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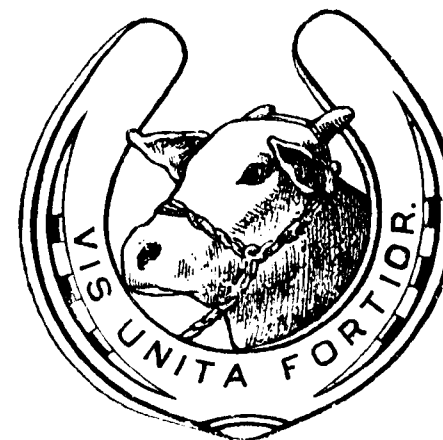
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P. SRINIVASA RAO, G.M.V.C.
Veterinary Surgeon, Madras.

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The examination of the brain for diagnosis of rabies and the issue of certificates recommending anti-rabic treatment to persons licked on abraided skin or bitten by suspected animals constitute one of the most important duties of the laboratory.

Although rabies has been known to mankind since the 4th century B. C. yet its causative agent is not yet definitely known and the exact nature of the negri-bodies still remains obscure. The finding by an Italian scientist Prof. Negri of the Pavia University of certain bodies specially in the Purkinje cells of Cerebellum and in the pyramidal cells of Ammons horn still looms large as the chief means of diagnosing rabies, though their absence does not exclude the possibility of the disease.

In the Raymond Research Laboratory at the Bengal Veterinary College the diagnosis of rabies is established chiefly by detecting negri-bodies in the brain; and for the reason of that an attempt was made to find a simple, quick and an efficient method of staining these bodies. The staining method that has given very good results at our hands and has been tried in this College Raymond Research Laboratory for several years for staining brains of a large variety of suspected rabid animals including dog, cat, monkey, jackal, cow, horse, goat, sheep, donkey and rabbit is narrated below.

Materials stained by this method have been supplied for teaching and demonstrational purposes to Sir John McFadyean at the Royal Veterinary College, London and to the Carmichael Medical College, Calcutta. The method was also demonstrated to Major F. P. Mackie, M.D., F.R.C.P., I.M.S., at the Pasteur Institute in Assam as well as on the request of Capt. E. C. R. Fox, the late Superintendent Pasteur Institute, Calcutta, it was demonstrated to his Assistant deputed to this College laboratory for the purpose.

The method of staining is as follows :—

1. Sections (paraffin) 3 to 4 mm thick must be good and dry.
2. Remove paraffin with xylol—2 or 3 minutes.
3. Remove xylol with ab-alcohol—4 or 5 minutes.
4. While still wet with ab-alcohol Gram's Iodine Solution (double strength) for 10 minutes, then pour off.
5. McConkey's Eosin (double strength) fill the slide with to overflowing—1 minute.

McConkey's Eosin formula of :—

Re/—

Eosin (Extra B, Crystals Hoechst)—	0.25 grm.
Distilled Water—	... — 50 c. c.
Absolute alcohol—	... — 55 c. c.

6. Burn out the Alcohol by setting fire to the stain.
7. Leave the Stain on the slide for for 5-10 minutes or till pretty cold.
8. Wash in cold Distilled water and mop dry.
9. Decolourise with 90% Alcohol (cold) until the pink nerve cells are enough red to stand differentiation in Rectified spirit after treatment with Methylene Blue in step 12.
10. Wash in cold Distilled Water thoroughly to remove all taint of Alcohol and mop dry.
11. Counterstain with 1% Aqueous Medicinal Methylene Blue—10 to 20 seconds or so and blot and dry. (If Loeffler's Alkaline Methylene Blue be used it must be fresh and good as it decomposes by exposure to air and gives smudgy picture).
12. Differentiate in Rectified Spirit watching every now and then under a low power to get both red and blue in equal prominence and blot dry. If not well dry Xylol will not clear.
13. Clear in Xylol for 3 or 4 minutes, or more if necessary, and mount in Balsam.

N. B.—Merck's reagents and chemicals and Grubblers stains were used throughout.

Besides above there are various other more or less complicated methods of staining rabies sections and smears some of which are also stated below.

Lecompte's Method for Negri-bodies :—

1. Xylol—2 minutes; Rectified Spt.—2 or 3 minutes.
2. Distilled Water.
3. Stain for 5 minutes with—
Sat. Alc. Sol. of Basic Fuchsin—0.3 c. c.
Sat. Alc. Sol. of Methylene Blue—2.0 c. c.
Distilled Water—30 c. c.
4. Wash in water.
5. Wash rapidly in Rectified Spirit.
6. Clear in Xylol and Mount.

N. B.—Negri-bodies will appear ruby-red: the stains are to be freshly made in about every week—most probably it undergoes deterioration.

Two Methods of Staining Negri-bodies.

By Dr. Otto Lentz of Berlin.

Lentz "A" Method :—

1. Remove the paraffin with Xylol and the Xylol with Absolute Alcohol.
2. Being wet with Ab-alcohol in MacConkey's Eosin—1 minute.
3. Wash in water.

4. Loeffler's Methylene Blue—1 minute.
5. Wash in water and Dry gently with filter paper.
6. Alkaline-alcohol until the section is only faintly red.
7. Acid-alcohol until in section the line of nerve cells is faintly blue and in smears until the thinnest parts have lost all blue.
8. Short wash in Ab-alcohol.
9. For Sections—Xylol, Canada-balsam etc. For Smears—Dry and examine without cover-glass with oil-immersion.
The final colour should be faintly red.

Lentz "B" Method :—

1. Remove the paraffin with Xylol and the Xylol with Absolute Alcohol.
2. Being wet with Ab-alcohol in MacConkey's Eosin—1 minute.
3. Wash in water.
4. Loeffler's Methylene Blue—1 minute.
5. Wash in water.
6. Gram's Iodine Solution—1 minute.
7. Wash in water.
8. Methylic Alcohol until no more blue is visible and the preparation is quite red.
9. Wash in water.
10. Again Methylene Blue $\frac{1}{2}$ minute.
11. Wash in water and dry carefully.
12. Alkaline-alcohol until only faintly red.
13. Acid-alcohol until nearly all blue has gone.
14. Wash in Absolute alcohol.
15. Dry and Clear in Xylol and Mount in Balsam.

The Smears and Sections are placed directly from the Absolute alcohol into the stain.

Stains :—

- (i) Eosin Hoechst (Extra B)—0.5 gm.
60% Ethylic Alcohol—100 c. c.
- (ii) Loeffler's Methylene Blue :—
Sat. Alc. Sol. of Methylene Blue (B Patent Hoechst) — 30.0 c. c.
Caustic Potash Sol. (0.01%)—100 c. c.
- (a) Alkaline Alcohol :—
Absolute Alcohol ... 30 c. c.
1% Sol. of Caustic Soda in Ab-alcohol—5 drops.
- (b) Acid Alcohol :
Absolute Alcohol—30 c. c.
5% Acetic Acid—1 drop.

Neri's Method for Negri-Bodies.

Stains :—

Re/-

Eosin —	1.0 gm.
Iodine —	0.1 gm.
Pot. Iodide —	2.2 gm.
Aqua Distil —	100.0 c. c.

1. Dissolve the Iodine in Pot. Iodide with as little water as possible, and then dilute up to 50 c. c.
2. Dissolve the Eosin also in 50 c. c. of Distilled water.
3. Mix the two solutions and filter.
4. Preserve in a glass stoppered bottle.

Method :—

- (a) Stain in Iodised Eosin for 10 minutes.
- (b) Wash well in distilled water.
- (c) Counterstain 5 minutes in Aqueous Methylene Blue 1% (1—1000).
- (d) Wash rapidly in distilled water.
- (e) Differentiate in 95% alcohol.
- (f) Dehydrate in Ab-alcohol and clear in Xylol and Mount in Balsam.

Fasole's Method for Negri-Bodies.

1. Aqueous Eosin 1% (warm)—5 to 10 minutes.
2. Wash.
3. Sol. of Caustic Potash—4 drops
4. Ab-alcohol—50 c. c.
5. Stain with Aqueous Methylene Blue— $\frac{1}{2}$ or 1% } & Sufficiently long.
6. Wash in ordinary Alcohol—1 to 2 minutes.
7. Dehydrate with Ab-alcohol.
8. Clear with Xylol and Mount in Canada Balsam.

Manouelian's Method for Negri-Bodies.

Having cut the sections and fixed on to the slides with egg-albumen—incubate for 10 minutes in 38° C or 37° C.

1. Remove Paraffin with Xylol and Xylol with Alcohol in the usual way and stain the sections with an Aqueous Solution of Toluidin Blue (1 in 200) for 15 minutes more or less.
2. Wash the sections carefully & gently in running water for a few seconds.

3. Decolourise in the following mixture :—

Re/- Alcohol 90%— 100 c. c.
 Glycerine-Ether (Uma's)—2 c. c.
 Glycerine—1 part
 Sulphuric Ether—9 parts. } Until the sections appear pale blue.

Then apply Absolute-alcohol, Xylol and Canada-Balsam in the usual way.

Manouelian's Modification of Mann's Method for Negri-Bodies.

To Stain Sections which have been treated in the usual way and cut in paraffin.

1. Place them for 2 hours in the following staining mixture in the incubator at 37° C, or 24 hrs. at ordinary room temperature.

Re/-
 Methyl Blue (Grubblers) 1 % Aqueous Sol.—35 c.c.
 Aqueous Sol. of Eosin 1 % — 45 c. c.
 Distilled Water — 100 c. c.

And mix.

2. Wash well in water.
3. Dehydrate in Absolute Alcohol.
4. Place carefully in Ab. alcohol — 30 c. c. containing 1 % Solution of Caustic Soda — 5 to 10 drops.
5. The sections are kept into this Sol. until they become red. This takes 2 to 5 minutes.
6. As it is red every trace of Soda is removed by plunging sections into Ab-alcohol.
7. Remove sections with great care into water until the Eosin washes out.
8. By the side keep some very slightly acidulated water (about 1 or 2 drops of Acetic Acid in 50 c. c. of Distilled water) then the sections turn blue.
9. Dehydrate in Alcohol and the rest as usual.

Ira-Van Geision's Method for Negri-bodies.

Take off—

Sat. Alc. Sol. of Rose Aniline Violet — 2 drops.
 Sat. Aqueous Sol. of Methylene Blue — 1 drop.
 Distilled Water — 10 c. c.

Prepare freshly the stain just before use; and warm gently slide with stain on as for Ziehl-Neelsen's method for 1 to 5 minutes. Wash in water. Dry and Mount.

Squeeze a small piece of Hippocampus carefully on slide and gently make a smear. Fix in Methylic Alcohol, apply the stain and warm gently as for Ziehl-Neelsen for 1, 2 or 5 minutes. Wash in water. Dry and Mount.

Bechserii's Method for Corpora Negri.

For Smears :—

1. Fix in Ab-alcohol.
2. Stain for 5 to 10 minutes with the following—

Re/-
 Fosin (Grubbler) — 1 grm.
 Ab-alcohol — 100 c. c.
 Glacial Acetic Acid — 9 drops.

3. Wash $\frac{1}{2}$ a minute if the water be hot.
4. Stain 1 minute with $\frac{1}{2}$ % Aqueous Sol. of Medicinal Methylene Blue.
5. Wash in Ether, Glycerine & Alcohol mixture.
6. Dehydrate in 90 % alcohol — 30 to 40 seconds.
7. Absolute alcohol. Xylol. Balsam.

Fere-Bonad's Method for Corpora Negri.

Prepare brain in the usual way. Fix in Ab-Alcohol for 48 hours. Cut sections and Mount.

1. Put the Section in Chromic Acid Sol. (1 in 500) for 20 to 30 seconds.
2. Wash in water for a long time.
3. Stain in 1 % Eosin for 20 to 30 seconds.
4. Differentiate in Alkaline alcohol (Soda) until the colour of the section is pink.
5. Apply Methylene Blue until the colour is violet.
6. Differentiate in 95 % Alcohol and Mount.

Mallory's Iron Haematoxylin Method for Corpora-Negri.

1. Xylol till paraffin is removed.
2. Ab: Alcohol to remove Xylol.
3. Iodine in 70% alcohol (port wine colour) till section is yellow, (This 3rd. step is necessary when tissue has been prepared in fixatives containing mercury — otherwise needless).
4. Remove Iodine with 70% Alcohol or more till section white.
5. Then 60 or 50 % Alcohol — a short wash with.
6. Wash in Distilled water — for 15 Minutes.
7. Ferric Chloride Sol. 10 % in Distilled water for 10 to 15 minutes.
8. Wash in Distilled water for a few seconds.
9. Saturated Aq. Sol. of Haematoxylin till section black.
10. A short wash in Distilled water — a few seconds.
11. Decolourise with 2% Aq. Ferric Chloride Sol. till section is ash-grey.



12. Wash well in Distilled water.
13. Counterstain with Eosin (Aqueous) 0.1 %.
14. Wash well again in Distilled water.
15. In ascending grades of Alcohol from 50% to Absolute.
16. Xylol and Mount in Balsam.

The object of this paper is to put on record a method of staining corpora-negri that has been found to be very successful at our hands in this College Raymond Research Laboratory in staining more than two thousand brains of various species of suspected mad animals as well as to offer some collective data of the very scattered information on the subject of staining negri-bodies in rabies.

We are very thankful to Mr. S. M. Ali, the Director of Veterinary Services, Bengal and to Mr. A. Latiff, the Principal of the Bengal Veterinary College for their encouragement in drawing up this note.

A BRIEF ACCOUNT OF THE LIFE CYCLE OF *LIMNOEA ACUMINATA* AND *INDOPLANORBIS EXUSTUS* AS OBSERVED IN NIZAMSAGAR AREA

BY

B. MADHAVA RAO, G.M.V.C.,

Assistant Veterinary Surgeon, Banswada, H.E.H. The Nizam's Dominions.

I am not aware of any literature on the life history of fresh water snails in India, though cercariae discharged by them have been recorded on several occasions. I am recording my observations on the life history of the two fresh water snails viz. *Limnoea acuminata* and *Indoplanorbis exustus*.

Distribution:—Throughout the Nizamsagar Area the type of snails very commonly met with consists of the following:—

1. *Limnoea acuminata*
2. *Indoplanorbis exustus*
3. *Limnoea leuteola*.

The others include *Dignostomum pullchellum* and the two species of *Viviparus*, but since it is not known definitely that they are parasitised by the larval forms of any of the Flukes or Schistosomes, much attention was not paid to them. Besides I had kept *Planorbis* and *Limnoea* together with the last mentioned three varieties of snails in a tray containing faeces. The faeces had ova of *Fasciola gigantica* and observations for a month

failed to reveal any infection in the latter group of snails, whereas the former got infected. Hence, it can be presumed, that the cercariae have no attraction for these snails. Among the snails collected from the same tank where the cercariae of *Fasciola* were found in *Planorbis* and to a lesser degree in *Limnoea*, the other three snails were free from infections. Further observations are being made to know if they harbour any trematode larvae.

The first two types of snails have been observed to thrive well throughout the year, provided there is plenty of water supply. They are found all along the edges of tanks and ditches at which places, water is shallow thus offering a good environment to the growth of creepers with wide leaves and other water plants.

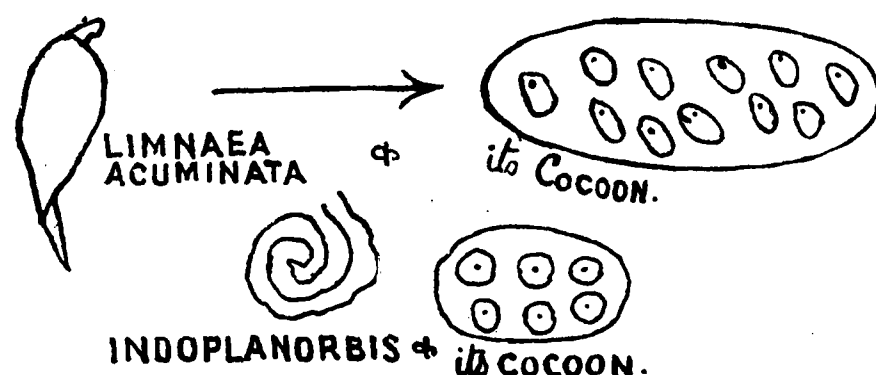
Conditions favourable for the development of snails:—The three important factors that contribute to their rapid growth are: (1) constant and plenty of water supply (2) Large leaves like those of lotus plants and of a peculiar variety of green creeper with broad leaves and grass. Hence they are found in tanks and big ditches which are usually never dry due to the supply being from the main canal.

