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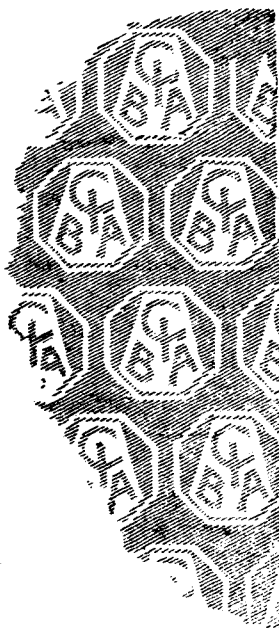
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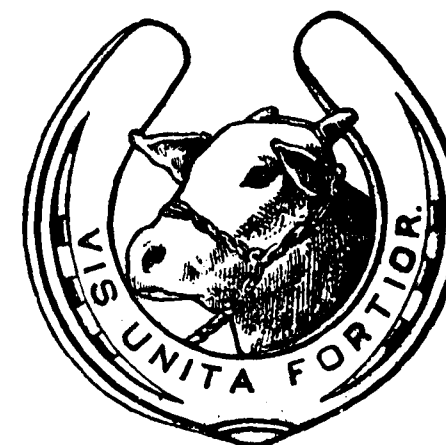
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(The Journal of the All-India Veterinary Association)



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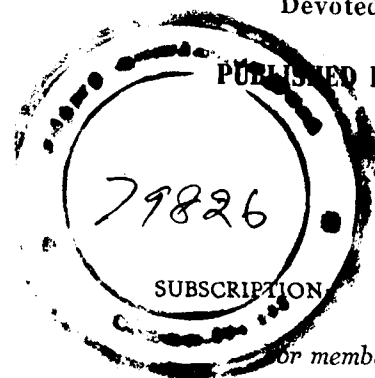
The Indian Veterinary Journal

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Devoted to the Cause of Veterinary Profession.

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



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General Articles.

"OSTEOPOROSIS" IN HORSES

BY

M. Y. MANGRULKAR, M.Sc., M.R.C.V.S., D.T.V.M., (Edin.),

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"Osteoporosis" is a fairly well-known disease of horses, donkeys, mules, dogs, pigs and goats. The characteristic symptoms of the disease are attributable to morbid changes occurring in the bones, the skeleton being more or less softened and swollen. It has been reported in the horse from various parts of the world (Europe, Australia, Africa, Madagascar, North America, Brazil, Fiji, Japan, South China, Cochin China, Java, Hawaii, the Philippines, India, Burma and Ceylon), the literature on the disease dating at least as far back as the last quarter of the 19th century. For obvious reasons, the importance of the condition has been recognized mostly in the horse, affecting, as it commonly does, the heavy or fast-working animal which type is largely imported into a country. Of course, no respect is shown by the disease for the native as against the highly-bred imported equine in any country.

The disease has, during the past 70 years or so of its recognition, earned various names, some of which are incorrect and misleading although at times expressive. Unfortunately, some of the defective terms are still in use.

The etiology of the condition was for a long time shrouded in mystery. It was thought that the disease was due to infection, and that it was even contagious. Terms such as osteitis fibrosa and osteoporosis suggest such an

With this paper the author opened the discussion on "Osteoporosis in Horses" at the Provincial Conference of the Madras Veterinary Association in September, 1946.

old-fashioned view. Some believed, only to be disillusioned subsequently, that it had a familial predisposition, being found in horses related by blood.

The names osteomalacia, bran disease, miller's disease, and osteoporosis illustrate that while the changes in the skeleton were appreciated, certain foods were associated with the etiology of the disease. It is regrettable that the misleading term, osteomalacia, is still being applied to the malady in some parts of the world e.g. Japan and the Philippines.

Among the workers who associated diet with the development of the disease were Lane (1906), Sturges and Crawford (1910-1927), Niimi (1927-1928), and Kintner and Holt (1932). The credit for a more systematic and enlightening work goes to Sturges and Crawford (1927) who conducted feeding experiments in Ceylon and reproduced the disease on a small but significant scale. It was, however, left for Theiler and his collaborators in South Africa (1934) to prove beyond all doubt that the disease was the result of a faulty $\text{CaO} : \text{P}_2\text{O}_5$ ratio in the diet. To the disease he suggested the proper term, Osteodystrophia fibrosa (Syn. Osteofibrosis, Fibrous osteodystrophy). He confirmed that the spongy swelling commonly, but not invariably, of the skull bones, and to some extent of the rest of the skeleton of the affected horse [cf. terms like Big-head, and Osteodystrophia generalisata of some authors (Berge and Pallaske, 1934)], which form a very characteristic morbid change accounting for the symptoms of the disease, is the result of excessive phosphorus intake co-existing with deficiency of calcium, such as would be expected to occur when horses are fed on abundance of miller's grain, bran and cereal feeds in general (including maize in S. Africa), and certain quality of hay or green fodder (in S. Africa local oat hay, foraged just before ripening, is poorer in Ca but richer in P) which have a wide, sometimes extremely wide, Ca : P ratio.

