlike the U. K., U. S. A. and other countries, the Veterinary profession in

India has no opening for private practice and the qualified graduates have to take up Government posts carrying a meagre salary. How can you expect Sir, ambitious youngmen to spend 3 or 4 years in a Veterinary College and then receive a salary of Rs. 50/- a month. In spite of their love for Veterinary work, many youngmen choose other prosperous avenues of life. Recently the scale of the pay of the subordinate Veterinary Officers have been raised in the Punjab, Madras, Bombay and United Provinces and their scales are however much above the revised scale of Bihar. The gloomy future prospects, along with hard life and low pay are the chief causes which do not make it possible for a large number of admission of bright youngmen to this college. The Post War Development plans of livestock production and disease control envisage the appointment of a large number of Veterinarians. How are we going to get qualified men in such numbers unless we make the profession more attractive? One and the only remedy is to rectify the pay scales and allow a living wage to these who are to dedicate their lives for the good of man and animals. Another form of encouragement to the profession will be to increase the number of superior gazetted posts and train up our men to fill them. The training abroad of Veterinarians in Veterinary Science and Animal Husbandry in order to make them fit for posts which are to be created in the Post War Developmental plans should receive Government's active consideration.

The question of research in animal diseases and livestock production is of vital importance to the profession. Research and development are closely wedded and they must proceed side by side. Research at the Imperial Veterinary Research Institute has enabled us to produce Goat Tissue Vaccine against Rinderpest and now the American workers have been able to produce more cheaply the Virus in egg embryo instead of goats. Similar Vaccine for Ranikhet disease in poultry will soon be available in larger scale. A great hindrance and fear of poultry keeper will be once for all removed, if vaccination is well planned all over India with a view to its eradication. There are many diseases which are yet to be tackled. Rinderpest still remains one single factor for the loss of a large number of ruminants. There are other problems like nutritional deficiencies, parasitic infestation and certain other ailments, which affect the productivity of livestock. Research and development in nutrition, genetics and management of livestock under conditions obtaining in this country are necessary. We cannot go on for ever receiving our inspiration from the Scientists of Europe and America. There is an immediate necessity for increasing the number of Veterinary Officers in this province so that there can be one Veterinary Officer for 25,000 head of cattle, as recommended by the Royal Commission on Agriculture. Along with this, it is imperative that the dual control on the Veterinary work in the province should cease and all the hospitals and dispensaries should be provincialized i.e., the entire control of Veterinary work should be placed under Government and District Boards asked to pay

their contribution. This procedure will bring about uniformity in work irrespective of the financial condition of individual Boards.

Sir, we want a reorientation of policy and more democratic outlook on the part of Government towards our profession and last of all, Sir, a wage that will keep our body and soul together to enable us to deliver the goods most willingly and efficiently.

With these few words, Sir, I request you to open the Conference.

The Hon'ble Dr. Syed Mahmud then declaring the Conference open delivered the following speech in Hindustani:—

Mr. Sen and Gentlemen,

It was with very great pleasure that I accepted the invitation extended to me by the Bihar Veterinary Association to participate in this conference by declaring it open. I thank you for the honour you have done me.

Before saying anything, I must impress upon you that Indians have no justification to speak in any non-Indian language unless they are speaking to non-Indians.

Veterinary Science and Animal Husbandry occupy high priority in all agricultural countries in general and in India in particular because of its climatic conditions. These departments have suffered terribly from criminal negligence in the past and I am sorry to say that I have not been able to do anything during the last Congress regime. But I am determined to accelerate the pace of progress, as on this depends to a large extent the economic prosperity of the nation. Government intended to start a well equipped dispensary in every thana, and if funds do not permit of achieving this objective immediately, it would at least increase the number of Veterinary Dispensaries as early as possible. As an interim measure I want that the "Salhotries" should be given training for five to six months by the Veterinary Department so that they may be in a position to perform vaccination and other minor treatment of animals without doing any harm to them and thus enable the farmer to have his cattle treated at a cheap cost. It is also the desire of Government to intensify the training in the Veterinary College to bring it at par with other colleges in India.

I would like to tell you for your information that I have recommended for the affiliation of the Veterinary College with the Patna University and of raising its standard to a degree course. I am glad to say that it is soon going to be a *fait accompli*.