Water supply is essential for their very existence and leaves for their feed and breeding: (3) Lastly moderate temperature. Adult snails are not found in good numbers on the main canal, but the fact that it acts as a carrier of snails has been proved during investigation into the Liver Fluke diseases in the Nizamsagar area by Mr. Mahajan, Veterinary Investigation Officer, Hyderabad State, in the year 1937-38. It was observed that young snails were found to come through crevices and leakages from the main canal. This could be explained from the fact that the main Dam (Reservoir) offers every facility for the growth of the snails while the small ones by forceful current of water are carried away, along the canal and are found to escape through its crevices, and leakages. The canal carries only the very small snails but not the eggs as the jellied cocoons in which the eggs are laid are not easily washed out.

Snails which live and breed in tanks and ditches are carried away from tanks to the paddy fields through water and they thrive well on account of plenty of water supply and good feed on the paddy grass. Breeding has not been observed in paddy fields, for by the time the small ones become adults paddy is cut rendering the fields dry and thus providing no facility for the adult ones to lay eggs.

Breeding:—For experimental purposes snails were kept in a tray. They were allowed green leaves and grass for their feed and kept under constant observation. The water was daily removed and fresh water added.

Soon after mating, the male and the female of *Limnaea acuminata* were separated from the rest and kept in a separate tray allowing necessary requisites for their feeding and for the laying of eggs. The female one was observed to lay eggs in about 36 hours' time on the under surface of the leaf provided for it. It took about 8 to 10 minutes for the eggs to hatch, and the eggs were 10 in a cocoon.



Therefore for successful breeding of snails, wide leaves are very essential. After mating, the snails take about 24 to 48 hours to lay eggs in cocoons each of which contains 4 to 60 eggs depending probably on the number of spermatazoa that reach the ovum and also on the size of the snail. The size of the jelly in *Limnaea acuminata* varies from 1/10" to 1/5" wide and 1/4" to 1" long, the colour being white transparent, with slimy consistency with which it gets attached to the under surface of the leaf very firmly. The eggs could be seen through the jelly mass by the naked eye. The cocoon of the *indoplanorbis* is also elongate-oval and at times round, but the eggs in it are invariably round, varying from 4 to 30 in numbers.

The cocoon which the snails lay their eggs, in the tray was removed and kept along with the out leaf in a tube and was observed daily.

The eggs of the *Limnaea acuminata* type are oval in shape exactly like those of the hen, and when seen under the microscope the nucleus generally is at one pole, whereas in that of *Planorbis* it is in the centre. These eggs are laid in rows in one or two layers allowing clear space between. The nucleus begins to move from the third day and by the tenth day a full sized embryo with the beating of the heart and the formation of the eyes etc., can be seen under the microscope. It takes one complete fortnight for these eggs to hatch out into young snails and come out of jelly with formation of shell. After coming out they attach themselves to the under surface of the leaf. It takes further one to one and a half months for these tiny ones to become adults. Breeding has been observed to continue throughout the year and the maximum is reached

during the months of February to April and July to September. In winter, it is much less, being probably due to extreme cold.

The cocoons in which the eggs are laid are also found infested by the meta-cercariae of *Fasciola*. Cattle and especially the buffaloes wallow in knee-deep water and eat the leaves freely during the course of which, the cocoons and the small infected snails are also swallowed. The infection with metacercariae in the Cocoons has been found to take place after they are laid on leaves and after a period of 8 to 10 days. Hence the fact that the scourge Fascioliasis is very common in buffaloes, can well be appreciated. Even the villagers when asked as to how their animals got the infection of the fluke disease will tell that the buffaloes or cows are very fond of eating leaves of the green creeper (in Telugu Thota Kura) found in the tank and this explains why there is high infection in them. I am also of the opinion that the most common mode of infection in fluke disease is by eating these leaves in mass together with the infected jellies.

To distinguish the healthy snail from the infected one the following observations may be useful:— (1) the healthy snail is very active in water whereas the infected one is not: (2) The colour of the healthy snail is greyish-white with black streaks on the shell, whereas the infected one is mostly black in colour. The healthy cocoon is very white, has a shining appearance, can be removed whole and its shape remains unchanged: whereas the infected one is greyish and can be removed only in pieces and its shape also changes into a lump.

Snails exclusively live on decaying leaves and grass, but they have been observed to thrive well on leaves alone which they eat in great abundance.

Conclusion:—Bearing in mind this important fact that fresh water and wide leaves of creepers lotus plants etc., are absolutely essential for the rapid spread of snails the following measures might be adopted in any measure to eradicate fluke disease or schistosomiasis among animals.

Periodical removal of these creepers from tanks and ditches especially along the edges would deprive the snails of their sustenance and lessen the severity of the infection.

Acknowledgments:—I am indebted to Rao Bahadur Dr. B. K. Badami, Director, Civil Veterinary Department, Hyderabad State, for affording necessary facilities for this work and encouragement. My thanks are also due to Mr. M. R. Mahajan, M.R.C.V.S., Veterinary Investigation Officer, Hyderabad State, for his valuable guidance in this work. I thank Dr. Bhalerao, Helminthologist, Imperial Veterinary Research Institute, Izatnagar, for his going through this article and making necessary corrections.

A STUDY ON THE PRINCIPLES OF GENETICS WITH REGARD TO PARENTAL DISPOSITION AND THE POSSIBLE POTENTIALITIES OF PROGENITAL INHERITANCE

By

A. KRISHNASWAMY, G.M.V.C.,
Veterinary Research Officer, Medical College, Madras.

"Drink more milk" has been one of the chief campaigns of the Government for the last several years and every attempt is being made by the Government to increase the milk production and distribution in the country. There are no doubt dairy farms and Co-operative milk supply Unions with milk and milk-products marketing agencies spread all over the country. It is however worthy of note that the latest milk marketing report published by the Government of India discloses a state of affairs worse than any that was existing before. In the words of the report "the low milk consumption indicates a serious state of affairs, especially among the poorer classes who consume well below 5·8 oz. a day, while many have to go without milk or milk products altogether". To add to this "Grow more food" is another and more important campaign and the widest propaganda is being carried on under this item and every possible facility is being given by the Government to the ryots and the farmers, to enable them to grow more food. The importance of this as a supreme war effort is clear and well recognised by the Government, and it is the indispensable duty of every citizen of the country, to give his fullest co-operation in this, in order to keep the country above want, starvation and famine, especially at a time when the war clouds, which till now appeared in the horizon, are now hovering thick oversky. Apart from the question of war necessity, India is mainly an agricultural country, where more than 90% of the population depend mostly upon agriculture as its mainstay. Needless to say that cattle form the chief back-bone of agriculture, and more so in the case of the above two campaigns carried on by the Government. Animal husbandry and dairying are the structural foundations upon which any scheme concerning either agriculture, or the above milk and food campaigns have to be constructed. There are breeders all over the country and except in cases where scientific and professional supervision is insisted on under Government help and financial subsidy, breeding is going on spuriously of non-descript cattle, not suited to meet the country's requirements. To satisfy the country's needs, breeding should be organised on scientific lines. The aim of cattle breeding may be only three-fold:—(1) supply of suitable cows to the dairy farm and milk supply societies for catering good and sufficient milk to the public at reasonable rates, (2) supply of work animals to the public for draught and agricultural purposes and (3) supply of suitable cattle to the abattoires to satisfy the needs of the beef consuming population. To

ensure a sufficient supply of the kind of livestock necessary to satisfy all the the above needs efficiently and well, breeding on scientific lines is necessary. Needless for me at present to dilate much on the rapid advancement of scientific breeding operations and research work carried on, in that connection throughout the world. To meet the increasing demand for Live stock, the latest development in breeding operations is the introduction of artificial insemination. Large scale experiments in this connection appear to have been carried on in Russia and America and glowing accounts of their success are being reported. It may not be out of place for us to presume that ere long, in India also, artificial insemination on a large scale may be introduced. On the eve of such a development, the aim of this article is only to bring home to the minds of breeders, stock-owners and their organisations some of the scientific theories on genetics regarding the parenteral disposition and the possible potentialities of progenital inheritance, which may be useful to them in their breeding operations.

THE SCIENCE OF CONCEPTION

The history of life goes back to the origin of the universe. Where there is life, there are the three evolutionary processes of birth, growth and death. These three phases of what is called the triad of life are always indispensable for the proper preservation and propagation of any individual, race, community or species, without which the eternal continuation of this universe, with its multifarious diversities of men, animals, birds and beasts, and scores of other living organisms, varying from a single Amoeba to the most advanced human being is not possible. So, life begins its first phase with birth; or birth is the beginning of manifestation of life; and for this two things are necessary viz., a male and a female element. Fusion of these two male and female principles sets the ball of life in motion. Femininity and masculinity exist and persist wherever there is a description of creation, preservation and propagation, and destruction of life. To speak of the neuter does not imply negation of the male or female principle. It implies only an unmanifested or rather an undeveloped state of both the male and the female factors. There is no such thing as an absolute male or manly man, and an absolute female or a womanly woman. Masculinity and femininity are only the visible expressions of certain evolutionary changes that take place in the body. Here comes in the question of sex. The mystery of sex has puzzled many a thinker, from the earliest philosopher to the advanced scientist of to-day. Many are the investigations made, researches carried out and theories propounded. But the pioneer with an art of definite control over the sex of the child that is to be born, is still to come. To all appearances life starts from the simplest of living things, the fertilised ovum. This fertilised ovum, with a definite sex potentiality therein, begins to divide, multiply and grow. With the gradual development of a

definite shape, there appears a group of cells, which the Scientist recognises as the forerunners of the male or the female reproductive organs. As development goes on, these cells also develop and take a definite shape, and at birth, sex is definitely settled, as far as the reproductive organs are concerned. Beyond this, our knowledge as to when and how the sex factor takes its origin, is meagre. Statistical journals here and there publish vague information that in times of war, famine and pestilence, more boys are born than girls. Mono sexuality is the generality among most of the living beings. The sexes are well differentiated. Cases of bisexuality are also reported, where reproductive organs of both sexes are present in the same individual, capable of impregnating other animals, as well as themselves. Instances of even self-impregnation also occur. Regarding the origin and development of sex there are several schools of thought.

The great German Gynaecologist, Prof. Umberger has explained that the sex factor of the child is determined by the P. H. of the genital tract at the time of conception—an acid condition of the genital tract producing a female and an alkaline one, a male. He has proved this by many of his experiments and has also found, that the desired acid or alkaline reaction of the genital tract can be brought about by the use of Lactic acid and Sodium bicarbonate respectively. There are other embryologists who give a different theory about the origin of sex in conception. When a germ cell divides, its nuclear material breaks up into a number of segments. These are called chromosomes. In human beings it has been found that a female germ cell contains 24 chromosomes and a male one 23 + an X or Y chromosome. In the female, two of these chromosomes are different from the rest, while in the male there is an odd chromosome also called X or Y chromosome, the remaining 22 being like the corresponding 22 of the female. It is the considered opinion of these embryologists that sex is determined by the presence of X chromosome in the sperm cell at the time of fusion, its presence indicating the female and its absence, the male. Analogous to this theory however, there is the eastern theory or the Indian theory. Copious information on embryology is also available in ancient Indian literature such as Anangaranga, Sankara's Prapanchasara, Sarada Tilaka and Matrukabheda Tantra etc. In the last mentioned work which is a book on Hindu rituals, it is said that an excess of ova over the sperm causes the birth of a male. If the ova and the sperm be equal in quantity and if neither of them can subdue the other, a neuter is born. It now remains to be seen as to what proportions of the ova and sperm mean equality in quantity. In the Sarada Tilaka, it is said that at the time of procreation (fusion), 22 units of ova and 14 units of the spermatozoa are produced. This is equality. If all the 22 units of ova fuse with less than 14 units of the sperm, a female is born; on the other hand, if all the 14 units of sperm fuse with less than 22 units of ova, a male is born. It is only in rare instances that all the 14 units of the sperm will fuse with all the 22 units of

ova, because during the processes of ejection, maturation and fusion, there is an extraordinary activity in the nuclear contents of the cell, and it is not always possible that in the midst of such an intense overactivity of the germ-cell contents, they may be exact fusion of all the 22 ovum units with all the 14 sperm units; certain units this side or that, are invariably likely to be missed in fusion. In rare cases, however, where such a fusion takes place, a neuter is born. Even in this equality of the number of units, mentioned above, viz., 22 female and 14 male units, the excess of a fraction of a unit one way or the other, leads to the appearance of male or female traits in the body of a neuter. According to these visible traits or marks, neuters can be divided into male neuters and female neuters. Although the difference between male and female neuters makes no difference in the end, it does make some difference in its beginning and development. In the beginning there is the fractional difference between the ova and sperm, and in their development, there are proportional differences, physical and functional. We often times see that the body of the neuter which resembles a male develops mostly masculine tendencies, and that of a neuter that resembles a female, develops mostly feminine tendencies. It is thus the agreed view of Indian embryologists that all creations are the resultant products of a certain permutative combination, and fusion between the male and female units at the time of conception, with difference even in their minutest fractions. In larger variations, they make the male and female; while in their small and minute variations, are the differences in the physical, mental and functional development of the male and female tendencies.

There is yet another school of thought which maintains that the sex of the child depends upon the mental attitude of the parents at the time of conception. Mental changes such as fear, hatred, anger or other emotions affect the sympathetic nervous system, which bring on changes in the vital processes of the body, which may in their turn influence the sex. This is borne out by the fact already mentioned in this article that in times of famine, war and pestilence, more boys are born than girls.

There is also another belief prevalent among many, that the stronger sex at the time of union excites the birth of the opposite sex. The cause for this is not far to seek. At the time of a wrestling combat, we see 2 wrestlers pouncing upon each other with a certain amount of force and velocity, the weaker one meekly succumbing under the mightier force of the other. Just in the same way at the time of maturation and germination, we can conceive 2 cells—a sperm cell and an ovum coming upon each other with a force and velocity dependent upon the force of ejection. The stronger one naturally dashes against the other and in the forceful dash, a major portion of its contents, viz. chromosomes or units as they are called is sprayed apart and thus missed being hoveled over or fused by those of the opposite sex; while the contents of the weaker one on

account of the absence of sufficient force and velocity remain clumped up in one place, without becoming diffused. Thus there is always the possibility that all the chromosomes or units of the weaker sex, will be hoveled or fused by only a portion of the cell contents of the stronger sex, the rest having been sprayed out or diffused on account of the forceful contact. Naturally in the fertilised ovum, there is always the majority of the weaker sex, which thus prevails. This argument holds good even in the case of the theory, viz., that during war, famine and pestilence, more boys are born than girls; because during these times men alone who are the supporters of their families or administrators of their countries become seriously affected on account of want of food, mental worries and troubles of war service etc. become weak. As already explained above when any nation becomes depleted of its manhood, masculinity survives. Herein lies the most wonderful and mysterious key of nature in the eternal maintenance of a certain constant proportion of sex-ratio among all the species. Instead of the survival of the strongest which is always the case, there is survival of the weakest here. It is this reversal of the general rule that automatically enables the weaker sex to survive and prevail over the stronger one. Had it not been for this principle, the stronger sex would have grown stronger and stronger still and there would have been an extinction of one sex or the other. It is not the aim of this article to dwell further on this. Whatever may be the origin and development of sex, one thing is found clear viz., that a male factor and a female factor are necessary for the origin of life; or a mother cell and a father cell are necessary for the formation of infant cell. So far as birth is concerned, it is thus established that an offspring inherits its existence from its parents.

GROWTH AND DEVELOPMENT.

When once an ovum becomes fertilised by a sperm, the fertilised ovum with all its future possibilities latent therein, begins its second phase of life, viz., growth and development. By growth we mean only gradual increase in size while retaining its inherent quality, individuality and identity. The life history of an individual with a direct developmental process can be summarised thus:—

The period of embryogeny, beginning from a fertilised ovum, gradually increasing and growing into a fully developed foetus, and terminating with its birth as an infant. Then follows the continuous growth of the juvenescent phase, ending in the sexually mature individual at the age of puberty. This is followed by the youth, middle and old ages. All these phases are continuous and are not well separated from each other. This growth or development having different phases or stages therein, is all-embracing viz. physical, mental and psychological, and is only a visible manifestation of

the several Chemico-physiological processes going on in the body, beginning at first in the germinised ovum, and gradually increasing in complexity as development goes on. We thus see that there is a certain thing known as the developmental organisation going on in the body of the individual, beginning with the very inception of his life and terminating only when his life terminates; and for this developmental process to be active and healthy, sufficient nourishment should be assured. How this nourishment is absorbed and assimilated in the body and subsequently converted into a specific potency, powerful enough to bring about the various changes, physical, mental and psychological, in the body, is a science by itself and cannot be dealt with in this article. It is enough for our purpose to say that modern scientists have proved beyond all doubt, that life is but the manifestation of internal physiological and chemico-physical activities in the body, brought about initially by the nourishment taken by the tissues, and subsequently by the various chemical changes and internal secretions circulating in the blood, and that the life of every individual normal or abnormal, his physical appearance, mental development and psychic traits, in fact, his stature, kind of face, length of the arms and legs, the colour and consistency of the integument, the amount and distribution of hair on the body, the tone of the muscle and the sound of his voice and the various emotions to which his exterior gives expression to, are all dominated by the productivity of internal secretions which are the results of the activities of the internal secretion glands such as the thyroid, the pituitary, the suprarenal and the adrenal, the thymus, the pineal and the sex glands. An individual's nature has thus been found to be his endocrine nature. According to the relative development of these endocrine glands, an experienced endocrine clinician can classify an individual as belonging to a specific type of personality, much as the Thyroid personality, the Pituitary personality, the adrenal personality etc. A well co-ordinated and harmonious cooperation of all the endocrine glands brings about a certain well proportioned personality with good physical confirmation and well developed mental and psychological disposition which may be designated as the Standard individuality. And it is this standard individuality that must always be kept in the minds of breeders when selecting sires and dams for breeding purposes.