Referring to similar pathological processes in man, Theiler (1934) states that in Paget's disease (syn. osteitis deformans) and von Recklinghausen's disease (syn. osteitis fibrosa) there is "an excessively accelerated and intensive process of resorption and rebuilding of the tela ossea . . . manifested by abnormally increased activity of multinuclear osteoclasts and the presence of much fibrous tissue which has assumed an osteogenic function". These two diseases, however, differ in the fact that the former shows localised and irregular, and the latter a more generalised and uniform, alteration. The disease in animals is of the latter variety and may be considered as the veterinary parallel of von Recklinghausen's disease of man (cf. the term osteodystrophia generalisata).

According to the work of Sturges (1927) and Crawford (1927) and Kintner and Holt (1932), vitamins A, C or D appear to play little or no part in the causation of the disease.

As already mentioned, the disease is more important in the horse, and appears to affect it at all ages after weaning, but as a rule younger horses upto 7 years old engaged in heavy or fast work are more susceptible, and one cannot afford to see them diseased. There is no truth in the old claim that imported horses are more predisposed than the local breeds.

It seems reasonable to expect that in some parts of the world, where the soil is generally deficient in calcium and unduly rich in phosphorus, and where the food of horses consists of liberal quantities of diet of the nature of cereals or their products, or hay, or grass, having an injuriously wide Ca:P ratio, the disease would be enzootic. Perhaps this is so in Madagascar, the Philippines and S. Africa. In Madagascar the disease was said to be unknown until 1895 after which horses, mules and asses were imported and "at one time . . . it was regarded as the inevitable end of all imported horses" (Theiler, 1934). In S. Africa, too, cases were noticed much more frequently with the importation of valuable pedigree horses, and this gave the impression, as in other countries, that imported stock was more susceptible than native horses. That this impression was a mistaken notion is apparent from the fact that the former type of animal is more useful and valuable and is, as a rule, fed mainly in the stable on locally obtained, or economically imported, feeds not always chemically analyzed beforehand for their Ca:P ratio; the native horse, on the other hand is left to grazing naturally and is, therefore, seldom exposed to the ill effects of prolonged feeding on an imbalanced diet. Even so, the disease does occur at times in the local animal but a sporadic case in an inferior animal causes little anxiety to anyone!

The same may be said to be true of horses in the cavalry moving into new areas where they have to be stable-fed on contractor's supply of grain and hay etc., either imported or native, which may be particularly rich in P and relatively poor in Ca. Such has been the experience in S. Africa and the Philippines.

Feeding experiments conducted by several workers in different parts of the world tend to show that the quickness with which the disease can be reproduced and the speed with which it progresses are as a rule directly proportional to the width of the Ca : P ratio in the feed. Reviewing the work in Japan (Niimi), the Philippines (Kintner and Holt), and S. Africa (Theiler), Theiler (1934) is of opinion that the $\text{CaO} : \text{P}_2\text{O}_5$ ration in the equine dietary should be closer to 1 : 1, rather than to 1 : 2; Kintner and Holt (1932) were able to produce the disease when the ratio was 1 : 2.9. This fact deserves attention in the prevention of the disease: whenever or wherever the risk of excess of P over Ca in the diet cannot be avoided, extra Ca as CaCO_3 should be administered in drinking water as a corrective. Lucerne, or other Ca-rich fodder and suitable leguminous foods, if available in adequate quantities, will also serve as well.

Reference to the disease in India and Ceylon dates back to the report by Hayes (1879). Subsequent reports have been made by Smith (1887), Hart (1895), Sturges and Crawford (1910, 1917, 1926-1927), Ayyar (1931), Olver (1933) and Ratnam (1941). All these reports indicate the sporadic nature of the disease, mostly in imported horses. Affected indigenous horses, for such do occur, seldom receive due attention of the owner and are only exceptionally brought to the notice of the veterinarian. Thus, from the point of view of the average Indian veterinarian, the disease would appear to be little more than an academic curiosity since the horse, like the dog, is one of our less important animals. I must hasten to add, however, that this need not be an excuse for a gathering like ours to ignore the clinical importance of a malady which may on occasions, howsoever rare, be brought to our notice in our professional pursuits.

It is not difficult to diagnose the disease once the "big-head" stage has been reached; nor is diagnosis so important at this late stage, because treatment is useful only when undertaken early in the course of the disease.