The objects of your conference are manifold. You will in this conference confer on various matters of interest for the upliftment of the

profession. I wish to assure you that I will endeavour my best to sympathetically consider all your proposals. It is high time that your services to the general public are appreciated and your department placed in a position it so well deserves.

I thank you once again for enabling me to associate myself with your conference. I have great pleasure in declaring this open.

Mr. S. M. Ishaque then proposed a vote of thanks to the Hon'ble Dr. Syed Mahmud and visitors and in doing so spoke as follows in Hindustani:—

Hon'ble Dr. Mahmud, Hon'ble Ramcharitra Singh, Hon'ble Jaglal Choudhari and Gentlemen,

The pleasant task of proposing a vote of thanks has been entrusted to me and I indulge in no form of convention when I tell you how grateful, elated and honoured we feel over your presence to-day in our midst. We are grateful to you, Sir, for being able to find time to attend this function, in spite of your important official duties and intense engagements. Your association with our departmental activities during the short Congress regime in the past and also at present has raised in us great expectations and we hope that you will be pleased to allow the Veterinarians a living wage to keep their body and soul together to play an important role in the Post War Reconstruction and Grow More Food Schemes. I thank you once again for the trouble you have taken to come this morning to open the conference.

Finally on behalf of the Reception Committee, I thank you all gentlemen for so kindly responding to our invitation and thus honouring us in such an abundant measure.

After this Mr. S. K. Sen, occupied the Presidential Chair amidst applause. Mr. S. M. Ishaque, Chairman of the Reception Committee, in welcoming the delegates said:—

Mr. President, Gentlemen and Friends,

On behalf of the Provincial Veterinary Association I have great pleasure in extending to you all, who have assembled here a cordial and hearty welcome. I am very happy that so many of you found it possible to respond to our invitation. The fact that you have come here from mofussil stations, in spite of great inconveniences and at considerable expenses, is really an indication of the great interest that you have for the profession. In these days of rationing the Reception Committee had no easy task of making your short stay here convenient. I do request you all to make light of the small inconveniences which you may experience during your stay at this place.

I hope you will all agree with me when I say that it is an unique opportunity for us to witness this Veterinary Conference opened by the Hon'ble Minister, Development and Employment Department, who has found it possible in the midst of his multifarious duties, engagements and heavy office work to be here and honour the conference. He has therefore placed us under a deep debt of gratitude. During the last popular Ministry we had the proud privilege to serve under such a popular and kind Minister and now again due to good luck not only, the popular Congress ministry is again well on the saddle in the province, but there is a National Government, though a provisional one, at the centre. We are meeting here to-day under auspices unparalleled in the history of the Conference as we have the Minister in charge of our services here to perform the inauguration ceremony and a distinguished personnel of this province in the centre at the head of Agriculture and Veterinary Departments and I sincerely and fervently hope that there would be a correct re-orientation of the attitude of the Government and that the Veterinary Services in the province will no more receive the step-motherly treatment but the status of the service raised to compare favourably with other progressive provinces in India.

The importance of our profession and our usefulness in all nation building activities is well-established and accepted by people all the world over. People are inclined to believe that the only duty of the Veterinary Surgeon is to treat an ailing animal. It is only a small fraction of the work expected of him. The more important part of his duties comprise management of livestock with special reference to their feeding, breeding and maintaining them in a state of health to ensure an adequate supply of wholesome milk, meat and eggs for human consumption and production of good quality wool and hides and motive power for tilling land. It would not therefore be wrong to say that the Veterinarian is the guardian custodian and the doctor of livestock on which depends the prosperity of the country.

In a country like India there is a vast field for the advancement and expansion of the Veterinary Science, but, contrary to expectation, this department is in the same moribund state all over and in our province in particular. It is only recently that other provinces have realised the vast potentialities of the Veterinary profession as the custodian of the immense amount of animal wealth and accelerated the pace of progress, but the questions relating to livestock and Animal Husbandry have been viewed by our administrators with indifference and apathy, and the members of the Veterinary Services have been kept ill-paid ill-equipped and neglected. While all other departments of Government expanded under the stress of war, the Veterinary Department was given the cold shoulder; although it was appreciated that the personnel of the services would play no mean part in making the "Grow more Food Campaign" a success initiated by the Government to get over the food crisis.