Heredity :—By heredity is meant only that the progeny belongs to the same class or species of organisms as do its parents. It is more or less a real first approximation of life. It has now been seen that the glands of internal secretion wield a determining influence upon the development of the individual from his very inception. Louis Berman aptly describes that if a man's various powers may be considered as the several instruments of an orchestra, they may be said to conduct it from the very beginning of his movements and to cease only with his termination. From the moment

when the spermatozoon penetrates and foecundates the ovum, the fate of the future being is settled by their disposition. The seal of his destiny is thus soaked with their substance. Every particle of protoplasm and every granule of the impregnated ovum carries with it the representative essence of the resultant forces exerted by each of the parental ductless glands. There is thus a chemical and psychological transmission of not only the marked disposition of the parents, but also of certain of the peculiar familiar, racial and national characters from the progenitors to the off-spring, remaining patent in the fertilised ovum. All those properties which are transmitted from the parents to the off-springs are recognised as inherited. It is only these inherited features or characteristics that distinguish the various races, classes, communities, families and individuals on the face of the earth, such as an Indian from a Burman, a Chinese from a Japanese, a Frenchman from a Russian etc. The same holds good in animals also. It is thus seen that when an infant is born it represents a peculiar inherited combination of the different secretory glands of its parents, constituting more or less the stock in trade to start the business of his life. Afterwards, food, routine of existence, experience in life, misfortune and other environmental conditions modify him on account of their influence upon his ductless glands depressing some and stimulating others. In proportion to the modification of these ductless glands, the individual is changed. In spite of these modifications in the life of the individual, the inherited traits which form the foundation always remain latent and are transmitted to the off-spring.

POSSIBLE POTENTIALITIES OF INHERITANCE.

It has now been seen that the traits of inheritance are the foundations on which the structure of the future life of the individual is to be built. It now remains to be seen as to what are the traits that are inherited from the parents - what from the father and what from the mother. On this aspect of the subject, not much information is available in modern literature, while some is available in ancient Indian literature. In *Susruta Samhita*, the most original and ancient book on Hindu surgery, the science of Gynaecology and genetics is dealt with in some detail. It is mentioned therein that the elements of the hairs of the head and body, beard and moustaches, bones, nails and teeth, blood vessels and nerves, and all structures that go to form the sturdy and hard substances of the body are derived from the father, while the elements of the flesh and blood, fat and marrow, heart and lungs, the alimentary canal, liver, spleen, pancreas, kidneys and bladder and all structures that go to form the soft parts of the body are derived from the mother. This is so far as the concrete parts of the body are concerned. All other features such as valour, health and strength, glow of the body, mental development and all other psychological

manifestations are derived by the infant from the endocrine condition of the parents. In fact they are the admixtures of the developed manifestations of the endocrine glands of the parents at the time of foecundation.

CONCLUSION

Enough has now been said to prove that the health and activity of the off-spring depends primarily upon the traits inherited from the parents and that inheritance plays a prominent part in progenital welfare. For an agricultural country, the importance of cattle breeding on national lines cannot be lost sight of; and a knowledge of the facts detailed in this article, cannot but impress upon the minds of all scientific cattle breeders and cattle breeding organisations, the supreme necessity and importance of castrating all scrub animals as a safeguard against possible unsatisfactory progeny and for the careful selection of the sire and dam in cattle breeding operations.

SOME FACTS ABOUT THE INDIAN LIVESTOCK WEALTH

BY

S. D. AHMAD, B.V.Sc., V.S., L.V.P., P.V.S.,
Marketing Officer (Livestock)

AND

R. A. BHOTE, B.Sc. (Agri.), I.D.D.,
Assistant Marketing Officer,
Central Agricultural Marketing Department.

Livestock in general is a great potential wealth to any country. In India, where the vital industry of about three fourths of the population is agriculture, livestock plays a still more important part. Cattle form in this country particularly, the backbone of agriculture. Bullocks provide the necessary agricultural power for effective tillage, and the cows and she-buffaloes provide millions of the people of India, both children and adults, with milk, meat and their multifarious products - foodstuffs that are wholesome and nourishing. Really speaking, horses, mules, donkeys, camels, sheep, goats, poultry and fish play only a secondary role in our economic conditions; but these animals, which are used in sport, transport, and in mutton, hides, skins, wool, hair and other allied industries, are also important.

India leads the world in cattle and goat populations and hide and skin production. Her position is second, third and fourth in camel, donkey and sheep populations. The quantities of wool and hair exported

annually are also of a considerable value. In nutshell, India is one of the important countrise of the world for the production of livestock and their products, as clearly shown by the facts briefly discussed below. The data relating to exports and imports quoted in this article refer to the pre-war period unless otherwise mentioned.

LIVESTOCK

Cattle:—India possesses approximately 16·6 crore oxen and 4·7 crore buffaloes. These are about one fourth and three fifths respectively of the total recorded oxen and buffalo populations of the world or 71 per cent of the total cattle in Asia. Her position in the international trade in cattle, however, is insignificant and the sea-borne trade of this country is also small. The number of fairly well defined oxen breeds is approximately 35 and that of buffaloes 10. The contribution of the cattle in the economy of India is estimated to be Rs. 1,900 crores annually.

Goats:—India stands second to none in her goat population. She possesses 619·5 lakh goats or more than 27 per cent of the recorded goat population of the world. The annual export of these animals is estimated at 26 thousands, while the imports are insignificant.

Sheep:—With 508·9 lakh heads, India stands fourth in the world's sheep population. She exports about 13 thousand head of sheep annually, the import of these animals being negligible. There are about 30 breeds of sheep found in this country.

Poultry:—The total number of fowls, ducks, geese, turkeys and guinea-fowls kept in India is estimated at about 19·08 crores (1938) and their value equals about Rs. 7·5 crores. The percentage of *desi* fowls and ducks to total laying birds comes to 88·3 and 9·4 respectively.

Horses and mules:—India possesses about 22·24 lakh horses and 76 thousand mules. They represent 1·8 per cent and 0·35 per cent of the world's population of horses and mules respectively. There is no export trade, although 2,095 horses valued at about Rs. 14 lakhs were imported into India during 1939-40.

Donkeys:—With 19·38 lakh heads, India stands third* in the world's stock of donkeys. There is no export or import of these animals.

Camels:—India possesses 9·93 lakh head of camel. Her share in the camel population of the world is 17·2 per cent and she stands second † in the world in this respect. There is no foreign trade in these animals.

* China (30·5) and Brazil (9·3) being first and second respectively.

† Somaliland (25·0) being first.

Fish:—Inclusive of fish caught in estuaries and back-waters the total annual production of marine fish in India is estimated at 116·7 lakh maunds valued at about Rs. 3 crores per year, while the marketable surplus of freshwater fish is estimated at 62·6 lakh maunds valued at Rs. 7·4 crores per annum. There is practically no imports of raw fish into India. Considerable quantities of preserved fish of total annual average value of Rs. 16 lakhs are imported. Before the War, India had an export trade in preserved fish valued at over Rs. 75 lakhs per year. The average *per capita* consumption of fish in India is estimated at 3·4 lb. per annum.

Swine:—India possesses about 27·77 lakh* heads or about 0·6 percent of the world's recorded population of pigs. There is no foreign trade.

LIVESTOCK PRODUCTS

Dairy Products:—74·47 crore maunds of milk are produced annually in India. Of this, 15·5 per cent is left for calves and kids. The value of the remaining quantity of milk used for human consumption is estimated at over Rs. 183 crores in normal times and much higher during the War days. She-buffalo contributes 51 per cent of the total milk production while the share of cows and goats is 46 and 3 per cent respectively.

Out of about 62·93 crore maunds of hand drawn milk in India, about 28 per cent is consumed in the fluid form, 57 per cent is converted into *ghee* and 5·2 and 5·0 per cent is consumed in the form of curd and *khos* respectively. The rest is made into butter (1·7 per cent), cream (0·4 per cent), ice cream (0·3 per cent) and other products like *rabri*, *malai*, *Khurchan*, etc. (2·4 per cent). The average *per capita* consumption of milk and its products in India is estimated at 5·8 oz. per day.

Meat:—The total value of beef, buffalo flesh, mutton, goat flesh and pork produced annually in India for human consumption was estimated at over Rs. 20 crores! † before the War.

Bones:—The average annual production of bones in British India is estimated at 10·28 lakh tons valued at Rs. 5·65 crores. Of this, 7·13 lakh tons worth about Rs. 393 crores remain uncollected, which is a dead loss to the country. In 1941-42, India exported bones and bone meal worth about Rs. 32 lakhs, of which bone meal accounts for a little more than one half.

Hides:—India produces annually about 2·57 crore hides worth Rs. 6 crores. This represents 18·8 per cent of the total hide production of the world. Before the War, India imported raw hides and unwrought leather

* Excluding U. P., Orissa and some States which did not take part in 1940 census.

† According to the estimates made by Col. Sir Arthur Oliver.

worth about Rs. 24 lakhs against the average annual export of raw hides and finished leather worth Rs. 4.35 crores.

Skins:—The annual Indian production of skin is estimated at 4.46 crore pieces (including 2.75 crore goat skins and 1.71 crore sheep skin) worth Rs. 3.63 crores. With her share of 18.9 per cent in the total world's production of skin, India stands second to none. The average annual export of raw and tanned skin from India amounts to 4.32 crore pieces valued at Rs. 5.79 crores, i.e., she contributes 22.7 per cent of the total number of skins presented for sale in the markets of the world.

Wool:—The total annual production of wool is estimated at 8 crore lbs. valued at Rs. 5 crores, while the annual net available supplies come to about 4 crore lbs. In 1939—40, India exported 5.28 crore lbs. of wool valued at Rs. 3.22 crores, against the imports of 76.9 lakh lbs. valued at Rs. 75 lakhs.

Hair:—India produces annually about 1.25 crore lbs. of hair (goats and camels) valued at over Rs. 3 crores. She exports every year approximately 70.5 lakh lbs. against the imports of negligible quantity of hair.

Manures:—It is estimated that the value of excreta of cattle, goats and sheep produced annually in India comes to Rs. 282.5† crores* in peace times.

Eggs:—Out of the annual egg production of about 336.48 crores, about 90 per cent are of hen and the rest mainly laid by ducks, the share of geese, turkeys and guinea fowls being negligible. The total value of eggs sold annually was estimated at Rs. 5.25 crores before the War. The export trade in eggs is very small, the imports being negligible.

REARING OF YOUNG CALVES†

BY

R. L. GULATI L. V. P.,

(Veterinary Assistant Surgeon, Amritsar)

It is not with the idea of giving you the details about the rearing of calves that I have written these few lines, as you all know this very well, but it is to arouse your interest in this very essential aspect of cattle breeding, that I venture to place before you a few suggestions. The importance of cattle breeding has never been so keenly felt, as it is being felt now in these days of war. There is a severe drain on the lives of

* According to the estimates made by Col. Sir Arthur Oliver.

† Paper read at the 9th annual General Meeting of the Punjab Subordinate Veterinary Service Association.

cattle for military purposes, both for beef and milk. You must have seen that thousands of animals are being purchased by these authorities for the production of meat and also for dairy products. Pure milk and pure ghee, which are essential for health of the nation, are getting so scarce, that it is very difficult to get them from the market. Keeping this in view it is the duty of every veterinarian to see that he contributes his share, both in the way of propaganda and practical suggestions for the improvement of the live stock, to the people of the area he is serving. This, I assure you, is a very solid and silent work for winning the war.

There are many essential aspects of the cattle breeding problem, but the one which we are discussing today, is the most important and essential matter. "Child" as you all know, "is the father of man." Similarly the calves and heifers of to-day are going to be the bullocks and cows of tomorrow, and if the calf is neglected, the very root of the industry gets jeopardised and the operations suffer tremendously. Fortunately good care is being bestowed upon the male progeny in cattle in the villages but the females are unfortunately being neglected both in the villages as well as in the urban areas by the Gujars and the other owners. It is this point for which we should educate the people as much as possible because females are the most essential wheel of the breeding operations machinery.

The care of the calf begins from the time it enters the womb of its mother and the step-motherly treatment, generally meted out to the pregnant cows, when they get dried up should be condemned as vehemently as possible. This neglect on the part the owner leads to a tremendous fall in the health of the mother with the result that her own milk yielding qualities, as well as the health of the calf she carries, suffers very badly. Whatever may be the good qualities in the cow and however excellent be the bull from which she was mated, if she has not been properly fed during pregnancy you can never expect the child to retain the qualities of its parents. It is therefore necessary that the cows be properly fed during pregnancy and we must all educate the public over this important point.

Giving of colostrum to the calf, when it is born, should also be insisted upon, as you know, it serves as a useful laxative. Although we are telling these things to the public every day but still you must have all realized how little we have succeeded in educating the people over these matters. Hence we should never be tired of the repetitions.

Giving exercise to the calves is the next essential point. People usually keep the calves tied up from morning till evening. This is very un-natural. A young calf, like our own young ones, needs active exercise. The health of the calf suffers tremendously by being tied up and it never grows to be a healthy and stout animal.

Feeding of calves is also being neglected. People do give some milk to the babe for the first few days but later on the quantity is hopelessly reduced. This is not supplemented with any other good ration with the result that the calf remains stunted and unthrifty. Such a calf will either succumb to some disease on account of lack of resistance or will grow as a weak and useless animal.

Calf is a constantly growing creature and needs all the essential food elements in good quantities. Public should be educated to feed them liberally on milk, because depriving the calf from this essential food in its due quantity would be a false economy. It will be a temporary gain in milk but a permanent loss in the life of the young one.

The quantity of milk allowed to the calf should be about 2 to 3 seers from birth to one and a half month and later on about 1-2 seers. This should then be supplemented with concentrates and green fodder. The mixture suggested by Mr. Aggarwala in his book "Feeding and Milking of Cows" is as follows:—Grams 2 parts, bran 1 part, oats 1 part, linseed 1 part. All these things should be ground together and fed daily after mixing in a small quantity of boiling water from quarter to half a seer as the calf advances in age.

Gentlemen, herein, I have stressed briefly the importance of carefully rearing the young calves, not neglecting the females; and have also given the most salient points to be observed in this connection. I will now request you, before taking my seat, to take up this matter with the public enthusiastically and to do your bit in this very critical period of the modern history.

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Editorial

OUR FOUNDATION STOCK

The Madras Government is forging ahead with its 'plans' for reconstruction after the war. On the 4th September 1944, a General Committee met under the presidentship of His Excellency the Governor and, in the absence of an elected legislature in the Province, proceeded to call in representatives of the general public to help and advise the Government on what they thought would be wanted when the war came to an end. Various sub-committees have been announced to deal effectively with the different subjects. Veterinary and Live-stock is one such sub-committee. The task of going into the various ways and means of improving the Veterinary and Live-stock has devolved upon this sub-committee and we look forward to a really interesting blue print of future programme.

At the very outset we should like to impress upon the Committee that this subject of "Veterinary and Livestock" is a long-neglected subject-neglected alike by the Government and the public. We have, in these pages, often referred to the tragedy of this neglect and have been constantly pleading for a re-orientation of the policy towards this one of the most important subjects of great economic importance. We have also elaborated many a time the lines on which the development of Veterinary and Livestock should take place. As Mahatma Gandhi has often said, our downfall commenced with our neglect of our cow and it is our bounden duty to rehabilitate the cow in her pristine glory and splendour.

During the last decade some attempts have been made to remedy the past neglect by fostering livestock improvement. On the principle that bull is half the herd, attention is focussed

in preserving good sires and distributing them throughout the country. Great strides have been made in this direction and we are proud of that. This is good as far as it goes. But then, what about the other half of the herd, the cow? Is that not important to merit our attention? Can that half be ignored in any attempts at improving the herd? What steps have been taken so far in this direction? As far as we are able to gather, very little has been done. And that has been a grave defect in the present policy of livestock development.