An early diagnosis is based often on circumstantial evidence in the absence of a reliable history of illness. Points that help are: insidious, often shifting, lameness which may defy location; lack of fever; a desire for lying down; disinclination to rise or difficulty in doing so; inappetence; gradual loss of condition; fear of or inability to do fast or heavy work. Better care and feeding in the hospital, rather than symptomatic treatment, may improve the patient sufficiently to justify its discharge. After apparent cure, however, the animal, having gone back to the defective dietary, returns after a time, sometimes with more aggravated symptoms such as joint trouble (slipped joint, collapsed fetlock etc.) or even a fracture or two. Symptomatic treatment as before, if possible, will only be palliative. Not infrequently, the patient develops other signs of skeletal weakness like slips, falls, fractures, abnormal gait etc., while under treatment in the hospital. Fractures, if any, heal but imperfectly and tend to recur; or, fresh fractures may occur. In due course breathing becomes somewhat noisy. Mastication is avoided or is imperfect due to apparent pain. Solid food may be eschewed, and boluses dropped or grain bolted whole, undermining the condition. Sloppy food is preferred. Oral examination reveals loose teeth, particularly the molars. Skull bones yield on percussion a hollow dull sound. The experienced clinician may, even at this stage, be able to detect the slight but pathognomonic swelling of the mandibular bone, if present. Iizuka's test (Ratnam, 1941) and X-ray photography are helpful in diagnosis and should not be lost sight of.

In some cases, there is a sudden collapse which leaves the animal utterly helpless. The animal is either dead or is brought to the hospital

only to be destroyed and autopsied. In these cases one may detect hidden or obvious fractures, sustained during exercise, casting, or struggling to rise after a fall. The ribs, limb-bones, or even the spine may be broken.

Blood calcium on an average is "reduced about 9% and the inorganic phosphorus raised about 20% in the disease" (Theiler, 1934), according to the work of Kintner and Holt. But more recent observations of Groenewald (1937) show that blood calcium determination is "of little value for diagnostic purposes in cases of suspected osteofibrosis".

Blood smears reveal little of significance, except in later stages when the change in the bones would have affected the bone marrow and the haemopoietic tissue. While in the early stages a slight stimulation may lead to leucocytosis, as observed by some workers (Joest and Jahnlichen), in later stages there may be by pressure atrophy a relative lymphocytosis as observed by Berge and Pallaske (1934). Blood picture may be further modified by intercurrent disease to which an osteofibrotic horse may well be prone.

If the disease runs its normal course uneventfully, the swelling of the skull bones (particularly the mandibles and maxillae) will usually be seen in a matter of weeks or months, depending largely upon the width of the $\text{CaO} : \text{P}_2\text{O}_5$ ratio in the diet. As the disease is a generalized affection of the skeleton, respiratory noises (due to the involvement of the nasal, frontal and palatine bones) and masticatory difficulty arise. Similarly, muscular, articular, nervous and haemopoietic disturbances may be noticed. Curvature of the spine, and deformed chest (scapulae and ribs involved) may be seen.

Post mortem examination shows the morbid change in varying degrees in the entire bony skeleton accounting for most of the clinical symptoms observed. One is especially struck by the general lightness (loss of weight 41 to 70%, Theiler 1934), and enlargement of the bones, and not infrequently by the discovery of improperly healed fractures. The bones can be cut or broken, but are apparently hard and calcified. After maceration the bone shows a crumbling spongy texture. In the case of the mandibles and maxillae the teeth, especially the molars, reveal loose setting and a tendency to drop off. Ash content of the diseased bone is, when compared to normal, low (Ingle, cited by Theiler, 1934). Articular cartilages of some joints reveal, according to Theiler (1934), localised erosions, described erroneously as "ulcers".

No endocrine enlargement in the diseased horse has been so far recorded—a point of interest in view of the facts that in von Recklinghausen disease of man the parathyroids are usually enlarged, and that

experimental injections of parathormone into guinea pigs, dogs and rabbits have in time produced osteofibrosis (Theiler 1934).

Histopathologically, the bone shows a preponderance of fibrous tissue over the hard bone. One sees an active and vigorous breaking down of bone by multinucleated osteoclasts, and the laying down of new bone, mostly in scattered fashion as trabeculae, by osteoblasts in the fibrous tissue which is very abundant in some places, the picture resembling a fibroma, or a sarcoma with stray or clustered osteoclasts. For a detailed description of the microscopical changes Theiler's (1934) original article forms an invaluable reference.

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THE ROLE OF NUTRITION IN LIVESTOCK IMPROVEMENT

BY

D. VEERARAGHAVAN

Vety. Asst. Surgeon, Propaganda unit, Madras

That underfeeding and malnutrition are the two major causes for the present deplorable condition of our Livestock is a proven fact. Even a passing perusal of the relevant literature and a study of actual village conditions leave one in no doubt on the point.