The whole Veterinary Department requires a reorganisation on the same lines as in the Punjab, Madras and United Provinces and the pay prospects and other service conditions of the personnel revised and brought in a level with them. I sincerely hope that the Hon'ble Minister, who has studied the rural economics of the province and possesses an iron will and strong determination to enhance village upliftment works, will take up our questions at his earliest convenience.

I extend to you all once again a hearty thanks and hope you will allow me to conclude with the prayer "May our profession prosper every day".

After giving a suitable reply to the address, the President proceeded to conduct the business of the day. Two Sub-Committees were formed with nine members in each to examine and frame resolutions and revise the old bye-laws and present them to the general body for consideration and adoption.

The conference broke at 1 P. M.

In the afternoon the two Sub-Committees met in the same hall to discharge the work allotted to them and rose at 4-30 P. M.

With this the first day's session was over.

Second Day 31st. December, 1946.

The second day's proceedings commenced at 9-30 A. M. with Mr. S. K. Sen in the chair. The amendment recommended by the byelaws Sub-Committee were taken up one by one for discussion amongst the members present and adopted.

The conference reassembled at 2 P. M. and took up the resolutions detailed in appendix A for discussion. After a lively discussion the resolutions were finally adopted by a majority of votes.

With this the Second Day's Session was over.

Third Day-1st. January, 1947.

The conference met at 9 a. m. with the New Year's greeting to all present from the President which they reciprocated. The Secretary then presented his report which covered a period of seven years, and showed a closing balance of Rs. 935-6-3 in the Imperial Bank at Patna and Muzaffarpur.

The election of the Office bearers and members of the Executive Committee for the new year then took place. Mr. S. K. Sen expressed a desire to stand aside as he had been President of the Association for a long time and wanted others to get a chance. But Mr. G. Prasad voicing the

unanimous feeling of the house requested him kindly to accept to continue as the President as his lead and guidance were considered absolutely necessary at a time when the Association was reviving from a dead slumber and thinking of a reorientation of its policy and methods of approach of the problems confronting the Veterinary profession in the province.

On this, his name was proposed for the Presidentship by Mr. G. Prasad. This was seconded by Mr. V. N. Singh and was carried unanimously.

The following office bearers were then elected :—

Mr. Q. Khan, Vice-President	Mr. N. D. Singh, Member
" B. M. Prasad, General Secretary	" M. A. Rahim, "
" A. K. Verma, Joint Secretary	" G. Prasad, "
" B. N. Sinha, Treasurer	" R. J. Singh, "
" H. K. Roy, Auditor	

Mr. B. N. Sinha then proposed a vote of thanks to Mr. S. K. Sen, President of the Conference. He said that members of the Association were very grateful to him for the trouble he took to preside over the deliberations of the meeting for long hours on three days in succession inspite of his intense occupation as Principal of the Bihar Veterinary College and Animal Husbandry Officer to the Government of Bihar and for extending hearty co-operation and all available facilities to make the Conference a success. Continuing he said that his able and mature guidance has always been a tower of strength and source of inspiration to all. With this the Conference ended.

In the afternoon a group photograph of the members attending the Conference was taken and all the members and staff of the Bihar Veterinary College were entertained to tea by a group of members of the Association. The function which was a grand success took place in the Common Room of the General Hostel of the College.

APPENDIX—A

THE BIHAR VETERINARY CONFERENCE.

Resolutions passed.

1. This Conference places on record its sense of loss at the passing away of Messrs. L. K. Acharya, S. A. Azhar, S. A. Rahman, B. D. Roy and B. Rahman.
2. Resolved that the Government be moved to accept the bye-laws amended by the Bihar Veterinary Association in the last annual sitting held during the month of December, 1946.
3. Resolved that the Local Government be moved to enact laws in regard to the control of contagious diseases in animals on the lines drafted by

the Animal Husbandry Wing of the Board of Agriculture and Animal Husbandry in the year 1940 (a copy of which is enclosed herewith for reference.)

4. Resolved that as the procedure decided upon by the Government for the operation of interim time-scale of pay introduced as per their letter No. 2049 D. dated 8/9th. July, 1946 does not benefit the senior officers, the Association urges the Government for the sake of equity and justice to prescribe the scale of pay for all the officers on the length of service, as has been done in the case of Sub-Deputy Magistrates vide their letter No. 4109-A. dated 15-12-1944.

5. Resolved that in consideration of the present financial position of the members, the arrears of subscription be written off and the subscription of the current year, 1947, be realised in advance within the quarter ending 31st. March, 1947, with rupees two as arrear fee.