It is a well known fact that the two main essential points in the development of Animal Husbandry are Selection and Feeding. Granted these two, the herd can be assured of a better standard of quality in the course of a few years. For this end, it is not enough if the selection is confined only to the bull. The cow also must come in for careful selection. A start should be made immediately—this should not be allowed to wait till the end of War—for a careful selection of the available female stock in the different localities and collected together as a Foundation stock. These, with the selected sires, should form the nucleus of livestock Breeding Farm which should be started in each and every district of the province. If for any reason it is not feasible to start Breeding Farms in each and every district, it is highly desirable that small Farms are at once started in the various breeding tracts of the Presidency. We can think of at least a dozen places, where recognised breeds are established already and where small Breeding Stations can be opened immediately. These demonstration units, we are quite confident, would encourage local farmers to take to Animal Husbandry very keenly. The stock—both male and female—from these Farms can be distributed in course of time, to approved and licensed Farmers in the District who will be instructed on the correct method of Animal Feeding and Management. This is the only way of carrying out the accepted policy of grading up the existing stock in a short time and we were therefore very glad that the Provincial Veterinary Conference which met in April last under the presidency of Mr. T.J. Hurley, the Director of Veterinary Services, Madras, unanimously passed a resolution for the opening

up of a Breeding Farm in each and every district. It is rather unfortunate that this highly practical resolution has not yet been given effect to. We are given to understand that no action will be taken on this resolution for the duration of the war and that, till then, it will have to remain as a pious wish and, what is worse, even the starting of private breeding farms will not be encouraged. If our information is correct—how we wish it is not!—then there cannot be a more callous disregard of the requirements of the country. It would be a great tragedy to our Livestock development if the present favourable circumstances are not taken advantage of and utilised to the maximum benefit of the country.

We therefore earnestly appeal to the authorities to make immediate arrangements for the formation of these Foundation Stocks and the opening up of Breeding Farms in the different parts of the country.

*As we go to the press the following editorial appears in our local contemporary, **The Hindu** of Madras and we make no apologies in publishing it in extenso. It indicates the extent of the popular needs of the country and we are sure that if the policy recommended in our editorial is given effect to, there is bound to be a great stride in livestock improvement. [Ed. I. V. J.]*

REAR MORE CATTLE

The Government of India's circular to the Provincial Governments and Local Administrations on the position of livestock in the country is an indication of the extent to which our cattle wealth stands depleted and the dangers of not paying prompt attention to improving it. More causes than one have contributed to the deterioration of this wealth. One of them is the great demand that has obtained in recent years for hides and skins, and the other the need to provide for a large and growing army that had to be stationed in India from Europe and America for purpose of defence against Japanese aggression. Crime statistics testify to the fact of depletion, an increase having occurred in recent years in cattle theft and cattle poisoning with the rise in the demand for skins and

meat. This demand has also led to indiscriminate slaughter. "If only animals over ten years of age are killed," the Animal Husbandry Commissioner is reported to have stated, it is most improbable that any useful bullock or breeding cow will be sacrificed."

The Animal Husbandry Commissioner suggests that the custom of slaughtering cattle while in poor condition is wasteful and that therefore they should be stall-fed for three months so that they may be brought up to slaughter condition. This seems to lay more emphasis on preparing the stock for slaughter than on means to improve them. If the owners had had the necessary fodder to feed them with, it is doubtful whether the animals would have been offered for slaughter. So far as urban cattle are concerned, the economics of maintaining them has been studied by marketing officers. "About half of the milk required in urban areas is produced," we read in one of the marketing surveys, "on the spot under most uneconomical and insanitary conditions. On account of extra expenditure which has to be incurred on feeding, labour and other items in cities, many good cattle still in their prime, cannot be maintained economically during the dry period and are consequently sold for slaughter at the end of their lactation." This is a fact which should be within the experience of all who have any close acquaintance with the milk supply organisation and economy in Madras. The cost of cattle feed has increased enormously since the war broke out. Straw is sold to-day at 10 to 12 annas a *piri* and Rs. 25 to 28 a cartload of 30 *piris*. Gingelly seed *poonac* is sold at two to three visses a rupee. Cumbu sells at two measures or so a rupee, while cotton seeds are a rarity in the Madras market. The prices of the various varieties of brans have similarly gone up sky high. Is it any wonder that people are obliged to pay for milk at 14 as. a measure - often one rupee - and congratulate themselves if they could get it unadulterated at that price?

Owing to these conditions, cattle have become difficult to obtain even at high prices. A cow yielding about three measures of milk a day costs Rs. 350 a head in our City, that is, four

to five times its pre-war cost; while the prices of she buffaloes are even higher relatively. It is notorious that the production of milk in Madras has been the lowest of all the Provinces, about 3 ounces against the average in India of over 6 ounces. The demand for bulls is so great that the Government farms have not been able to cope with it. There is a school of thought according to which because India is rich in numbers of cattle, we can afford to stand a little depletion. This, as one of our well-known Directors-General of Veterinary Services has pointed out, is a foolish notion. The safety of a country like India susceptible to frequent out-breaks of cattle diseases lies in the numbers of its cattle. The fact that the Animal Husbandry Commissioner recognises this fact and has called upon the Provinces to encourage breeding in all ways - by providing bulls as well as feeds - is a circumstance which will inspire a certain amount of confidence in the minds of the public.

BIHAR CIVIL VETERINARY DEPARTMENT

Elsewhere we publish in the Correspondence column a letter from one interested in the Veterinary profession in the Province of Bihar. It is a very painful and sickening reading to see the sad plight of the Veterinary Assistant Surgeons in that Province. As our readers are aware, we have always been stressing the importance of making the labourer worthy of his hire, and it is a tragedy that, in a predominantly agricultural country as ours, the Veterinarians who have to look after the livestock are treated so badly. There is very little consideration paid to the scientific and educational attainments of the Veterinary Graduate and he is paid lower than, what our correspondent pathetically puts it, a clerk of the Burial office. Is it any wonder then that the educated youth of the country do not take to the Veterinary Profession and enter other walks of life where they are assured of at least a decent living. Bihar has got an up to date Veterinary College and it is up to the authorities of that institution to see that its *alumni* are treated as members of a scientific profession.

Clinical Articles

*AN ADVANCED CASE OF JOHNE'S DISEASE IN A BELLARY EWE AT THE LIVESTOCK RESEARCH STATION, HOSUR

BY

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

Lecturer in Parasitology, Madras Veterinary College.

Very meagre information is available in literature on Johne's disease affecting sheep in India. The incidence of the disease in sheep compared to that in the bovine subject appears low, which is due, probably to want of adequate enquiry into the diseases of sheep or possible cases mistaken for general debility or parasitosis and the animals sent to the butcher. It is only in recent times that the disease is looked for among the sheep kept in some of the Government Livestock Stations. In this farm, Johne's disease among sheep was first diagnosed during the year 1937 by Rahimuddin (1940) who confirmed it in one sheep during the year and in two more sheep the following year. About the same time, a few cases of the disease in sheep have been met with and recorded by Nanda and Gur Bux Singh (1940) in the Hissar Cattle Farm. Beyond these, no record, in India, of this disease in sheep appears to be available. Hence opportunity is taken to record the incidence of the disease among the sheep of this farm and describe in detail an advanced form met with in an ewe, recently.

From the year 1937 onwards, critical observation on cases of debility and persistent diarrhoea appears to have been made to find out if the disease existed in the stock of sheep in this farm. Suspected material was examined at the laboratory attached to the farm hospital and also sent to the Madras Veterinary College for confirmation. Some sheep showing clinical symptoms were sent to the Mysore Serum Institute for investigational purposes. Tests with Avian-Tuberculin and Johnin were conducted to spot out early and incipient cases of the disease with varying results. During the year 1940, a mass test of all the sheep (210) was conducted by the Veterinary Investigation Officer, Madras with Johnin manufactured at the Mysore Serum Institute with the result that 30 sheep gave a positive reaction and 24, a suspicious one. But the subsequent examination of bowel washings from none of the sheep revealed any acid fast bacilli. The general condition of the majority of the sheep, at the time of the test was not satisfactory since they were all having a more or less chronic infestation

with helminths. Sterilisation of the pasture on which the sheep were continuing to graze for the previous two years and more, or introduction of a compartmental or rotational grazing scheme to do away with parasitic infestation on the pasture and destroy any Johne's bacilli, if present, could not be undertaken on financial grounds. Hence the problem of control of helminthiasis was solved by regular monthly dosing of the entire flock for worms. The repeated monthly dosings supplemented later on by removal of the flock from the old pasture to fresh places resulted in the improvement of the whole flock in general health and condition. In an attempted culling out of the bad doers, one ewe (No. 49) was picked out for examination and sent to the farm Veterinary Hospital.

The history of the case was that the ewe was consistently losing weight and did not put on flesh. She was 3½ years of age and had yielded two lambs. Latterly, the animal developed a puffiness and oedema under the lower jaw which was pronounced while returning from grazing and became less so the following morning. This condition has been noticed by Rahimuddin and mentioned in his notes left in the records of the Hospital. Nanda and Gur Bux Singh (1940) record this symptom in the cases they have described and lay stress that it was related only to Johne's disease ruling out the possibility of helminthiasis, since the examination of the faeces showed only a very few ova of *Haemonchus Contortus*. The author has previously seen this condition only in cases of helminthiasis. In the present case, it is rather difficult to assign it to Johne's disease alone since there was co-existent haemonchosis as well. It is unfortunate that Nanda and his collaborator, did not make mention of worms, if any, met with in the abomasum or intestines during the post-mortem examination made on this case. The only other clinical symptom shown by the subject was the looseness of the bowel. There was no diarrhoea but the consistency of the evacuations was that of soft cowdung and this condition persistent all along the period, the animal was under observation. Examination of the faeces revealed ova of *strongyle* species and smears made out of the faeces revealed clumps of acid fast bacilli indistinguishable from *mycobacterium paratuberculosis* in large numbers, which were confirmed by the Principal, Madras Veterinary College. The ewe was destroyed on 16-6-41 i.e., 25 days after its segregation. The prominent post-mortem findings were as follows:—

Emaciation of carcase:—

Abomasum:—Mucous membrane pale and contents mixed with a very large number of worms (*Haemonchus contortus*).

Duodenum:—Slight thickening of the mucous membrane.

Jejunum:—Very little ingesta present. Slight thickness of mucous membrane present.

* Paper presented before the 33rd Session of the Indian Science Congress held in Delhi during January '44.

Ileum:—Typical corrugations of Johne's disease as seen in bovines, particularly at the end. No haemorrhagic spots were seen.

Ileocaecal valve:—Slight tumefaction present but no haemorrhagic spots.

Caecum:—Mucous membrane showed corrugation but with no haemorrhagic spots.

Colon:—Corrugations were present at the beginning but gradually the mucous membrane showed only stray folds.

Rectum:—No lesions present.

Mesenteric lymphatic glands:—These were enlarged very much and section revealed oedema with pale thin greyish looking juice oozing out of the cut surface.

Liver:—No schistosomes were present in the portal veins.

Other organs:—Nothing abnormal except anaemia.

Microscopical Examination:—

Smears from mesenteric lymph glands showed large numbers of acid fast bacilli in clumps, indistinguishable from *Mycobacterium paratuberculosis*.

Ileum:—Numerous organisms both in clumps and stray ones seen.

Ileocaecal valve:—Very numerous clumps in large patches present.

Caecum:—Large numbers of organisms.

Rectum:—Very few organisms present.

Result of post-mortem examination:—Johne's disease of an advanced type.

DISCUSSION

The lesions in the intestines, particularly in the ileum, caecum and colon were very marked as could be seen in Plate No. 1 and resemble those met with usually in the bovine cases of Johne's disease. The mesenteric lymphatic glands also were unduly enlarged with softening of the medulla and exudation of a greyish fluid teeming with a large number of organisms. This finding of a very important lesion characteristic of the disease appears to be prominently absent in the case described by Nanda and Gur Bux Singh (1940). They have mentioned that 'The intestinal walls, particularly of the ileum were thickened and pale, the mucous membrane of the bowel along its entire length was pale, grey and slimy and showed a variable degree of hyperaemia but there were no corrugations characteristic of Johne's disease in cattle'.

The microscopical examination of smears made out of the faeces, prior to destruction showed a large number of clumps of organisms. After destruction, scrapings from the ileum, caecum, ileocaecal valve, colon and rectum were examined and found to contain the organisms in varying



Photo of the
Lesions in the Intestines of an Ewe (Suffering from Johne's Disease)
Ileum, Ileocaecal Valve and Caecum.

numbers. The mesenteric lymphatic gland showed large numbers of organisms also. Sections of the ileum and the mesenteric lymphatic gland were made and examined by the Principal, Madras Veterinary College, who reported along with the finding of the bacilli, changes quite characteristic of the disease.

SUMMARY

An advanced case of Johne's disease was met with in a Bellary ewe. The symptoms shown by the animal while alive, the post-mortem lesions seen, and the laboratory findings made have been described. It is strange that this case did not react to Johnin about 12 months prior to the destruction, when the lesions should necessarily have been early and mild.

ACKNOWLEDGMENT

The author feels grateful to the Principal, Madras Veterinary College, for confirmation of the microscopical findings made by him at the laboratory attached to the farm hospital. To Mr. T. J. Hurley, the author is indebted for helpful suggestions and advice in the matter of diagnosing and eliminating the disease among sheep. The author feels grateful to Mr. R. W. Littlewood, the Livestock Development Officer, under whose control, the sheep breeding scheme is being worked, for the great amount of zeal and interest evinced by him in the matter of attending to disease conditions affecting sheep.

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ON A SPECIES OF *CLINOSTOMUM* IN A CAT

BY

A. B. BELLIAPPA, G.M.V.C.,

Veterinary Assistant Surgeon, Mercara, Coorg.

A cat was brought to me with the history that it was off feed for three days and that it was showing general symptoms of malaise. The temperature was found to be normal and microscopical examination of the faeces did not reveal anything of importance. On further examination the cat was found to be champing its jaws often. There was salivation and the movements of the jaw was suggestive of some foreign body stuck up inside the mouth. On examining the mouth, a large number of papillomatous outgrowths were found under the tongue on either side of the

frenum linguae. The structures were about half an inch in length and a casual look did not reveal any sign of life in it. But on closer observation the free end of the 'growth' was found to make slight movements off and on. Evidently they were parasites and, with a pair of forceps, twenty one parasites were removed. After removal, tiny pits were noticed in the mucous membrane showing the places where the parasites had dug themselves in. With ordinary treatment, the cat was alright in about four days.

The parasites were sent to the Imperial Veterinary Research Institute, Mukteswar for identification and Mr. Bhalerao, for whom my thanks are due, identified them as belonging to *Clinostomum* species.

It is interesting to record that the same cat was brought to the Chief Veterinary Officer, Coorg (Mr. A. B. Boppayya) nearly a year previously with the same history.

Another cat with a similar history was brought for treatment and, as many as 40 parasites were removed. In that case, the parasites were noticed not only on the sides of the frenum linguae but also on the sides of the mouth and, as a result of it, the cat was keeping the mouth open.

ALUM IN THE TREATMENT OF BOVINE PIROPLASMOSIS

By

M. H. RAHMAN, G.V.Sc.,

Veterinary Assistant Surgeon, Narayanganj, Bengal.

I request you to publish the extract given below in your esteemed journal to collaborate the above articles written by Mr. B. Ramiah, G. M. V. C., Veterinary Assistant Surgeon, Bobbili, in your journal of July 1943, Vol. XX, No. 1 for the information of the members of the profession.

An out patient Case No. 707 dated 8-6-44 of my dispensary, a Dacca breed cow in milking passed bloody urine (red water) with a temperature 104.2° F. Blood smears from the cow of examined under microscope were positive for *B. Bigeminum*.

Three doses, once daily of powdered Alum 4 drams Boric Acid 2 drams in one pint water were given to the cow. Next day after the first dose, urine changed from blood red to reddish in colour and temperature came down to 102° F. After the second dose, urine became normal in colour and the temperature too came down to normal. The third dose also was given and on the fourth day it was found that the cow was cured

completely. The same animal is now giving milk, full capacity, and up to this day there was no relapse of fever.

My thanks are due to the Assistant Superintendent, Veterinary Vaccine Sub-section, Dacca, who kindly examined the smears.

A CASE OF MAGNESIUM DEFICIENCY IN A COW

By

S. KANTHA RAO PATNAIK, G.M.V.C.,

Touring Veterinary Assistant Surgeon, Somapata, Madras.

Subject:—A local bred red cow of medium size aged about seven years.

The cow was brought to me by the owner on 10-5-1944 with the history that the cow was getting epileptic fits very frequently for the last fortnight.