The Royal Commission on Agriculture in India (1928) says, that no substantial improvement in the way of breeding is possible until cattle can be better fed. Wright (1937) says that there is no doubt that the majority of Indian cattle are seriously underfed. In the Administration Report of the Civil Veterinary Department (1940-41) it is stated that the breeding of cattle

had in recent years suffered a check owing to the progressive reduction in the supply of fodder. Hurley (1944) was of the opinion that a substantial proportion of the mortality and morbidity of animals was the result of nutritional deficiencies and that nutritional causes were responsible to a very large extent for the underdevelopment of livestock. Mukerjee (1944) says that no improvement of the breed and efficiency of Indian cattle is possible unless the chronic fodder deficiency is solved. The Eastern Economist (1944) in an editorial attributes semi-starvation as probably the greatest single factor in the causation of the degeneracy of our cattle. The Indian Veterinary Journal (1945) is also of the same opinion. Kaura (1945) is of the view that undernourishment owing to lack of sufficient fodder as being the most important limiting factor to the development of Indian cattle. The Special Advisory Board of the I.C.A.R. (1945) laid down definitely that increased production from Indian flocks and herds depends very largely upon the degree of improvement which can be made in both the quantity and quality of their food supply.

To remedy this state of affairs is an uphill task. Provision of more fodder, pasturage or grazing may have only a palliative effect. The situation calls for bold-thinking and the implementation of a broad all-comprehensive programme.

First, let us examine the factors that have brought about this chronic semi-starvation and malnutrition among cattle. The Royal Commission on Agriculture in India (1928) has stated that due to climatic conditions in India the grazing lands do not produce herbage of a kind capable of supporting the cattle at all seasons of the year, and that the progressive breaking up of more and more land for tillage has diminished grazing areas and has also increased the need for more draught cattle, which in turn are competing with the already existing Stock for the limited fodder and grazing resources. The Administration Report of the Civil Veterinary Department Madras, (1940-41) says that the reduction in fodder supply is consequent on the replacement of cereal crops by other commercial crops e. g., cotton, tobacco, chilly, turmeric which yield no fodder. Ramamurthi (1946) is of the opinion that the present form of our Agricultural economy is reverse—trade coming first and foodcrops last. The Memorandum of the Advisory Board of the I.C.A.R., (1945) states "the amount (of grazing) available is insufficient as regards both yield per acre and acreage. Grass land which can produce crops, are brought under the plough wherever possible. Another difficulty is that the rainfall being seasonal, grass is available only for a few months in the year: the rest of the year and particularly during the hot-weather, there is little grass to be had."

Added to this well recognised and definite shortage of fodder supply, estimated to be only 60% of the total requirements by authorities, a

majority of the animals are suffering from various forms of malnutrition and deficiencies. Kaura (1945) has discussed in great detail the causes that have led to the deterioration of cattle due to environmental and nutritional factors. Thus the chief causes that have led to the existing under (and mal)-nutrition of our cattle can be said to be due to climatological, nutritional, environmental factors and greatly as a result of faulty Agricultural practices. The harmonious and reciprocal blending of the Soil, Plant, Animal and Man whereby all are equally nourished without detriment to none, has gone awry and requires readjustment. The soil should be coaxed to produce more food for man and animal, and the fertility of the soil should be kept at the optimum level by the return of all the available organic manure that animals produce. In a country with an overwhelmingly agricultural economy, it is quite essential to see that the triangular balance between soil, plant and animal is always kept harmonious. It is here that the paramount importance of Mixed-farming is clearly seen. Cattle should not be looked at from the point of view of Work or Milk alone, and relegated to the corner to thrive on whatever fodder or cereal-stalk is available after meeting the needs of man. Leguminous and other fodder crops should invariably be grown in proportion to the Livestock available not merely to improve cattle, which in itself is paramount but for the equally important object of enhancing the soil fertility. Littlewood (1936) says that ordinarily the ryot very rarely troubles himself to grow green food or prepare dry fodder for the cattle; the same plants which supply him with grains, feed his cattle also with straw. This is a topsy-turvy arrangement. A system of Mixed-farming and rotation of crops, not only means better Livestock, but enhanced soil fertility and increased food production. Another factor which depletes the available limited quantity of concentrates, is the export of a large quantity of Oilseeds and Oilcake. If this valuable supply of Nitrogenous food is to be made available both for cattle and land, this export should be curtailed or stopped completely. That the loss in trade as a result of this step would easily be made up in the long run by increased returns from both plant and animal husbandry, should be obvious to anyone who devotes a little thought to the subject. Even as early as 1890, Voelcker J. A. was of the opinion that the export of oilseeds not only implied the removal of a very considerable amount of soil fertility, but that utilisation of these oilseeds to feed cattle—after extraction of the oil—would mean the return back to the soil, of the rich manurial constituents contained in the oilseeds. Hence, if Indian cattle are to be resuscitated from their present deplorable, underfed condition, and are to play their proper place in the Economic Rehabilitation of the country, an allround system of Mixed-farming including the adequate growing of leguminous and fodder crops, and the proper utilisation of the farmyard manure, should be brought into force with the co-operation of all concerned. This would definitely bring about an abundant increase in food production for Man, in

its wake, thereby compensating for the loss in the acreage that might go under fodder crops.