6. The members consider that the revised scale of pay for non-gazetted staff is wholly inadequate and recommend to the Government to adopt the following scale of pay and introduce it according to the length of service of individual members.

Rs. 150— $\frac{1}{2}$ —260— $\frac{1}{2}$ —350.

7. Resolved that Government be moved to designate the present Veterinary Inspectors as District Veterinary Officers and place them in class II of the Bihar Veterinary Service as is done in Madras.

8. Resolved that the Government be moved to abolish the present professional examination as it is considered absolutely unnecessary which will be apparent from the fact that no such system exists in any of the provinces in India.

9. Resolved that the Government be moved to abolish the present system of fixed T. A. allowed to Touring Veterinary Assistant Surgeon and replace it by the general system of T.A. under Bihar and Orissa Service Code.

10. Resolved that Government be moved to provide rent free quarters to the Touring Veterinary Assistant Surgeons preferably in the Hospital compound or grant a reasonable amount in lieu thereof.

11. Resolved that Government be moved to regulate the re-employment of retired hands in such a way as not to affect adversely legitimate promotion, privileges, rights etc. of members of the services.

12. Resolved that the Executive Committee be authorised to place before the Provincial Pay Commission, the question of pay, allowances and

other service conditions affecting the members of the Bihar Veterinary Association. The Executive Committee should co-opt two members for this purpose.

13. Resolved that the Government be moved to take over the entire administration of the Veterinary institutions in the province from the District Board as the dual control has proved beyond all doubt non-conducive to the interest of the departmental work.

RULES AND REGULATIONS OF

THE BIHAR VETERINARY ASSOCIATION

1. This Association shall be called the Bihar Veterinary Association.

2. The aim and objects of the Association shall be:—

- (a) To provide means for the advancement of Animal Husbandry and Veterinary Science and Arts.
- (b) To raise and uplift the status of the Veterinary and allied profession.
- (c) To safeguard the rights and interests of the members of the profession and to improve the general condition.
- (d) To create an *sprit-de-corps* amongst its members.

3. Membership:—

- (a) Every graduate of Veterinary Science, who holds diploma from any recognised College in India or abroad, is eligible for membership to the Association and also a person having technical qualifications allied to Veterinary Science provided that he is in service in the Veterinary and Animal Husbandry Departments.
- (b) The intending person shall submit his application to the Secretary of the Association along with a sum of Rs. 2 only as admission fee for being elected as a member to the Association.
- (c) The Secretary shall put up such applications of intending memberships before the Executive Committee of the Association which will duly record its verdict over it.
- (d) Every member admitted under rule 3 (b) shall pay Rs. 4 as annual subscription.
- (e) Any member who fails to pay the subscription fee under rule 3 (d) for one complete year ending 31st December shall cease

to be a member of the Association, but he shall be re-elected a member by the Executive Committee after payment of his arrear subscription together with a sum of rupee one for re-election.

- (f) The General Body of the Association shall have the powers to remove any person from its membership by three-fourth of the vote of the members present in the meeting.
- (g) No person shall be considered to have ceased to be a member of the Association on account of his retirement or resignation unless he himself resigns from membership in writing.

4. Office bearers :—

- (a) The Office bearers of the Association consist of :—(i) A President (ii) A Vice-President (iii) A Secretary (iv) A Joint-Secretary (v) A Treasurer and (vi) An Auditor.
- (b) All the office bearers must be elected from amongst the bonafide members of the Association.
- (c) Ordinarily, the President shall preside over the meetings of the Executive Committee and the General Body of the Association. But, in his absence, the Vice-President, and in absence of both of these, the Executive Committee shall elect any of its members as a President for the said meeting.
- (d) The Secretary shall be responsible for all the records, calling of the meeting of Executive Committee or of General body of the Association etc.
- (e) The Joint Secretary shall carry on the duties of the Secretary in his absence or shall do the part of the duties allotted to him by the Secretary.
- (f) The Treasurer shall keep an account of all receipts and expenditure of the Association. He shall present a statement of account duly audited annually at the meeting of the General Body of the Association or in absence of the latter to the Executive Committee.
- (g) The auditor shall check the account presented by the Treasurer and submit his report to the Executive Committee or the General body as laid down in rule 4 (f).
- (h) The Office bearers shall be elected in the meeting of the General Body of the Association whenever it is held. Any vacancy, however, if occurs within the two sittings of the

General Body, the Executive Committee shall be eligible to fill it up temporarily by election of one of the bonafide members of the Association.