The cow calved three months back and was yielding one seer of milk per day. She was being fed only on rice bran and straw without any concentrates, and she was losing condition generally. She was getting epileptic fits five to six times a day, and the duration of each fit being ten to twenty minutes.

Symptoms:—Muscular tremours of the whole body followed by an epileptic fit. She was feeding scantily and losing condition. Temperature, faeces and urine normal; visible mucous membrane slightly congested.

Blood smears and faeces proved negative for any parasites on microscopical examination.

Diagnosis:—The disease was diagnosed as a case of Magnesium deficiency (in lactation cows).

Treatment:—She was given 50 c. c. of 20% Magnesium Sulphate intravenously and the owner was advised to give complete rest to the animal in shade for a few days. No other drug was administered either internally or externally.

The cow was observed for a few minutes after the injection and nothing unusual was noticed in her. Subsequent to the injection the cow made an uneventful recovery and not even a single fit was noticed till this day.

After a lapse of a week the cow was given some tonic powders for improving her general condition.

N. B.—I had occasion to meet with a few such types of cases previously and all of them were diagnosed as Eclampsia due to nervous irritability and the treatment was given accordingly with little success. But after studying the article on the deficiency of Magnesium Salts in animals in the Indian Farming, June 1943, page 305, this case was treated on the above lines with great success.

SURRA IN A PONY

BY

A. R. MADHUSUTHAN, G.M.V.C.,
Veterinary Assistant Surgeon, Namakkal.

Subject:—A three year old, entire bay pony from village Malaropankottai of Namakkal Taluk, was brought for treatment at the Veterinary dispensary, Namakkal, on 7-9-42.

Symptoms:—Staring coat, Impaired appetite, slight shivering, dullness, temperature 103° F. Oedema of the rectum and the under surface of the abdomen and urine slightly high coloured. Blood smears taken on 7-9-42 were sent to the Principal, Madras Veterinary College, who wired on the 11th September 1942 that the smears were positive for Surra. All possible precautionary measures against the spread of the disease were taken.

On 12-7-42 the pony received a dose of Naganol, 20 c.c. of 10 per cent. solution intravenously. After the injection the pony steadily improved. It became bright, fed satisfactorily and the slight oedema on the scrotum and on the lower aspect of abdomen gradually disappeared; the temperature came down to normal.

About a fortnight after, on the 25th, 26th and 27th September 1942, the pony was dull again, its appetite was poor, but the temperature remained normal. There was weakness of the hind quarters, the gait was swaying from side to side and occasional chorric spasms were noticed on the neck and head. Blood smears taken on the 25th, 27th and 28th September 1942 were negative for Trypanosomes. Still a second dose of Naganol 30 c.c. of 10 per cent. solution was given on the 27th September 1942 *i.e.*, exactly 14 days after the first injection was given. The nervous symptoms disappeared after the injection and from 29-9-42 the pony was found to be calm, looking bright, feeding satisfactorily and improving in condition too.

On the 12th October 1942 *i.e.*, 15 days after the second injection the pony received a third injection of Naganol in the same strength and dose (30c.c. of 10 per cent. strong.). After this the pony improved in condition rapidly. The daily temperatures recorded for two months

after the third dose of Naganol was given were normal. The pony picked up condition and was able to run as usual. The pony was discharged cured on 18-12-42 and the owner took the pony back to his village.

Surprisingly the owner of the pony reported that the animal, six months after its discharge from the dispensary, died quite suddenly one night and that the cause of death was not known.

The sudden death of the animal might easily be due to other than Surra. [*Ed. I. V. J.*]

BABESIA EQUI

BY

SHEIK CHINGISHAH, G.M.V.C.,
Veterinary Assistant Surgeon, Parvatipur, Madras

Subject:—Pony, Bay, Indian bred, aged about 8 years was brought for treatment to the Veterinary Dispensary, Parvatipuram on 11-6-1942.

History:—The owner informed me that the pony was passing bloody urine from the previous day, refusing feed and very dull.

Symptoms:—Mucous membranes were pale and icteric, temperature 105° F. The pony was passing high coloured urine (coffee colour), off-feed, dull and depressed.

Diagnosis:—Babesiosis. Confirmed for *B. Equi* microscopically on the same day.

Treatment:—A dose of Diaphoretic mixture was given internally and 40 grains of Quinine Hydrochlor in 8 c. c. of water was injected intramuscularly. Externally ice was applied to the head to control the temperature. The patient was allowed to drink barley water.

Second day:—Temperature 104.6°F. Repeated the internal administration of the diaphoretic mixture and external application of ice to the head.

Third day:—Temperature 104.6° F. Another injection of 8 c. c. of Quinine Hydrochloride was given intramuscularly besides the internal administration of the diaphoretic mixture.

Blood examination on the fourth day was still positive for *B. Equi* and the temperature was 104°F. The pony was still passing high coloured urine.

Fourth day:—Temperature 104°F. As there was no response even after two injections of Quinine Hydrochloride, 10 grains of Antimony Tartaratum in 20 c. c. of distilled water was injected intravenously. The internal administration of diaphoretic mixture was continued.

Fifth day:—Temperature 102° F. Pulvis Chirata and Sodii-Bicarb each 1 ounce in a pint of water was administered internally. The patient was still passing high coloured urine.

Sixth day:—Temperature 100·6° F. Another injection of 10 grains of Antimony Tartaratum in 20 c. c. of distilled water was injected intravenously.

Seventh day:—Temperature normal. After the second injection of Antimony Tartaratum the animal appeared lively and active.

Blood examination after the seventh day *i.e.*, after two injections of Antimony Tartaratum was found negative for *B. Equi*. Temperature was normal.

The patient recovered and was alright from the eighth day and was discharged cured.

After a lapse of about 25 days, the District Veterinary Officer, Vizagapatam, during his inspection sent for the pony on 12-7-42, examined the pony and found the pony quite free from the infection.

As I did not get further cases of *B. Equi* to try Antimony Tartaratum to record further observations, I am publishing this article so that my Colleagues may try this treatment and record their observations.

Conclusion:— 1. Quinine salts are said to be specific for *B. Equi*. But in this instance it did not act.

2. *B. Equi* was present in the blood smear even after two injections of Quinine Hydrochloride.

3. The success of Antimony Tartaratum in cattle for protozoan diseases of blood prompted me to give a trial in *B. Equi* also.

4. The trial of Antimony Tartaratum in *B. Equi* has given satisfactory results.

5. Since Quinine preparations are limited for general supply and since Antimony Tartaratum is available with one and all of the Veterinary surgeons, it is easy to treat the disease.

Acknowledgments:—My sincere thanks are due to Mohammad Rahimuddin Sahib Bahadur, G.M.V.C., P.G. (Edin), D. V. O., Vizagapatam, for the encouragement given in writing this article. My thanks are also due to Messrs. B. Ramiah, and C. Annamalai, Veterinary Assistant Surgeons, for examining the blood specimens under microscope.

Our Mail Bag

Follicular Mange. Sheikh Chengisha, G.M.V.C., Veterinary Assistant Surgeon, Paravatipur, records a case of Follicular Mange in a bull, treated successfully with the application of 5% solution of Zinc Chloride for a week, when the animal was completely cured and discharged. In the beginning some skin lesions like ringworm were seen all over the body and more predominantly on the hind quarters. In the course of 2 to 3 months they developed into nodules, some containing cheesy pus, while others becoming red and denuded of hair. Diagnosis of Follicular Mange was confirmed by microscopical examinations.

After cleaning the affected parts with a mild IZAL lotion and drying well, 5% solution of Zinc chloride was applied once a day. There was great relief within a week when the animal was discharged cured.

Necrosis of Horn in Cattle. O. S. Bhatnagar, B.Sc., G.B.V.C., Veterinary Assistant Surgeon, Baraut, Meerut, U. P. records a line of treatment for necrosis of horn in cattle with cent per cent success. (1) The moment the slightest bend is seen, the horn is amputated at the very base. (2) Control the haemorrhage by thermocautery *i.e.*, searing by hot iron. (3) The cut portion is dressed with simple cyllin oil that day. (4) Next day the horn is thoroughly cleaned with lotion, dried and a plug of Liqr. Arsenicalis is placed in the core of the horn. (5) The horn should then be daily dressed with Liqr. Arsenicalis and if inflammation develops on the face then dressing of cyllin oil is to be replaced. Liqr. Arsenicalis is continued after the inflammation subsides. Since arsenic preparations are cumulative it is safer to dress with cyllin oil only every third day.

The application of Arsenic should be strictly limited to the horny part.

Treacle to kill Maggots. Tekal Srinivasa Shastry, G.V.Sc., Veterinary Assistant Surgeon, Firozabad, U.P., reports cases of maggot wounds in cattle successfully treated with treacle. One rainy day, when there was no stock of phenyle or turpentine in the hospital many cases attended the hospital with maggot wounds. Not knowing what to do, he dressed those cases only with treacle which he had in plenty. Next morning to his great surprise he found all the maggots dead and ever since he is using only treacle to kill maggots. Sugar in the place of treacle has also given very satisfactory results.

Trypan Blue in Distemper. The above author records cases of distemper successfully treated with Trypan Blue. 2 c.c. of 1% solution of Trypan Blue is given. No symptomatic treatment is necessary before or after the Trypan Blue injection. Only one injection is enough for the entire cure in majority of cases and a second injection may be necessary only in some cases after an interval of four days after the first injection.

College News

BENGAL VETERINARY COLLEGE

The following students have passed the Supplementary Diploma Examination of the Bengal Veterinary College, for the session 1943-44 held on and from the 26th to 28th June 1944.

Sl. No.	Name	Place of origin.
1.	M. U. A. Chowdhury ...	Assam
2.	M. U. Chowdhury ...	"
3.	H. N. Roy Chowdhury ...	"
4.	D. K. Saikia ...	"
5.	H. R. Akhond ...	Bengal
6.	E. Abraham ...	"
7.	Md. H. Sharif ...	"
8.	H. P. Moktan ...	"
9.	M. H. Joarder ...	"
10.	A. R. Sen Gupta ...	"
11.	A. H. A. Zaman ...	"
12.	M. Z. Uddin ...	"
13.	R. Mondal ...	"
14.	Z. Q. Chowdhury ...	"

Belgachia, }
28-6-1944 }

A. LATIFF, B.H.V.S.,
Principal, Bengal Veterinary College.

Association News

BOMBAY VETERINARY MEDICAL ASSOCIATION

The Secretary, Bombay Veterinary Medical Association has received a sum of Rs. 40 from one of the Veterinary Surgeons who does not want his name to be published and desires that this small amount may be utilised as a token gift to one who might write a suitable article on

Importance of cattle in "grow more food campaign." He further says "I have jotted down a few points, given below which will give you an idea of what I generally think about the subject. The article may be published in the *Indian Veterinary Journal*."

We gladly publish these points and we wish this kind of enthusiasm and desire to encourage article writing becomes infectious to our professional colleges.
(Ed. I. V. J.)

Importance of Cattle in "Grow More Food" Campaign

Points specially to be referred to or to be borne in mind, while dealing with the above subject:

(1) The present anxious economic condition of the Indian farmer and the state of his cattle wealth.

(2) "Drink more milk".

(3) Necessity of milk—the vital food—and how it can be economically obtained by all people.

(4) Ways and means to breed and maintain normally sufficient number of milch animals in these days of war dearth.

(5) How good supply of nutritious fodder and concentrates for milch and working animals can be obtained by all average people particularly the peasants.

(6) To keep up necessary energy and stamina in order to be able to do the essential manual work at the farm, the farmer finds it hard to get his own supply of food grains. How can he then support his essential Livestock with fodder and concentrates?

(7) Milk yield gets reduced or sometimes is absolutely stopped on account of want of proper feeding in these days.

(8) Indian Agriculture and its absolute dependence on animal labour.

(9) Successful farming in India, in the existing conditions of the land divisions, particularly in the province like Bombay, is impossible without efficient animal labour.

(10) Farmer's condition appears to be very precarious in many parts of the country where they are nearly starving and are anxious of the lives of their own, their families and their children. How can they afford to take care of their essential cattle wealth?

(11) If, as it is feared, the essential cattle wealth of the country, is gradually going down and getting diminished on account of scarcity of essential fodder supply, what could be the condition of the Indian farming during the next few years even after the war? Will it not tell upon the normal yield of the agricultural products required for human consumption?

(12) Lot of money, it seems, is being sanctioned and utilised on the campaign of "Grow more food" by way of irrigation, land development and improvement, supply of seeds etc. The various agricultural departments in the country seem to be intensively engaged in this affair with big plans or projects, costing lakhs of rupees. The question remains as to how can they grow more food without the help of animal labour on the field and on the road. Are they doing any thing in this respect? If they are not doing anything, what actions should the Veterinary Department take under the circumstances?

(13) Are not the Veterinary Departments—provincial, central or Indian States—concerned with preserving the cattle wealth of the country under the present critical circumstances brought about by the war and other conditions? Should they not be alert on this vital subject and should they not ask for necessary money from the Government in order to adopt necessary measures for preservation of the country's cattle wealth with which only the Veterinary Department is concerned and on which the existence of Veterinary Departments mainly depend.

(14) To preserve the cattle wealth in an efficient manner seems to be the pressing obligation on the part of the Veterinary Departments. Have they taken any action so far in this connection? If not, how should they proceed immediately?

(15) Finally, some definite ways and means by which the problem of preserving the cattle wealth of the country can be practically solved.

(16) Useful Agricultural and milch cattle are probably indiscriminately slaughtered now for food purposes. If so, how can this vital loss be prevented?

BOMBAY VETERINARY MEDICAL ASSOCIATION

Ref: *Indian Veterinary Journal*, Vol. XX, No. 4, January 1944, P. 217.

The members of the Bombay Veterinary Medical Association may please note that it is not possible for the Secretary to correspond individually in all cases and hence they are requested to kindly go through the following for their information and to excuse the Secretary for his inability to write individually.

History of the Association. This 'Bombay Veterinary Medical Association' formerly known as the 'Bombay Veterinary Graduates Association' was founded in the year 1921. This Association is now running its 24th year, and will complete it by the end of December 1944.

2. Presidents of the Association. The first President of the Association was Veterinary Surgeon P. D. Maniar in 1921. The second

President was the late Veterinary Surgeon A. D. Lopez. The third was again Veterinary Surgeon P. D. Maniar. The fourth President of the Association was the late Veterinary Surgeon and Professor V. E. Vakaria in 1924. From the year 1925 to 1943 inclusive for a period of 19 years Khan Sahib N. D. Dhakmarwala was the president. The present President of the Association is Rao Bahadur V. R. Phadke, retired Principal of the Bombay Veterinary College.

Thus it will be seen that the Bombay Veterinary Medical Association, is now running its 24th year and that five Veterinary Surgeons occupied the Presidential chair till now.

3. Annual Conferences Held. From the year 1921 to 1943 inclusive, that is, during the 23 years 16 conferences were held at different centres. The 1st and the 19th were held at Poona, the 2nd and 20th were held at Dharwar, the 3rd was held at Surat, the 4th and the 5th were held simultaneously in 1925 at Ahmednagar, and the 7th, 8th, 9th, 11th, 12th, 14th, 16th, 18th, 22nd and 23rd conferences were held at Bombay. The 6th, 10th, 13th, 15th, 17th and 21st conferences were not held.

Thus it can be seen that 16 conferences were held in all, 10 at Bombay 2 at Poona, 2 at Dharwar, one at Surat and one (2 conferences simultaneously) at Ahmednagar in 1925.

4. Members of the Association. There are eight *Life Members* at present. They are Veterinary Surgeons Gokhale V.P., Kirtane V.T., Dharwadkar R.G., Pereira F., Ghatge H.N., Nair K.B., Chavan D.R. and Marathe Y.N.

Ordinary Members. There were 32 members in 1921, 40 in 1922, 24 in 1923, 50 in 1924, 33 in 1925, 16 in 1926, 16 in 1927, 18 in 1928, 26 in 1929, 25 in 1930, 36 in 1931, 94 in 1932, 103 in 1933, 101 in 1934, 137 in 1935, 137 in 1936, 140 in 1937, 132 in 1938, 123 in 1939, 120 in 1940, 111 in 1941, 109 in 1942 and 106 in 1943. During this year there are 148 members (as seen from the register).

Since 1921 to date there are 215 members in the register. A progress graph is attached herewith. (Not published due to scarcity of paper *Ed. I.V.J.*)

Note. The members of the Association may please note that though the progress made by the Association is slow it is encouraging to find that the membership is increasing gradually and has increased from 32 to 148 in about 24 years.

Bombay, }
24-8-1944. }

K. B. NAIR,
Hon'y. Secretary, B.V.M.A.

A. I. V. A. Association, Madras Branch, Madras**PANIKKAR MEMORIAL FUND**

List of Subscription from 1-5-1944 to 15-9-1944.