Some suggestions for improving the Nutritional position of Indian Cattle.

1. The restriction or the complete stoppage of export of oilseeds or cakes and also Bone and Bonemeal, (these latter are valuable to correct the deficiency of both soil and animals) followed by an increasing utilisation of these, to manure the land and to feed the cattle,
2. A change-over in crop-production: from the extensive to the intensive, by a proper development of irrigation, manuring, etc., and making available the acreage so released for growing more and more of leguminous and fodder crops. The importance of increasing the acreage under fodder and leguminous crops manifold, cannot be stressed too much. This would definitely give a fillip to both Agriculture and Animal Husbandry, leading to their mutual prosperity.
3. A proper and protected exploitation of grazing areas available including Forest-grazing should be done wherever possible.
4. A great extension of the present practice of 'haymaking' in Forest areas, carried on only in a few places now. This would go a long way in meeting fodder shortage during scarcity periods.
5. An extensive drive to be undertaken for the distribution of mineral food and common salt for Livestock consumption. (This can be done by the state either on a basis of free distribution or as a subsidised measure.)
6. A detailed and combined Soil and Animal-nutritional survey with a view to determining the extent and nature of deficiencies and imbalance. After correct and scientific data are available, practical measures to offset the malnutrition, etc., should be taken.
7. Wide publicity to be given about the importance of the subject of Animal Husbandry for the ultimate prosperity of the agricultural population of the country, among cattle-owners as well as others, who have anything to do with the subject.

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CARCINOMA OF THE HORN IN BOVINES

BY

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Incidence.—The so-called Cancer of Horn is common among cattle of the Baroda State and causes a certain amount of economic loss to the stock-owners.

During the course of my tours in all the four districts of the State, a good number of these cases were examined by me. It has been observed more in bullocks having big and prominent horns like Kankrej breed of cattle than Gir and other types of mixed breeds of the State. The incidence is rare in cows and very rare in buffaloes.

Etiology.—The origin of this condition in most of the cases appears to be of a traumatic nature—direct or indirect injury to the horn caused either by fighting or rubbing against any hard object or by tying the ropes round the base of the horns.

Predisposition.—Cattle breeders such as Rabaries, Vagharies, etc. are in the habit of removing the external layer of the horns of the bull-calves as soon as they make their appearance. According to them, this is necessary to get big horns of beautiful uniform size and shape. This practice naturally weakens the horns and exposes them to the effects of injuries.

Symptoms.—The first symptoms of the disease are, frequent shaking of the head, commencing deformity of the horn such as drooping, with softening at its base and watery, slimy or sanguinous discharge from the affected part of the horn or from the nose. As the affection progresses there is uneasiness and loss of condition. The affected horn gradually bends down and finally gets detached exposing a yellow, cauli-flower like growth, which gradually increases in size, invades sinuses, and, in advanced cases, even the cranial bones. In some cases the eyes also get affected with eyelids swollen and ophthalmia and corneal opacity. In later stages when amputated the affected portion of the horn is seen in the form of a soft cheesy looking mass with disintegration of the original horn-core. The animal goes down in condition and becomes emaciated. Attacks of biddiness, and circular movements are often noticed and the affected animal often leans against the walls of the byre with the head hanging down. Death occurs either from toxæmia or other complications.

Laboratory Examination.—Many cases of horn-cancer were examined and specimens of cancerous growths taken from the affected parts such as

the sinuses and also from the cranial cavity, lungs, liver, etc., of animals that had died of horn cancer were sent to the Imperial Veterinary Research Institute, for histo-pathological examination. The specimens were declared to be "Squamous celled Carcinoma or a typical Epidermoid Carcinoma".

Nasal discharges, cancerous growths, urine and faeces of cases under treatment were repeatedly examined for helminthic infection and the results were always negative.

Post-mortem lesions.—Post-mortem conducted on animals that died of this complaint showed presence of metastatic growths in the internal organs such as liver and lungs and also the facial sinuses and cranial cavity. Particular attention was paid to examine the portal veins, nasal veins, liver, etc., for the presence of parasites, but nothing was found.

Experimental work.—Still, presuming that the condition may be due to schistosomes, experimental treatment of cases of horn cancer with Tartar Emetic was undertaken. Details of the experiment are as follows:—

A batch of 6 bullocks affected with horn cancer in various stages was selected.