5. Executive Committee :—

- (a) The Executive Committee shall consist of 9 members in all.
- (b) The Office bearers of the Association shall be the Ex-Officio members of the Executive Committee.
- (c) The Executive Committee shall carry on the day to day business of the Association.
- (d) Five members shall form the quorum for the Executive Committee by their presence.
- (e) All money will be deposited in the Bank approved by the Executive Committee in the name of the President of the Association.
- (f) The Executive Committee shall fix dates for the meeting of the General Body of the Association annually and the same shall be notified to each member individually or through press collectively atleast one month before the date fixed by the Secretary.
- (g) Any twenty bonafide members of the Association may however call an extra-ordinary meeting of the General Body of the Association through the Secretary for discussion of urgent matters.
- (h) Twenty members by their presence shall form the quorum for the General Body meeting of the Association.

6. The Secretary shall have always Rs. 200 with him deposited in Postal Savings Bank as a permanent advance which he may utilise in some urgent work of the Association. Every such item of expenditure shall however, be at once reported to the President and the Treasurer of the Association.

7. The General Body, at the recommendation of the Executive Committee, shall have powers to make, amend or omit any of the rule or rules of the Association.

8. The official year of the Association shall be the calendar year.

9. Notwithstanding the provisions under rules 3 (f) every other matter in the Executive Committee and the meetings of the General Body of the Association shall be decided by the majority of votes only.

10. In the conduct of the meetings of the Executive Committee and the General Body of the Association, the Association shall follow the etiquette and procedures of Parliamentary Bodies.

11. All professional papers and resolutions to be sponsored by individual members should reach the Secretary at least a fortnight before the meeting of the General Body.

College News

MADRAS VETERINARY COLLEGE

Examination Results

The following candidates have passed the Final Diploma Examination of the Madras Veterinary College held in March 1947.

1. Bappa Reddi.
2. Krishnamurti P. V.
3. Narasimhamurti K.
4. Natarajan P. S.
5. Rajaopala Rao R.
6. Umamaheswaran V.
7. Venkatachelapathi D.
8. Hanumantha Rao B.
9. Krishnamohan Rao S.
10. Ramakrishnan P. H.

M. R. SUBRAMANIA SASTRY,

Madras, }
31-3-47. }

For Principal,
Madras Veterinary College.

BIHAR VETERINARY COLLEGE, PATNA

Examination Results

The following students are declared to have passed the Diploma Examination held in the month of March and April 1947.

(In order of merit)

- | | |
|---------------------|-------------|
| 1. Chintamani Singh | ... U. P. |
| 2. Sheo Baran Singh | ... " |
| 3. Kushal Pal Singh | ... " |
| 4. A. Madhava Rao | ... Orissa. |

- | | |
|--------------------------|----------------|
| 5. V. P. Verma | ... Bihar. |
| 6. Babu Singh | ... Patiala. |
| 7. Basudeo Patnaik | ... Orissa. |
| 8. Mohan Singh Purohit | ... Jodhpur. |
| 9. Gono Haiburu | ... Bihar. |
| 10. Zainuddin Siddiqui | ... U. P. |
| 11. Ram Padarath Singh | ... Bihar |
| 12. Md. Yunus Ansari | ... " |
| 13. Syed Ibne Hassan | ... U. P. |
| 14. N. Bandaranayake | ... Ceylon |
| 15. Brahmdeo Rai | ... Bihar. |
| 16. Raghubir Sinha | ... Bihar. |
| 17. N. B. Ugharade | ... Gwalior. |
| 18. Abdul Rahim | ... Hyderabad. |
| 19. D. K. Misra | ... Orissa. |
| 20. Ram Niwas Singh | ... Bihar. |
| 21. Md. Zakaullah | ... U. P. |
| 22. Samiullah Khan | ... " |
| 23. Jalaluddin Ansari | ... " |
| 24. H. N. Avasthi | ... " |
| 25. Raj Bahadur Singh | ... " |
| 26. N. N. S. Verma | ... Bihar. |
| 27. Baxi Raghubar Prasad | ... " |
| 28. Deohans Prasad | ... " |

S. K. SEN, B.Sc., M.R.C.V.S.,

PATNA, }
19-4-47. }

Principal.
Bihar Veterinary College.