(Continued from page 290, May 1944 issue of I. V. J.)

		Rs.	A.	P.
Brought Forward	...	947	2	0
Sri R. Raghupathy Reddy	...	3	0	0
„ K. T. Kunhikumaran Nambiar	...	10	0	0
Total	...	960	2	0

Madras, }
15-9-44. }

V. GURUMURTHI,
Treasurer, A. I. V. A.,
Madras Branch.

Provincial News**CATTLE SHOWS IN BERAR DIVISION
DURING THE YEAR 1943-44**

Unlike most of the European countries which employ mechanical means supplemented by horse power for all agricultural operations, India is purely an Agricultural country and has entirely to depend upon bullock power for cultivation of land. Therefore, it is of paramount importance to preserve the cattle wealth of the Nation in general and in particular that of Berar, which abounds in some of the best breeds of cattle.

Cattle power is the mainstay of several walks of life, right from the cultivation of land down to the marketing centres. In the present period of War when the intense scarcity of food material is felt, the "grow more food campaign" requires increased employment of cattle power. Since most of the mechanical transport facilities have been deviated to the War effort, the need for the use of cattle power for transport facilities is keenly felt at present.

Necessity is the mother of invention. It is more opportune for us in India to take all necessary measures for the improvement of cattle and preserve this invaluable wealth of the Nation.

Since the cow is the potential source of cattle power as well as food nourishments, the economic welfare of the nation depends on safeguarding and improving the cows.

Therefore, for the practical introduction of the above principles District Livestock Improvement Associations were formed in all the four Districts of Berar, byelaws were framed and under the auspices of these Associations District Cattle Shows are being organised in each district and held annually, wherein other nation building and development departments such as Veterinary, Animal Husbandry (Dairy and Poultry Sections) Agriculture Co-operative, Village-up-lift, Textile, Industries, Red-cross, Public Health actively co-operated and had demonstration stalls of their own. These stalls enhanced the educative value of the show. War propagandists also availed of this occasion of doing their service to the nation and arranged for free cinema shows.

In the current year, Buldana and Akola District Shows were held at Khamgaon from 7th to 9th December '43 and at Akola from 17th to 19th December '43 respectively, in West Berar, and Yeotmal and Amraoti District Cattle Shows were held at Yeotmal from 11th to 13th February '44 and at Chandur from 26th to 28th February '44 respectively in East Berar. Besides these shows, a Taluk Show was arranged and held at Salbardi in Morsi Taluk on the 21st and 22nd February '44.

These shows proved a great success which was more than the expectation. The number of entries in each show was about 200 and the number of spectators consisting of men, women, and children drawn from all strata of society was more than 50,000 in each show. These large congregations are a clear index both of the interest of breeders and the success of the show which is now an unique one of its kind in Berar. Lectures on various subjects were delivered by experts of various departments in all the shows and loud-speakers had to be installed due to the large number of audience.

For all the breeds of cattle which are in Berar, there were different sections for each recognised breed viz., bull, bull-calves, cows, heifers, suckling calves, and bullocks. For Berari buffaloes which are famous for their milk yield, there were 4 sections viz. he-buffaloes, she-buffaloes, young-buffaloe-bulls, and buffaloe-heifers. In addition to these there were other livestock sections which were represented by horses, ponies, sheep goats, rams, ewes, and poultry. Prizes worth about Rs. 1000 in addition to a good number of rolling trophies and shields were awarded to the owners of the best exhibits. In each of these shows, for agricultural section a good number of prizes were also awarded to the best exhibits.

In order to increase the milking capacity and milk production of the cows and she-buffaloes a good number of prizes and rolling trophies were

awarded to the best exhibits undergoing the test in the milking competition.

For all the Government, donated and private bulls there were prizes and rolling trophies for the maintenance of service records in order to encourage the proper maintenance of correct data and statistics in the concentrated cattle breeding centres and tracts.

Championship rolling shields were also awarded for the Cattle, Agriculture and Poultry sections in all the four District Shows.

At Yeotmal, Chandur and Salbardi Shows, Gaolao breed, at Akola Rath breed and at Khamgaon the famous Khamgaon breed had their predominance. The noted indigenous Khamgaon breed of Berar is a set of hard and swift animals which are most suitable to agricultural conditions of Berar. But unfortunately this breed seems to be slowly dwindling and it is hoped that in the near future Government cattle breeding centres will be opened for propagating this breed in Berar.

With a view to prevent cruelty to animals, bullock-cart races (Shankarpats) were arranged in all these shows and the drivers of the carts were strictly forbidden using any kind of stick or tutari (spike attached to a stick). Prizes and rolling trophies were awarded for these races.

In addition to the non-recurrent expenditure of about Rs. 2000 the cost prices of rolling trophies, on an average about Rs. 3000 were also spent towards prizes, erection of pandal etc. for each of the four District Cattle Shows. Government contributed Rs. 250 for each of these District Shows and Rs. 200 for the Taluk Show.

A good number of philanthropic and other people interested in cattle breeding, donated some amount towards the prizes and rolling trophies and rest of the amount was collected from the public for this purpose.

The interest evinced by the Deputy Commissioners of the Districts who are also ex-officio presidents of the District Livestock Improvement Associations is remarkable and they wholeheartedly participated in conducting the shows and attended these functions. The enthusiasm shown by other officials and non-officials was none the less remarkable.

These shows, as already pointed out, go a long way in educating the public not only in the preservation and improvement of livestock but also in the eventualities of cultivation, "grow more food campaign" and other War efforts.

Finally, thanks are due from the Veterinary Department for the active co-operation and whole-hearted sympathy of officials and non-officials who extended their helping hand in making the shows a grand success and also to those who sent their exhibits from long distances.

All these activities are due to the keen interest taken by Mr. H. B. Shahi, M.Sc., M. R. C. V. S., D. T. V. M., Director of Veterinary Services, C. P., and Berar, Nagpur, who after joining this province infused the importance of Livestock Improvement in India in general and in C. P. and Berar in particular.

P. S. SUNDRAM, G.B.V.C.
Assistant Director of Veterinary Services,
Berar Division, Amraoti.

Announcement

EMERGENCY COMMISSIONS IN THE I. A. V. C.

A list giving the names of the Viceroy's Commissioned Officers who have been granted Emergency Commissions in the I. A. V. C. is given below. Regular V. A. Ss. of the I. A. V. C. some of whom have had considerable service as V. C. Os, are marked with an asterisk (*). The rest of the officers joined the I. A. V. C. from Civil Departments or the open market.

Those granted direct commissions are marked @. It will be seen that their number bears no comparison to the number granted commissions after joining the I.A.V.C. as V.C.Os. It is therefore apparent that the latter is really the easier method to secure emergency commission in the I. A. V. C. It will also be seen that graduates of all the Veterinary Colleges in India are represented among these newly commissioned officers and the rule regarding the grant of direct commission to 4-year course graduates from the Punjab and Madras Veterinary Colleges has not precluded the graduates of other colleges from being commissioned in large numbers.

NAME	Veterinary College	Date of Qualification	Date of Commission
2/Lt. *Nur Mohd Khan, Bahadur, O.B.I.	Punjab	1914	13-3-44
„ *Sher Ahmed Khan S.B. O.B.I.	do	1915	do
„ *Shamsher Singh, Sardar Bahadur, O.B.I.	do	1918	do
„ *Mohd Sharif, Sardar Bahadur, O.B.I.	do	1915	do
„ *Fazal Ali Khan, Sardar Bahadur, O.B.I.	do	1916	do
„ *Hukam Singh, Sardar Bahadur, O.B.I.	do	1916	do
„ *Mit Singh, Sardar Bahadur, O.B.I.	do	1917	do
„ *Shah Wali Khan, Bahadur, O.B.I.	do	1918	do

NAME	Veterinary College	Date of Qualification	Date of Commission
2/Lt. *Shakir Ali Khan, Sardar Bahadur, O.B.I.	Punjab	1912	do
„ *Faiz Ahmed Khan	do	1918	do
„ Mira Khan, Sardar Bahadur, O.B.I.	do	1918	do
„ Mohd Siddik Khan, Bahadur, O.B.I.	do	1918	do
„ Sardar Khan, Bahadur, O.B.I.	do	1919	do
„ *Mohd Aslam Khan Bahadur, O.B.I.	do	1918	do
„ *Bir Singh, Bahadur O.B.I.	do	1915	do
„ *Dilbar Khan	do	1922	do
„ *Ghulam Ahmed	do	1923	do
„ *Kartar Singh	do	1921	do
„ *Ghulam Nabi Shah	do	1918	do
„ *Fauja Singh	do	1919	do
„ *Tara Singh, Bahadur, O.B.I.	do	1926	do
„ *Mehtar Chand Narula, M.B.E. Bahadur O.B.I.	do	1923	do
„ *Hazura Singh.	do	1930	do
„ *Sundar Singh	do	1932	do
„ *Chattar Singh	do	1932	do
„ Abdul Ghaffar	do	1923	do
„ *Mit Singh Rai	do	1932	do
„ *Roshan Lal Bhatia	do	1932	do
„ *Mohd Jamshed Khan	do	1932	do
„ *Gurcharan Das	do	1932	do
„ *Sardari Lal Babbar	do	1931	do
„ *Bal Singh Sandhu	do	1931	do
„ *Bahadur Singh	do	1931	do
„ *Harnam Singh	do	1933	do
„ *Syed Zahur Mehdi	do	1933	do
„ *Ranbir Singh	do	1933	do
„ *Lachman Dass	do	1933	do
„ *Kirpal Singh Katari	do	1933	do
„ *Mehtar Singh Sandhu	do	1933	do
„ Mohd Sharif Ahmed	do	1922	do
„ Purakulam Mathow Kuruvilla	Madras	?	do
„ M. Muthugopal	do	1929	do
„ C. Kishna Subbu Singh	do	1931	do
„ *Padmanabha Bala Krishna Pillai	Bengal	1934	do
„ *Bangalore Adavappa	Punjab	1933	do
„ Abdul Ghani	do	1933	do
„ Atwar Singh	do	1934	do
„ Dattatrya Jayaram Gupte	Bombay	1932	do
„ *Abdul Shakoor Khan	Bengal	1934	do

NAME	Veterinary College	Date of Qualification	Date of Commission
2/Lt. Shripad Gangadhar Dixit	Bombay	1935	do
„ Gian Chand Sharma	Punjab	1935	do
„ *Thanu Ram Pillai	Bengal	1933	do
„ *Shanti Kumar Sharma	do	1935	do
„ *Shanti Parkash Dutta	do	1936	do
„ *Ablode Nagaraja Rao	do	1935	do
„ *Harsaran Swami	do	1936	do
„ *Rabindra Nath Ganguli	do	1936	do
„ *Lakshmi Parsad	Bihar	1935	do
„ *Annath Sankaran Nair	Bengal	1936	do
„ *Mavatur Venkatagiri Gundu Rao	do	1937	do
„ *Balwant Singh Matharu	Bihar	1938	do
„ *Ganesh Dass Khurana	Bengal	1938	do
„ *Gurdil Singh Sangha	Bihar	1938	do
„ *Parkash Nath Sharma	do	1938	do
„ *Sujawal Khan	do	1938	do
„ *Daljit Chand Kapila	do	1938	do
„ *Iftikhar Ahmed	do	1939	do
„ *Mohd Abbul Razaq	Bengal	1939	do
„ *Mirza Abdul Khaliq	do	1939	do
„ *Manzur Alam	do	1939	do
„ Haq Nawaz Khan	Bihar	1938	do
„ Edmund Haynes David	Bengal	1940	do
„ Bagalore Narayana Swamy	Bombay	1933	do
„ Bikramajit Singh	Bengal	1940	do
„ Achmantha Iyer, Ramamurti	Madras	1936	do
„ Kathiravaloo Subramanian	Bengal	1939	do
„ Manawar Syed Habibullah	Madras	1935	do
„ Monoranjan Sircar	Bengal	1937	do
„ Sachchida Nand Sharam	Bihar	1940	do
„ C. T. Ramaswami	Madras	1935	do
„ Kartar Singh	Punjab	1934	do
„ Reginton De Sylva	Bengal	1940	do
„ Mohd Sadiq	Punjab	1939	do
„ Bashir Mohd	do	1939	do
„ Mohindar Singh	do	1939	do
„ Mohamed Sharifkhan	Bengal	1943	do
„ Palupillai Subramanian	Madras	1935	do
„ H. N. D. Iyengar	do	?	do
„ Mahmood Hassan	Bengal	1937	do
„ Ratan Singh Dyal	Punjab	1941	do
„ G. W. Karandikar	Bombay	1941	do
„ Qazi Maqbul-ur-Rahman	Punjab	1942	do

	NAME	Veterinary College	Date of Qualification	Date of Commission
2/Lt.	Venkate Narayana Sarma	Madras	1930	do
"	P. N. P. Nayar	do	1939	do
"	V. S. Sundaram	do	1938	do
"	Joseph John Palepu	Bengal	1937	do
"	Pushpala Soundrarajalu	Madras	1939	do
"	Novavinakere Gundu Iyengar	Bombay	1930	do
"	Mohd. Shafi	Punjab	1942	do
"	Nirmal Chandra Roy	Bengal	1942	do
"	Karam Singh	Punjab	1941	do
"	Amar Nath	do	1942	do
"	Sheikh Khalil-ur-Rahman	do	1942	do
"	Indu Bhushan Mazumder	Bengal	1940	do
"	Ganti Ayyavaru Sastry	Madras	1940	do
"	Iqbal Nath	Punjab	1942	do
"	Inder Sen Malhotra	do	1942	do
"	Dattatrya Trimbak Parnaik	Bombay	1937	do
"	Jagdish Ram Sood	Punjab	1942	do
"	M. K. Havaladar	Bombay	1942	do
"	P. C. C. Ratnatunga	Bengal	1940	do
"	Joseph Topno	Bihar	1934	do
"	Debahrata Charterji	Bengal	1936	do
"	Sheikh Rifat Ali	Punjab	1937	do
"	Chandgi Ram	do	1942	do
"	Ajit Singh	do	1942	do
"	M. S. Jayaraman	Madras	1939	do
"	Mahmud Ahmed Siddiqi	Bombay	1940	do
"	Hamendri Lal Roy	Bengal	1942	do
"	Harikishen Hooda	Punjab	1942	do
"	Karan Singh	do	1942	do
"	Tej Singh	do	1942	do
"	Pandit Satyendra Rao	Madras	1939	do
"	S. K. Balakrishnan	do	1933	do
"	Mohd. Yakub Khan	Punjab	1941	do
"	Kashiwar Bhattachariya	Bengal	1938	do
"	Dalel Singh	Punjab	1941	do
"	Mohd. Abdul Basit	Punjab	1940	do
"	P. M. Jhanak	Madras	1932	do
"	Amal Kanti Sen Gupta	Bengal	1942	do
"	Anaut Sarup Thapar	Punjab	1941	do
"	D. C. Nag	do	1941	do
"	Vasant Malhar Kotbagi	Bengal	1942	do
"	Maharaj Singh Thakur	Punjab	1943	do
"	Diwan Singh	do	1943	do

	NAME	Veterinary College	Date of Qualification	Date of Commission
2/Lt.	Krishan Kumar	Punjab	1942	do
@Lt.	B. D. Khan	do	1942	14-11-43
"	2/Lt. Ch. Mohd. Afzal	do	1941	14-3-44
"	" J. Z. Ahmed	do	1943	do
"	" H. S. Bawa	do	1942	do
"	" Romesh Chander	do		do
"	" M. A. Chaudhry	do	1943	do
"	" Imtiaz-ul-Haq	do	1932	do
"	" J. N. Johar	do	1935	do
"	" K. S. Manaise	do	1941	do
"	" G. S. Grewal	do	1940	do
"	" A. D. A. Hasan	do	1930	do
2/Lt.	@V. P. Malhotra	do	1930	14-3-44
"	" M. L. Mehra	do	1932	do
"	" Najam-ud-Din	do	1943	do
"	" N. A. Sultan	do	1938	do
"	" S. S. Gahlaut	do	1930	do
"	" Z. K. Shinwari	do	1941	do
"	" Abdus Salam	do	1943	do
"	" M. L. Talwar	do	1935	do
"	" V. S. Thapar	do	1939	do
"	" S. C. S. Tulsi	do	1942	do
"	" Ch. Inayat Ullah	do	1943	do
"	" W. H. Deane	do	1941	do
"	" C. K. Rao	Madras	1943	14-4-44
"	" K. P. Damodaran Nair	do	1943	do
"	" Nahar Singh Grewal	Punjab	1931	do
"	" M. N. Menon	Madras	1943	do
"	" S. B. Vasudeva Rao	Punjab	1931	16-4-44
"	" A. B. Belliappa	Madras	1942	17-4-44
"	" Gopal Singh	Punjab	1938	19-4-44
"	" Mumtaz Ahmed	do	1943	4-5-44
"	" Inderjit Singh	do	1943	4-5-44
"	" Ranjit Singh Sidhoo	do	1942	13-5-44
"	" Raj Eal Vig.	do	1940	14-6-44
"	" Syed Mohd Naqi Haider	do	1942	14-6-44
"	" Malik Abdur Rahman	do	1930	15-6-44
"	" S. Sankaran Kutty	Madras	1943	20-6-44
"	" Syed Rafiq Ahmed	Punjab	1942	3-7-44

General Headquarters, India, }
 Quartermaster General's Branch, }
 Simla, the 12th September 1944. }

Yours faithfully,

.....Major,
 for D.V.S. in India.