Bullock No. I.—Kankrej breed, fair in condition, aged 12, weight 1132 lbs. right horn drooping, watery discharge from the nose, frequent shaking of the head, etc. The case was in an advanced stage. It was given Tartar Emetic (one grain per 100 lbs. body weight in 6 per cent solution) intravenously on four consecutive days. Tonics and alteratives were given in food. Measurements between the two tips of the horns was recorded from the date of commencement of the treatment. No improvement was seen and the affected horn was drooping down more and more day by day. After a period of three weeks the affected horn was found to be completely detached from the base of the horn leaving behind the cauli-flower like growth. The horn was then amputated and treated with Eupad and Eusol. The animal was, however, sinking steadily and died after six weeks from the date of commencement of the treatment.

Post-mortem examination showed typical growths in the sinuses, cranial cavity, liver and lungs. These were forwarded to the Imperial Veterinary Research Institute for examination and they were declared to be "typical epidermoid carcinoma".

Bullock No. II.—Kankrej breed, age 8 years, weight 1064 lbs. condition fairly good, left horn affected. Slimy discharge from the nose, cancerous growths were seen when amputated for treatment. The case was in advanced stage. It was injected with Tartar Emetic (one grain for 100 lbs. body weight in 6 per cent. solution) intravenously on 6 consecutive days. The amputated

horn was treated with Cupri sulph and Carbolic oil. The case was noted to be rapidly improving and was discharged cured after six weeks.

Bullock No. III.—Kankrej breed, age 12 years, condition fair, left horn amputated, bloody and slimy whitish discharge from the nose, showing cancerous growths having offensive odour. The growth was surgically removed and the part was irrigated with Eusol lotion and dressed with Eupad. There was very slow improvement. The animal was going down day by day. There were also attacks of giddiness, circular movements, etc. It steadily got worse and died after 3 weeks. Post-mortem examination revealed typical growths in several organs as in case of No. 1. Nasal discharges and cancerous growths were examined for the presence of ova of nasal schistosomes with negative results. The mesenteric blood, portal veins, liver, etc., were searched for parasites without any success.

Bullock No. IV.—Kankrej breed, age 6 years, fair in condition, right horn amputated and showed a cancerous stump. The case was treated with Copper Sulphate followed by Carbolic oil dressing and was discharged cured after four weeks.

Bullock No. V.—Kankrej breed, age 15 years, condition fair, right horn amputated. The case was a bad one as was must out from the exuberant growths and sanguinous discharge from the nose. There was also opacity of the cornea of the eye on the same side. Decoction of Neem leaves was used daily for fomenting the affected parts and $HgCl_2$ lotion for irrigating and plugging the wound. This dressing was continued with changes in dilution of the $HgCl_2$ lotion according to the conditions of the wound. The wound completely healed up and the animal was discharged cured after five weeks.

Bullock No. VI.—Gir breed, age 7 years, fair in condition, left horn amputated, slimy discharge from the nose, and affected parts necrotic. The cancerous growths were treated with pure phenol till the healthy granulations made their appearances. Carbolic oil dressing was then continued and the case was discharged cured after 3 weeks.

A second batch of six animals was selected to try the Tartar Emetic and Mag. Sulph treatment as recommended by Dr. Stirling. The affected horns of all bullocks were amputated.

Bullock No. I.—Kankrej breed, age 9 years, weight 940 lbs. condition good. The cancerous growths were treated with Copper Sulph and Carbolic oil. This case received four injections of Tartar Emetic in doses of 1 grain per 100 lbs. body weight on every alternate day. Rapid healing was noticed and the case was discharged cured after five weeks.

Bullock No. II.—Kankrej breed, age 10 years, weight 1020 lbs. fair in condition, slimy discharge from the nose, pulpy growths at the base of the

affected horns and necrotic lesions in the horny structure. Tartar Emetic injections were given—one every fourth day, the dose being one grain per 100 lbs. body weight.

The horn was treated with $HgCl_2$ lotion using phenol as a caustic whenever necessary. The case was discharged cured after 6 weeks.

Bullocks Nos. III, IV, V and VI were treated with Mag. Sulph. only. The wounds were irrigated with a saturated solution of Mag. Sulph. and dressed with dehydrated Mag. Sulph daily for about 8 to 12 days. After this period, a dressing consisting of equal parts of powdered charcoal and sugar was tried until healing took place. Out of 4 cases, one was in very advanced stage and did not show any improvement and had to be declared incurable.

The remaining three cases were not so badly affected and they showed good improvement with the Mag. Sulph. treatment, though caustics had to be used occasionally for the removal of the cancerous growths. These cases were discharged cured within a period of four to six weeks.

Summary:—Out of the 12 cases under treatment, 9 were cured, two died and one was declared incurable. The percentage of cure is more than 75%.