WANTED IMMEDIATELY

A qualified Veterinary Graduate for the State Stables, Bikaner. Grade Rs. 75—5—125 plus usual dearness allowance and unfurnished House. Higher start within sanctioned grades can be allowed to deserving candidate.

Apply through Superintendent, Veterinary Department, stating age, qualifications, previous experience and minimum salary acceptable.

DHIRSINGH,
Officer Karkhanas.
Bikaner State, Bikaner.

Obituary

S. KRISHNAMURTI, G.M.V.C.

It is with deep regret we have to record the untimely demise of one of our colleagues Mr. S. Krishnamurti, District Veterinary Officer, Tanjore, on the 8th February 1947, at Madras, leaving behind him his wife, nine children and a host of friends to bemoan his loss.

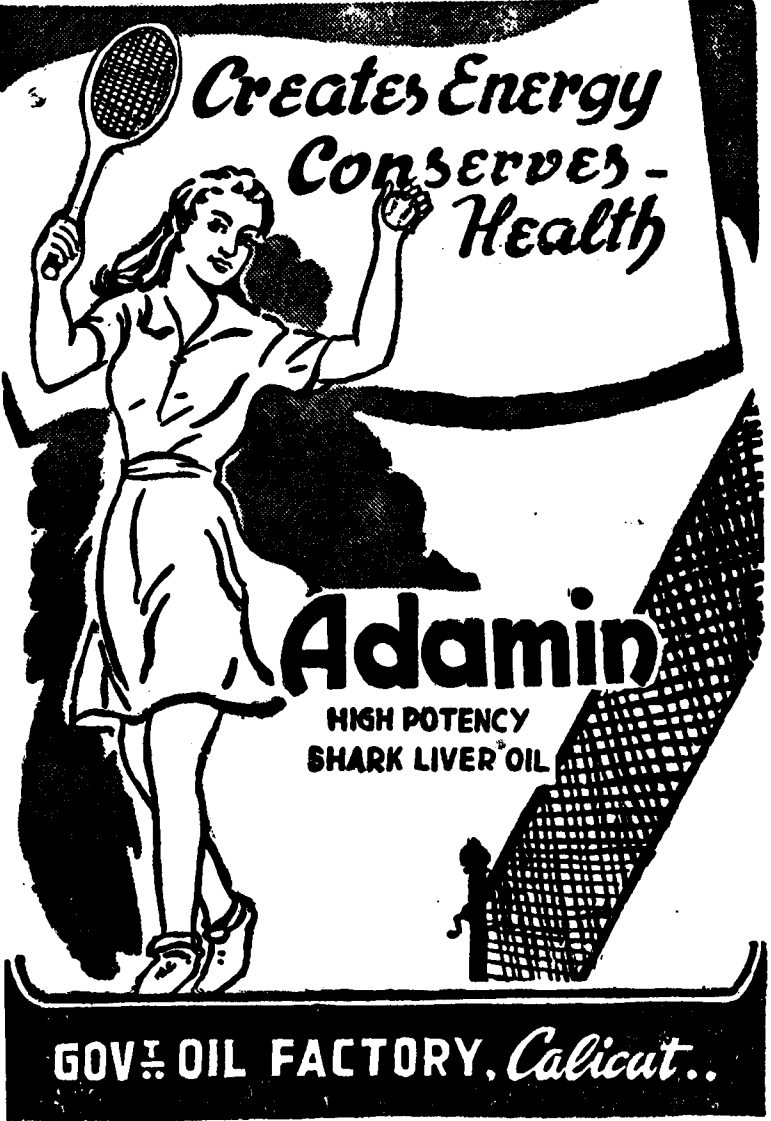
We tender our heartfelt condolences to the members of the bereaved family.

N. VENKATARATNAM, G.M.V.C.

We are very sorry to record the untimely and premature death of Mr. N. Venkataratnam, Veterinary Assistant Surgeon, Palacole, on the 8th February 1947 at the age of 38, leaving behind him an aged mother, wife and four children. We extend our sincere condolences to the members of the bereaved family.

GANGA SINGH RAWAT, G.V.Sc.

We deeply regret to hear of the sad demise of Mr. Ganga Singh Rawat, Veterinary Assistant Surgeon, Chakrata, U. P., from heart failure, on 7th February 1947, and we extend our sincere condolences to the members of the bereaved family.