Correspondence

The views expressed in letters addressed to the Editor represent the personal views of the writer only and must not be taken as expressing the opinion or having received the approval of the A.I.V.A.

To
Bihar Civil Veterinary Department
Sir,

I have thoroughly gone through the memorial of the Veterinary Assistant Surgeons of Central Provinces submitted to His Excellency the Governor of Central Provinces and published in your *journal* of January 1944. In this connection, I beg to say that you will be astonished to hear the plight of the Veterinary Assistant Surgeons of Bihar still more miserable than that of the vets in Central Provinces and other Provinces. The present scale of pay of the Veterinary Assistant Surgeons in this Province is Rs. 50-5/4-65-5/3-70. Senior Grade 12% on Rs. 100/- and Senior Grade II 10% on Rs. 85/-. The allowance of Rs. 10/- per month is admissible to the Touring Veterinary Assistant Surgeons only. There are 13 posts of Inspectors whose scale of pay is for third grade Rs. 100/-, 2nd Grade Rs. 135/- and 1st Grade Rs. 170/-. There is only one post in Class II Service of Assistant Director which is filled by promotion from the lower rank. The present rate of T.A., is Re. 1/- per day which should not exceed Rs. 25/- per month. There is no other prospect in this Department and no other channel for promotion and absolutely no income by private practice.

You will be still more surprised to hear that a Veterinary Assistant Surgeon has to appear at an open professional examination to get the first two increments of Rs. 5/- at the end of 4th and 8th year of their services and unless he passes out in all the subjects his increment is stopped and he will have to go on appearing at the end of every six months. Is it not surprising that for a scientific Department the pay should be Rs. 50/- and increment Rs. 5/- in four years and that too after passing so many examinations? I can dare say that a clerk of the Burial office is far more better than the Veterinary Assistant Surgeons of Bihar.

You know that this province is proud of having a Veterinary College of its own, but it is simply pity to see that the outcome of Bihari students is so less that the Department is running short by many hands for the past few years. Even those few Bihari students who join the college and pass out seek some other better and lucrative posts in other Provinces. What do all these mean? It clearly shows that the pay and promotion of the Department is not lucrative enough to attract the people of the Province.

I therefore request you to be kind enough to ventilate these points through your esteemed *journal* and request the Government of Bihar and the Director of Veterinary Services to see that their assistants who are the pillars of the Department well fed and well dressed and thereby keep the prestige and position of the Department by maintaining their own decency. It is therefore, high time that the Government should revise the present scale of pay and allowance and it should be raised to the scale as demanded by the memorialists of the Veterinary Department of Central Provinces, e.g., the pay should be Rs. 75-5-150 and 20% of the posts be converted into the selection grade of Rs. 160-10-200.

The post of the Inspectors be converted into Class 11 Service with scale of Rs. 200/- to Rs. 500/- and these posts should be filled by promotion from the lower rank.

50% of the class 1 service be filled by promotion from the lower rank.

The travelling allowance should be raised from Re. 1/- per day to Rs. 2/- per day.

The Departmental examinations for increment should be abolished henceforth.

Yours faithfully,

"One Interested".

September 4, 1944.

In the Realm of Indigenous Veterinary Medicine

Sir,

In your *issue* of July (Vol. XXI, No. 1) Mr. Krishnaswamy has written a nice article on the subject of the value of indigenous veterinary medicines and it is more praiseworthy when he invites criticism on it. The object of inviting criticism is to feel the pulse of the public and to acquire more views on the subject. His article is not only attractive but impressive also. He has put it in the best possible manner having touched all the points without omitting the slightest reference to the subject. The article gives a lot of information from both ancient and modern veterinary literature and to collect such vast information requires indefatigable energy and enthusiasm which speaks for the quality of the author. The veterinary profession shall certainly feel proud of such a man. He has manifested to the readers of this *journal* that if veterinary surgeons are given chances they will prove themselves efficient guardians of world's livestock. His ideas are good and convincing and stimulate the thoughts of the readers and create enthusiasm in them about the future progress of veterinary profession; but unfortunately taking into consideration the present condition in India it is not possible economically to translate the manuscript into the various languages and to create awakening and sympathy in the minds of the public and start

research work in the indigenous medicines. Probably if it were so, Lord Linlithgow would not have disregarded the idea of establishing one more department to carry on the research work in the indigenous medicines, when he opened the Nutrition Branch in I. V. R. I. at Izatnagar. The object of Nutrition department is clear, that is, to keep the animal fit and healthy and thus increase the vitality to combat disease. Lack of nutrition is invariably the cause of most of the diseases. Proper nutrition, with attention to hygienic conditions and immediate segregation will always help the agriculturist much more in safeguarding his animals than indigenous medicines. The Veterinary profession is considered as sister profession to the medical, but actually it is taken as part and parcel of agriculture and veterinarians are invariably associated with agriculturists. Epizootics take more toll of the cattle than the sporadic diseases and hence "prevention is better than cure" is the watchword in the veterinary department. Taking into consideration the longevity, necessity and utility of the animals the veterinarians are expected to prevent the disease rather than cure it. A few persons have written books on the use of the indigenous medicines and it is doubtful whether they have recovered the printing charges from the sale of these copies. Some institutions in Bombay and elsewhere had undertaken the work but nothing progressive was heard about it later on. In Bombay the Municipality has appointed medical men to advise the public on the quantity and quality of food and how to take the same in order to remain fit. In short, paying more attention to nutrition than to drugging will help human beings as well as the animals. The Government is generous, and money may come forth to start any new scheme but one should know, whether it is worthwhile to spend it after the research of indigenous medicines, when problems such as breeding, dairy farming and prevention of diseases are yet to be solved. The manufacture of biological products as efficacious as those imported from the foreign countries is more worthwhile than the research work in the indigenous medicines and to begin translating the old literature and manuscript in various languages and distributing the same among the public. One should know at present that the world is advancing and we have to keep pace with it. The theory of immunity can be applied to drugs which make the animals drug-fast. Economically, in my opinion, to start a research work in the indigenous medicines in these days is illadvisable and unbeneficial to the ryots. Hence it is better to conduct investigations in the already established lines than to start a new scheme and make investigations on it. It is mere waste of money and energy, which could be utilised elsewhere with greater benefit.

Parel, Bombay, }
16—8—44. }

D. B. KHOLE,
Lecturer, B. V. C.

National Universities and Veterinary Graduates

Sir,

Please allow me to ventilate the grievances on behalf of the professional interest and in the name of justice in your esteemed *journal*.

How unfortunate it is that the very National Universities are closing doors on the poor Veterinary Graduates who have a mind to study further for the degree course, recently introduced in the Universities of the country. The Universities of Madras and Punjab who have taken lead and opened degree classes refuse flatly to recognise the Diploma awarded from other institutions of our country. Even the Royal College of Great Britain once refused to give concession to Indian Graduates in admission, but here are our national Universities who do not care two pence for the labour of 3 long years put up by the boys in the Veterinary Colleges of our country and only place them in the category of raw ones admitted in the University colleges, thereby putting them to task for 5 years more in order to obtain the degree. It is very undesirable for the University Colleges on their part to thus kill the ambition of the Veterinary Graduates and I would request the authorities concerned on behalf of those who desire an uplift of profession and science, to exert their maximum, to get a suitable course prescribed for the veterinary graduates to obtain degree or allow them to be admitted in the 3rd year of the degree course.

Yours Sincerely,

O. S. BHATNAGAR, B.Sc., G.B.V.C.,

Meerut.

Post Graduate or Refresher's Course.

Sir,

Introduction. Post Graduate course which was started some years back by I. V. R. I. authorities for the benefit of Veterinary Graduates has been maintained by the successive Directors throughout and at present it is aptly fitted and vastly expanded for the benefit of Veterinary subordinate and provincial services. This course runs at two places, namely, Izatnagar, Dist. Bareilly and Mukteswar, Kumaon, for 1½ months at each place. It begins in the month of March and ends exactly after 3 months. It is attended by the selected candidates from all provinces and States in India number not exceeding 20. From time to time changes have been made in the curriculum. At present the course comprises of upto date veterinary information regarding the profession and refreshes the knowledge of veterinary graduates and the credit goes to the Director and his staff, which consists of highly qualified and talented persons and every body takes interest in the students. The office staff and personal assistants at both places are very courteous to the students and help them in their correspondence to the respective provinces and States in various subjects.

Boarding and Lodging. A building is selected in the new improvement area at Bareilly as a hostel and attempts are made to give every sort of comfort to the students. As for boarding every student is supposed to make his arrangements. At Mukteswar lodging is available as there are many Government buildings and the students can be easily accommodated. Moreover, since shifting of some departments to Izatnagar, many quarters have fallen vacant. The boarding arrangement at Mukteswar is done by students privately.

Education. During the course many important subjects are taught, namely, Pathology, Bacteriology, Helminthology, Protozoology, Entomology, Serology, Immunology, Epidemiology and Statistics. Besides, lectures are given on Rabies, Tuberculosis, John's disease, Foot and Mouth, Rinderpest and the effects of Flourine. So also lectures on animal nutrition and famine are given with the help of epidioscope. Lectures on importance of vitamins in animals are also given. Opportunities are not lost if any eminent visitor visits the institution and is requested to give a lecture. This year Dr. Mookerji from Calcutta has given lectures on Chemo therapy and Pharmacology. On every Wednesday students are required to give lecture on a selected subject, turn by turn, and this system makes the students bold, and gives a good lot of information about the profession. Full discussion takes place among the staff and students and it becomes more interesting when several students exchange their observations and express their experiences by which both the parties are benefitted. The lectures take place under the presidency of Director or Dy. Director. The class officers are responsible to make all sorts of arrangements at both places. Students are also taught practical things in each and every subject. Great attention is paid to P. M. on experimental animals and chances are given to visit the dairy, poultry farm, serum and goat virus production departments. Lectures are also arranged on poultry diseases and management and also T. B. and Malliein tests, are shown to the students. Sepcial lectures were delivered on mastitis and anthrax by the Director. In the disease of mastitis, the Director has taken much interest and showed various methods of tests. Libraries at both places are well-equipped and are open to students during office time and students are permitted to take the books for references. Newspapers are being kept in libraries for general and uptodate information.

Recreation. Most of the games are available and admission in the clubs at both places is open to the students. Students take much more advantage at Mukteswar of the games and clubs than at Izatnagar because at the former place nothing else is available for amusement while at Izatnagar all sorts of amenities and pictures are within reach. At Mukteswar two students distinguished themselves in the game of tennis when the sports were held, while others took part in other games. At Mukteswar and

Izatnagar staff and students mix freely in the clubs. This year no parties were held due to scarcity of food materials but group photo as usual was taken at Mukteswar after the conclusion of the course, and the same was published in the *Indian Veterinary Journal*.

I would like to request all my fellow brothers to go and see the places and undergo a P. G. course of this kind either at Govt., State cost or at their own expenses, as this institution is the only veterinary institution in India or even in the whole world. In my opinion the associated course of two years is very lengthy and expensive and is practically beyond the scope of veterinary graduates. It is very commendable on the part of Director to run the three courses in a year and simultaneously carry on and supervise the research work done at both places.

Parel, Bombay }
26-7-44 }

D. B. KHOLE
Lecturer, Bombay Veterinary College.

Re-organisation of Sind Veterinary Department.

Sir,

It is very gratifying to observe that Sind Government have recently revised the scales of pay of Veterinary Inspectors from Rs. 150-10-200 to Rs. 180-10-230 and Veterinary Assistant Surgeons from Rs. 50-4-90-5-125 to Rs. 80-5-175 and Veterinary Field Compounders from Rs. 25-1-2-35 to Rs. 30-1-50 respectively. Apart from this, one more post of Veterinary Inspector and 8 posts of Veterinary Field Compounders have also been added to the sanctioned cadre. The Government have also approved the scheme for appointment of Assistant Investigation Officer for Poultry and the final approval of the Imperial Council of Agricultural Research on 50:50 basis is being awaited.

The stipend has also been increased from Rs. 25/- to Rs. 40/- per student to prosecute veterinary studies at Bombay Veterinary College.

There are other important schemes viz. creation of additional Gazetted posts for organising the District work and re-organisation of Provincial Laboratory having the sympathetic consideration of Honourable Dr. Hemandas R. Wadhvani, the Minister in charge of Veterinary Portfolio, who is taking very keen interest in the activities of the Department and was solely responsible for all the above-mentioned revisions. These revised scales will naturally give an impetus to recruitment in this Nation Building Department, whose increased activities are bound to help in the wellbeing of enormous cattle wealth of the Province and immense benefit to stock owners who are chiefly cultivators residing in rural areas who were not receiving at present sufficient aid owing to want of adequate staff in the Department.

Sardar Bachan Singh, M. R. C. V. S., the Director of Veterinary Services, Sind, was responsible for taking up this question of re-organisation of this department in time and has thus saved the department which was fast dwindling. I hope he will urge on the Association's demands of improving future prospects of the staff which are still much below the level of other Services in this Province so as to attract new entrants.

Karachi, }
19-7-1944 }

S. A. GULRAJANI,
Vice-President,
Sind Subordinate Veterinary Service Association.

Importance of a Veterinarian in India

Sir,

All of us know that a veterinarian is considerably looked down upon. Probably he is ignored everywhere. So let us discuss what importance a veterinarian in India has? Can he be afforded to be ignored? What are the aims of a veterinarian? Is it really disgraceful to join a profession like his? Can he do anything useful for his motherland? I will be discussing things like these here.

Before I begin, I may submit that I would not be going into the details, but will give only a bare outline of the subject.

The value and importance of a veterinarian can at once be judged when we know that the 2/3 income of India is derived from the animals. So in a way the veterinarians contribute to the 2/3 income of the country. Let us see of what type and how efficient these animals are that contribute so much to the income of our motherland. It has been estimated by the experts that 170 crores of rupees are wasted annually for the upkeep of useless livestock. This sum is four times the total revenue of British India. Veterinarians only can improve these animals and thus can, not only save this enormous sum annually but in addition will add many times more by turning these useless creatures into workable ones. So we see that a veterinarian can add immensely to the national income of his country.

Ours is an Agricultural country. Agriculture and livestock go hand in hand. They are complementary. Each one is indispensable to the other. The efficiency of the one predisposes the hay day of the other. To promote agriculture an efficient labour power is essential. The chief agency that supplies this motor power is the ox. As a matter of fact, if we take away livestock there is no agriculture. So we find that veterinarians form the back bone to the agriculture of India.

Milk, nature's best gift on earth, a complete and thoroughly wholesome food both for children and adults, containing all the essential nutritive

constituents of a complete diet in a most suitable proportion and nearest to a perfect food than any other food compared, is a product of the animals of whom the veterinarians are the experts and their improvement lies in their hands.

Physiologists and medical authorities all the world over recognise milk, to be an indispensable food for children and invalids for which there is no other substitute. Children consuming more quantities of milk grow better and look far more healthier as compared to those who get small quantities or do not get at all.

It is extremely sad to learn that the average milk yield of our cow is less than one seer, while it is nine seers in the case of cows of Denmark. It is shocking to know that the quantity of milk that we draw from 18 crores of animals is drawn from 2½ crores in Germany, 3½ crores in U. S. A. 7½ crores in Great Britain and 7 crores in Russia.

Denmark started to improve their cattle when the average milk yield of their cow was not better than the average milk yield of milch cow in India today. Yet in less than fifty years the average yield of butter fat per cow has been raised from 88 lbs to 359 lbs per annum i.e. more than four times. Similarly marked increases have been effected in other countries. There is no reason to believe as to why our cow should not be able to yield as much milk as the cows of other countries.

In spite of the fact that India has 1/3 of the cattle of the world the average milk consumption per head of population is only 7 ounces, while it is 30 ounces in France, 35 in U. S. A., 39 in Great Britain, 43 in Norway and 56 in New Zealand. It is lowest in India as compared to all the other countries of the world.