Tartar Emetic was used in four cases and, in conjunction with local treatment, gave encouraging results. It arrested the course of the disease and helped in rapid healing of the wound and in improving the general condition of the animal.

Out of the medicines used for dressing, Mag. Sulph. $HgCl_2$, Phenol, Cupri Sulph. and Carbolic oil gave satisfactory results.

As regards causation of this condition, nothing could be said definitely. Examination of nasal discharges, faeces, urine, and blood for the presence of any ova and schistosome parasite have been uniformly negative. The condition as it is seen to day appears to be due to irritation set up as a result of injury to the horn either directly or indirectly.

Prevention:—Dehorning the cattle while they are young is the best way to avoid this condition. Horns should be protected by a leather cover or case, thick enough to offer less chance to the effects of injuries to the horns. More important than these however, is that the practice of removing the external layer or paining of the horns should cease.

N.B.—Amputated and non-amputated cases under treatment were from Baroda Pinjrapole.

INDIGENOUS DRUGS OF INDIA, THEIR VETERINARY AND ECONOMIC ASPECTS*

BY

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Introduction :

By the use of the term "Indigenous Drugs" in this subject, it is meant not only those drugs that were originally the natives of India, but also those which are reported to have been originally introduced into India from outside, and have subsequently become natives of India. In Watt's Dictionary of Economic products of India, it is found that several plants were originally introduced into India from outside. At the same time, classical names for them in Sanskrit are given and these names are found in the original indigenous medical and veterinary literature dated several hundreds of years before the reported date of their introduction into India. It is therefore difficult, if not impossible to reconcile the theory of importation, with the existence of the names of these plants in the indigenous literature of bygone days. It is not our purpose to enter into a controversy on this matter. It is enough for us to say that the term Indigenous drugs is used here in its widest sense and includes all drugs which are either cultivated or manufactured in India.

The Indian indigenous drugs, no doubt play a very prominent part in the economic importance of our country, from the medical and veterinary point of view. The art of medicine, either human or veterinary is a very ancient one and drugs have been in use in antiquity, as far back as history begins.

The art of healing, its origin and antiquity :

With the earliest living being, the knowledge of medicine must have been purely an instinctive one. It is not unreasonable to assume that, in the primitive age, the very instinct of self preservation against the adverse influences of heat, cold and other uncongenial surroundings must have resulted in an ardent desire for a knowledge of the preventive and curative means of living against disease and the hygienic measure of a healthy existence. Thus driven to the necessity of acquiring knowledge about medicine, the primitive man must have exercised his powers of observation and his faculty of reasoning and must have supplemented his knowledge thus gained, by a close study of what is called "The Book of Nature", i. e. by closely observing how lower animals by virtue of their instinct are able to protect themselves and get cured of certain diseases, by the use of some herbs, roots and stems of medicinal plants, etc.

* Read at the Provincial Conference of Madras Veterinary Association in September 1946.

Veterinary science as the pioneer of all other medical sciences in the world :

There are evidences to show that man acquired the medical art to a certain extent, by observations on animals and birds. Schmiedel-berg is of opinion that man has imitated animals in detecting remedial agents. In many instances, that lower animals have been the preceptors for primitive men in the matter of selection of medicinal herbs, is well authenticated and borne out by many historians. Pliny, in his natural history says that Hippopotamus has been the preceptor in one of the operations of surgery, viz. venesection. When this animal becomes too bulky, on account of the continued over eating, it presses its body against some sharp and recently cut stem of a reed on the banks of rivers and injures a vein in its thigh. As a result of bleeding, the animal gets relief and later on covers the wound with mud. Dogs and Cats lick their wounds and heal themselves. Dogs eat grass to excite vomition. Swallows heal their sore eyes by the juice of calandine. Bears cure their stomach-ache by eating the leaves of aurum. Tortoise eat a plant called comila bubula which is stated to be an antidote against snake venom. Stags counteract the effect of poisonous plants by eating artichoke. Elephants when they get colic have recourse to purging by eating the saline earth. Thus, it can be observed, how primitive men by a close study and observation of the "Book of Nature" were able to gather a knowledge of some of these medicinal herbs. Following on this period of primitive uncoded, unimaginable and indefinite, pre-mythological antiquity, we pass on to a period when all the instinctive powers of observation and imitation aided by man's own faculty of reason and discrimination were codified and regularised in the form of myths and legends, which as a sequence of progressive evolution and development assumed a definite shape in the so-called 'Ayurveda' of the Vedic period. Subsequently owing to the influx of time, many of the hymns of Ayurveda appear to have been lost, while some stray ones here and there were available. Historians have been trying to fix up the Ayurvedic period to some remote antiquity and they have also shown how Dhanvantary became the vedic father of Indian medicine and through him Susruta became the father of Hindu surgery and Charaka, the father of Hindu medicine, to whose authorships, the two famous books on Surgery and medicine, viz. Susrutha samhita and Charaka samhita are respectively attributed. Contemporaneously with the above two authors on human medicine, came the two authors on Veterinary science—One known by the name of Palakapya, the author of a big treatise on elephants called "Hasthyayurveda" and the other known by the name of Salihotra, the author of a still bigger treatise on horses called "Aswayurveda Siddhayaoga Sangraha".