**Creates Energy
Conserves -
Health**

Adamin
HIGH POTENCY
SHARK LIVER OIL

GOVT OIL FACTORY, Calicut..

ADS-18.

Agents for Madras Presidency and adjacent States:
Messrs. PARRY & CO., LTD., MADRAS

When writing to advertisers, please mention this Journal.

FOR
VETERINARY INSTRUMENTS,
DRUGS, PATENT MEDICINES,

Repairs to Instruments A Speciality.

Apply to:—

R. N. PARANJAPPE & SONS,
P. B. NO. 2230
BOMBAY 2.

STANES MINERAL MIXTURE
Stanes Sterilised Fine Bonemeal for Cattle

The only Tonic at low prices with high tonic value.
Prevents diseases due to deficiency in CALCIUM and
PHOSPHORUS. Largely used by all the Agricultural
Research Stations in Madras, and by the Veterinary
Departments.

Sold in bags of 14 lbs., 28 lbs. and 56 lbs. for supply in the
Madras Presidency.

For further particulars Apply to:—

T. STANES & CO., LTD.,
COIMBATORE.

TENALINE
The Wholly Efficient Taenifuge

FOR
DOGS

Manufactured by:—

WILLOWS, FRANCIS, BUTLER & THOMPSON, LTD.
73/75, Shacklewell Lane, London, E. 8
ENGLAND

Phone:
GLISSOLD 6361 (8 LINES)

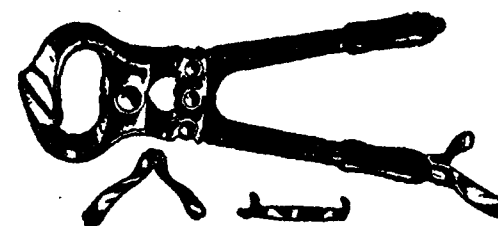
Grams:
"FORTY, HACK, LONDON"

When writing to advertisers, please mention this Journal.

KZM2, N24 N47.22.1

SHORTLY EXPECTED.

Burdizzo Castrators with Patent Cord-Stop at Jaws.



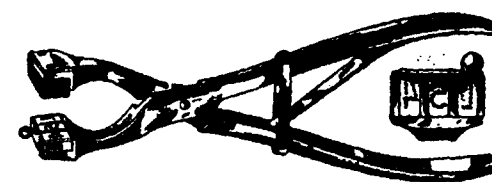
Beware of Imitations.

Do not be misled by spurious makes.

Dr. Burdizzo's Bloodless Castrator for the Castration of Bulls,
Horses, Sheep, Dogs, Pigs, etc., is the only Castrator guaranteed to be of
perfect manufacture, built up to a standard not known to price.

Burdizzo Tattooing Forceps.

Official Marker of many Cattle Breeding, Sheep Breeding and Horse
Breeding Farms and Cow Testing Associations. With Interchangeable
letters and Numbers for marking Cattle, Sheep, etc.



Nickel-plated, three space; in box of hard wood. The usual set
consists of 3 space-forceps, 2 set of Figures, complete alphabets, Tattooing
ink and Hard wood box.

Further particulars on request from

Dr. PANGAL'S VETERINRAY INSTITUTE,

Representatives and Distributors,

26, Wallajah Road, Mount Road, P.O.,
MADRAS 2, (S. India).

PHENOTHIAZINE

Thiodiphenylamine

Phenothiazine is a highly efficient anthelmintic.

HORSES

Adequate doses will eradicate almost 100 per cent. of strongyle worms from the large intestine.

Dosage : 1 gramme per 33 lbs. body weight or doses of 30 to 60 grammes according to body weight and condition of the animal.

SHEEP

Almost 100 per cent. effective in the treatment of gastro-enteritis. Removes the large mouthed bowel worm *Chabertia ovina*.

Dosage : 0.25 gramme for 1 lb. body weight. Average dose is 10 to 30 grammes according to weight.

CATTLE AND GOATS

It is used with good effect in parasitic gastritis.

Dosage : 20 to 60 grammes in cattle of 6 months of age and upwards. In goats 10 to 30 grammes.

Cartons of 500 grammes



MANUFACTURED BY

MAY & BAKER LTD.

Distributed by MAY & BAKER (INDIA) LTD.

421