There seems to be some definite relation between milk consumption per head of population and that of the average age of a human being. The average age of an Indian with so low a milk consumption is 27 years while that of a New Zealander with milk consumption of 56 ounces is about 70 years. This is more strikingly shown in the attached graph (not published due to scarcity of paper. *Ed. I.V.J.*)

The infant mortality occurring in India is probably the highest. Similar relation as in the case of milk consumption and average age, seems to exist here too. Again we see it is a veterinarian only who can help these fellow beings to grow more healthier with better brains, prove better citizens, and prolong their age.

The Indian sheep are of bad quality and their average live weight would be hardly about sixty lbs. Their average wool yield is about 2 lbs. which is so low. But the sheep of European countries are excellent ones,

average live weight is about three times the average weight of an Indian sheep and their wool yield about three times more. India has 6% of the total number of sheep of the world but it produces only 2% of the total wool of the world, which is three times less as compared to the number of sheep it has.* Again these the veterinarians only, who by turning the sheep into as good as those of other advanced countries, will supply woollen clothes and thus shelter against chill for millions of their country men who at present have to spend their winter nights by fire side and will supply them more meat as well.

Our goats and poultry need marked improvement. They seem to be rather more back-ward as compared to our other livestock. By improving these we the veterinarians will be able to make milk and eggs within the reach of every body.

Let us now proceed to consider the losses that we have to meet due to some of the major contagious diseases of the animals.

There are three main contagious diseases that generally occur as epidemics. These are Rinderpest, H. S. and Foot and mouth. These cause immense losses to India. The deaths recorded in 1926-27 due to Rinderpest were 202.2 thousands, H.S. 36.4 thousands, and Foot and Mouth 13.6 thousands. As a matter of fact these figures are far less as to reveal the true state of affairs. This is clearly shown by the examination of the figures from Burma, in a part of which the notification of deaths from cattle diseases was made compulsory. There it was found that if these figures were believed to be correct then the calculated average age of an animal would come to 54 years which is nothing but absurd. The average age of cattle is probably 6 years which is nine times less than the average age calculated in Burma. So roughly we can say that actual deaths are nine times more than those reported. Perhaps still heavier losses are sustained by the cultivator indirectly; as in case of Foot and Mouth for one animal that dies 99 may be temporarily incapacitated and also there is loss due to imperfect cultivation and decrease in milk too. There are also other numerous known and unknown parasitic and protozoan diseases the losses due to which also are fairly heavy. The loss due to warble-fly infestation has been estimated even on a conservative estimate to be 1½ crores of rupees annually. These diseases have been practically stamped out in European countries and there the losses due to these amount to a negligible quantity compared to the losses in India. There is no reason to believe that we should not be able to accomplish what others have. Thus we see that it is a veterinarian only who can save the country of the tremendous loss by eradicating diseases etc.

There are a number of diseases like T. B., Rabies, Anthrax, undulant fever, Actinomycosis, Foot and Mouth etc, etc, that are communicable

from animals to man. Still there are the so called milk born diseases such as Cholera, Diphtheria Typhoid, Scarlet fever, septic sore throat that may be transmitted through the agency of milk from one individual to another. Thus the veterinarians by eradicating such diseases in animals and supplying scrupulously clean milk will reduce the incidence of these in human beings too.

I think it will suffice to convince any impartial judge the great importance of veterinarians in India. As a matter of fact the key to the prosperity of India lies in the hands of the veterinarians. They are the sovereigns of India in the true sense of the word. The veterinary profession is economically the most productive and Veterinary science an illuminating one. Really speaking veterinarians are the pride of India.

Yet we see that the veterinarians are ignored everywhere. No due regard is paid to them. They are looked down upon by the majority of the people. This is all due to the ignorance of the public who do not understand their worth. But this should not disappoint us in any way. It is our fault too, to some extent, that we have not been able to convince them of our importance. Again I should say that the best men on earth were never respected during their life time. Holy Christ was crucified, Joan of Arc the savior of France was burned alive by the French themselves, Socrates the biggest philosopher ever born on the face of this earth was poisoned. So if we the veterinarians are not duly respected even then we should not mind. We are out for a pious work. We should work with spirit of a benefactor as we now do. His Excellency Lord Linlithgow realised it very well that veterinarians are the real people who can uplift India which is so clear from his speech delivered in 1936. His Excellency said:—

"It is rather strange that even some veterinarians think that theirs is an odd job. They think themselves to be unfortunate ones to join this profession. Such are the ignorant persons who do not know what they are. We need intelligent persons with self sacrificing spirit. We are to uplift our country. There is nothing that should make us to suffer from inferiority complex, but there is good deal due to which we may feel ourselves superior to others."

I think what I have said will shatter the illusions of those who think veterinary profession to be a disagreeable one.

We see that our aims and ambitions are so high. Our profession is economically the most productive and science an illuminating one. Then why is it that we are not properly paid by the government? The one reason for this is that we happen to be quiet workers and are back in beating our drum too. When we contribute immensely to the national

income of motherland then who on earth can deprive us of our due share. The day is apt to come when veterinarians will dominate all others in India.

G. KARNAIL SINGH L.V.P.,
Government Cattle Farm, Hissar.

Extracts

AUGMENTING MILK SUPPLY TO CITY

ADEQUATE OIL CAKE STOCKS ENSURED

Madras, 26-8-1944.

The Government of Madras have passed orders on the report of the Special Officer who recently investigated into the milk problem of Madras City. They have generally accepted the suggestions made by him for increasing the milk supply.

The Special Officer attached considerable importance to the need for making available adequate cattle feed in the City at economic prices. He attributed the present low yield to want of proper feeding and he considered that it was practicable to increase the yield of milch cows by 50 per cent by proper feeding and management.

The Board of Revenue, who expressed their views on the report, proposed to allot 4,000 tons of gingelly seed to Madras City out of the quota of import expected from Hyderabad. This quantity is mentioned to be sufficient to produce about 3,000 tons of cake. The Board also have asked the Collectors of Trichinopoly, Salem, Vizagapatam and West Godavari, for particulars regarding the quantity of gingelly cake that could be spared from their respective districts to Madras City. Further, they have requested the Regional Controller of Railway Priorities for assistance in moving gingelly seed or cake from Vizagapatam to West Godavari.

In view of the shortage of gingelly oil cake in the Province, the Government have accepted the Board's recommendations and approved their proposal that the import and distribution of gingelly seeds and cake should be entrusted solely to the Triplicane Urban Co-operative Society.

COTTON SEEDS TO BE RELEASED FOR IMMEDIATE USE

The Government have asked the Board of Revenue to report in consultation with the Director of Agriculture whether ground-nut oil cake might be used as a substitute for gingelly oil cake. The Board have asked the Director of Agriculture to divert 500 tons of cotton seed for immediate use in the City.

Another point raised in the Special Officer's report was that the rice bran now obtainable in the City was so much mixed with husk that cow-owners hesitated to use it as husk was very injurious to cattle health. The Government, in

their Order, state that it should be possible to devise a simple process for the separation of husk from the bran, and that at a time like this, the Province could ill-afford to throw away such a valuable cattle feed. The Government have asked the Board of Revenue to consult the Directors of Agriculture and the Veterinary Services and report on the matter.

SUPPLY OF THE PADDY STRAW

The Special Officer again in his report pointed out that military demands had materially reduced the straw available in Chingleput district, from which Madras City drew its supply and suggested that the Army should be asked to get their requirements from East and West Godavari districts. The Board of Revenue expressed their opinion that it was hardly reasonable to ask the Army to import such a bulky commodity as straw from such a distant place as Godavari. They have asked the collectors of North Arcot and Nellore, if straw could be spared from these areas to Madras City. The Government consider that the possibility of getting straw from South Arcot should also be examined and have asked the Board to submit a full report on the arrangements necessary to ensure adequate quantities of straw for Madras.

MILK SUPPLY SOCIETIES TO BE INCREASED

The Government have turned down the suggestion of the Special Officer for the appointment of a special Purchase Officer on the analogy of Grains Purchase Officer, for procurement of animals from within the Province and outside. They have however, accepted his suggestion for increasing the number of milk supply societies and encouraging the opening of private dairy farms. The Government have asked the Director of Veterinary Services to submit a report on the nature of the assistance that might appropriately be given to private persons to establish dairies.

The Government conclude their Order by stating that until the supply position materially improves they consider it premature to introduce measures such as licensing milkmen indicated by the Special Officer for controlling milk distribution.

"Hindu", 27-8-44

SALVAGE OF DRY COWS IN THE CITY

Madras, Sept. 6.

The Madras Co-operative Society for the Salvage of Dry Cows, Limited Madras, organised on the basis of a scheme approved by the Government was inaugurated on Monday last at a meeting held at the Bodyguard Lines branch of the Madras Co-operative Milk Supply Union. Rao Bahadur J. C. Ryan, addressing the meeting explained that the object of the society was to help cow-owners during the non-lactation period of their animals. The cows, when they became dry would be taken to kancha No. 40 of Kambakkam village in Ponneri taluk, and they would be returned to the owners soon after their calving. The monthly fee per cow would be Rs. 5 only.

"Hindu" 6-9-44.

IMPROVEMENT OF LIVESTOCK

Sir,

That Ongole cows should be valued for their milk producing qualities in Buenos Aires is the greatest tribute that could be paid to Indian breeds in general and to S. Indian breeds in particular. Such world-wide repute was never expected for of them by the original livestock specialists, who had approached the subject with the restricted ambition of increasing their number and improving their breed on a local basis. Later the Ongole breed was recognised to be as much milk-yielding as the Sindhi and the subject was dealt with as a matter of All-India importance. The Imperial Council of Agricultural Research has been interested only in the improvement of breeds that would benefit the whole of India and has rejected claims for investigation of breeds which flourish in particular areas like districts or within a district and which hold out promises of becoming more efficient both in milk-yield and work on the fields.

In this connection, it is significant to recall the remarks of the ex-Viceroy, in his farewell speech to the annual meeting of the All-India Cattle-Show Society, last year, in New Delhi, when he expressed his keen desire that the Agricultural Research Council should investigate the possibilities of finding a dual purpose animal, by which he meant "a cow that would yield enough milk for himself and his family of the poorest cultivator, in the remotest corner of district, while at the same time producing sturdy plough-bulls for his agricultural operations". Viewed in the light of His Excellency's suggestion, the need for extending research and investigation to encouragement of local breeds on the part of the Imperial Council of Agricultural Research sounds reasonable and urgent. One such local breed called the Omblachery breed of cattle in Tanjore District possesses all the qualities of a dual purpose animal. The plough bull of this variety is peculiar to Tanjore District and is strong, healthy, hard working on the fields and of medium size. Its cost of maintenance is comparatively low, while the cow of the breed would yield sufficient milk to meet the demands of the ordinary cultivating ryot and his family.

Applications for financial assistance from the Imperial Council for opening a large-scale breeding station have been returned with the endorsement that they could not help schemes of local importance. In view of the urgent necessity for improving and increasing the variety and numbers of our country's livestock, such an attitude is un-understandable. It is earnestly to be hoped that the I. C. A. R. will revise its narrow views urgently and extend its helping hand to newer finds of breed of local importance, like the Omblachery breed in Tanjore District and augment the livestock wealth of the country.

R. SESHAYYA.

Secretary,

Omblachery Co-operative Breeding Farm and Society,
Madura.

"Hindu" 6-9-44

PRESERVATION OF LIVESTOCK

CIRCULAR TO PROVINCIAL GOVERNMENTS

New Delhi, Sept. 9.

"In view of the enhancement of prices prevailing to-day and in the face of his own pressing need for work-bullocks the cultivator is probably more willing to receive advice and more ready to act upon it than he has ever been in the past," says a circular issued by the Government of India to all Provincial Governments and local administrations.

The circular contains suggestions made by the Animal Husbandry Commissioner on steps necessary to conserve livestock and to increase the production of good breeding stock. "If only animals over ten years of age are killed, it is most improbable that any useful bullock or breeding cow will be sacrificed," says the Commissioner.

The custom of slaughtering cattle while in poor condition is wasteful; provided the animals are healthy, even old cattle can be brought up to slaughter condition within the course of some three months if they are stall-fed. The purchase and fattening for slaughter of what are recognised to be otherwise useless cattle should be organised wherever circumstances permit. The use of dry cows for draught work should be encouraged.

To cope with contagious diseases among work-animals, more stockmen should be trained to supplement the present shortage of veterinary surgeons. Many cultivators other than regular breeders, are again turning their attention to the rearing of their own bullocks. In place of whole milk (which is in short supply) for calves, skim milk and other milk derivatives and calf meals are suggested. The importance of feeding roughage and silage of good quality to young stock should be made more widely known. Demonstrations of silage making and feeding should be arranged.

For cows in calf, silage or good hay is suggested but failing that, either in quantity or quality, a small supplement of a well-balanced, mineral-enriched cheap concentrate will meet the requirements.

Schemes should be promoted such as the one under consideration by the Madras Government in which it is proposed that male stock below one year of age should be bought by Government and reared in forest tracts, which are inaccessible to other cattle and where grazing is plentiful until they are fit for work.

Finally the Government of India have asked for a report, by December 31, 1944 on action taken by the livestock departments in the provinces on each of these recommendations.

"Hindu" 12-9-44

MILK SUPPLY IN URBAN AREAS

INDIA GOVT. CONSIDERING SITUATION

Madras Sept. 11.

The problem of milk supply in urban areas in the Provinces was one of the subjects of discussion at the meeting of the Governing Body of the Imperial Council of Agricultural Research held at New Delhi last week. The Government of India, it is understood, are actively considering the steps to be taken to ease the situation which has become very acute in many places.

A number of schemes for Agricultural Research in the Provinces, it is learnt, were sanctioned by the Governing Body of the Imperial Council of Agricultural Research at its meeting in New Delhi last week. Most of the members expressed the feeling that the present income of the Council which amounted to about ten lakhs was wholly inadequate for undertaking on large scale and sustained research. It was resolved therefore to press the Government of India to make a special grant of Rs. 50 lakhs a year.

"Hindu" 12-9-44

Review

Diagnostic Methods in Veterinary Medicine. By Geo. F. Boddie, B. Sc. (Edinl), M.R.C.V.S., Professor of Medicine, Royal (Dick) Veterinary College, Edinburgh, Scotland. Messrs. Oliver & Boyd, Ltd., Tweeddale Court, Edinburgh. Price *sh.* 15 net.

There are numerous treatises on Veterinary Medicine but there is none on clinical methods of diagnosis. This book, though in a concise form, can be considered as the first of this sort. This is a long-wanted work and should be welcomed by every Veterinary Clinician.

The book contains 19 chapters. Each system is dealt with separately. The clinical signs pertaining to each system as the digestion, respiratory, circulatory, urinary, nervous etc., together with a brief description of its regional anatomy, the clinical methods of examination and their application to the different species of animals, and the interpretation of the different symptoms are detailed in such a practical manner that the book will be of great use to the students, teachers and practitioners. The author has taken pains to furnish much useful information on radiological examination of some of the important systems and organs, and electrocardiograph as applied in Veterinary Medicine. These will enable the Veterinarian to post himself fully with the latest methods of diagnosis in par with his medical confrere.

Instructions regarding Tuberculin, Mallein and Johnin tests are also given in the book besides the procedure to be adopted in collecting materials as blood, milk, urine, faeces etc., for laboratory examinations. It also contains details of techniques connected with urine analysis, clinical

bacteriology, clinical haematology and post-mortem examination. This book should therefore be of great help to the clinical practitioner as it will enable him to be self-sufficient to a great extent.

This book would serve its purpose better if illustrations of the ova of spirocerca, schistosomes and paramphistomes and the larva of strongyloides and of some of the microfilariae have also been added and if deficiency diseases due to lack of vitamins and minerals, and nutritional diseases have also been included.

The book deserves a place in every library and can be recommended as a text book for students of clinical medicine.

Obituary

M. AUDIMOOLA MUDALIAR, G.M.V.C.

We regret we have to record the demise of M. Audimoola Mudaliar, Retired Veterinary Assistant Surgeon, C.V.D., Madras, on 26th August 1944 at Conjeeveram.

We tender our heart felt condolences to the members of the bereaved family.

Errata

In Page 100, under Discussion, in line No. 2 for 'Plate No. 1' read 'Plate No. 3'.

Veterinary Instruments

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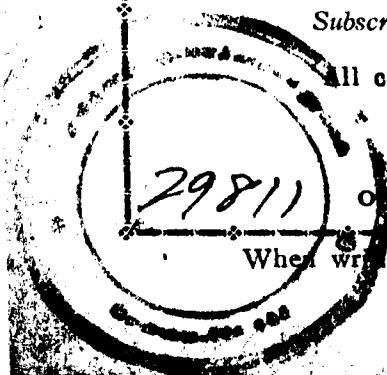
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