The Importance of Veterinary Science in Ancient India :

All the historians are agreed that the ancient Indians were a race of Agriculturists and that they appreciated the importance of Cattle for agricul-

ture. It constituted a part of their national wealth. The Cow formed an object of veneration and worship in the Hindu house-hold. Regarding other animals it is well known that horses and elephants formed the chief paraphernalia of all the kings and nobles, and that bullock or horse drawn chariots, elephants and horses formed the three main constituents of an army for warfare. There are also evidences to show that horses and cattle were used as animals of draught and beasts of burden. Oxen were chiefly used for ploughing.

Supply of animal products :

The animal kingdom served a very useful purpose in the socio-religious life and the Materia medica of the Hindus since very early times. Milk was known to them to be highly nourishing; Cow's milk and buffalo's milk were used for making butter, ghee, curd and various kinds of sweetmeats and cakes. Cow's milk, sheep's milk, Ass's milk, and Camel's milk, etc., were all extensively used in medicine. Cowdung was necessary for manuring the fields and for use as a disinfectant in the common Hindu household. In order to ensure a uniformly slow and steady heat for the manufacture of several Ayurvedic preparations, dried cowdung cakes were found indispensable for the druggists, furnace. It is thus seen that animals played a very important part in the agricultural, economic, religious, social and medical welfare of ancient India. The supreme indispensability of the animal kingdom to human beings was thus realised and this realisation is well brought out by the fact that many animals have been deified in the Hindu religious scriptures and put on a par with the divine. We have thus references to the cow as the divine embodiment of whole earth and to several animals as the chief means of transport for individual Gods and Goddesses. Is it any wonder then that the ancient Hindus paid careful attention to the well-being of these animals and wrote several guide books and manuals for their proper up-keep! Scores of books have been written by several authors on Veterinary science. The importance attached to Veterinary science, on a par with all other sciences, is such that apart from the many books dealing exclusively and exhaustively on Veterinary science, it can safely be said that there are not many works in ancient literature either religious, philosophical, metaphysical, social or literary that do not abound in allusions to matters pertaining to Veterinary science. Owing to the influx of time, the advent of foreign aggression, the long and continued internecine wars that have been going on for centuries, the lack of facilities for the proper preservation of the huge manuscript documents, and lastly owing to India having become a subject nation, many of the books appear to have been looted or lost; while the remaining information now available which by itself, is profuse lie latent and dormant, scattered here and there, in long-standing libraries throughout India in old crumbling manuscripts, mostly moth-eaten, uncared for and unnoticed.

Value of the information available in Indigenous Veterinary Science :

There is generally an erroneous notion among some of the Western readers and among most of the Indians educated on European lines and imbued with a glimpse of the glamour of the Western civilisation and its habits and customs, that the ancient Hindus were only a race of metaphysics and religion, and that there was nothing really useful or scientific in their literature. This is not really the case. Recent investigations have shown and eminent historians are also of opinion that, on a par with metaphysics and religion, in every branch of science such as Astronomy, Mathematics, Physics, Chemistry, and Polity, etc., ancient India has been the forerunner of all the modern marvels of to-day. So also in the field of medicine, India held a pre-eminently prominent place in ancient days, and evidence has been adduced by Poecock, Diety, and others to show that the ancient Egyptians, Greeks and Romans and Arabians, owed much more to ancient India in the matter of medicine than what is generally recognised.

At present while there is a consensus of opinion among Indian laymen that no benefit will be derived by a study of the old systems of medicine which are based on empiricisms, rather than science, the Indian systems of medicine have been regarded by many of the western scholars like Wise, Ainslay, Roxburgh, Hooper, Dymock, Captain C. J. Saint, etc., as a rich mine of knowledge from which many useful things might possibly be unearthed. They have expressed the belief that any system of medicine, or for that matter, any ancient usage or custom that has held its own for generations, usually has some thing at the back of it, no matter how little it appears to be supported by modern science. Dr. Hugh, S. Cumming once the Surgeon-General of the United States Public Health service, says "for thousands of years, the Chinese prescribed the powdered heads of toad fish as a remedy for heart trouble and now adrenaline, the most up-to-date drug for the treatment of heart disease has been found to exist in the head glands of that fish. For generations, the fact that American Indian hunters always chose the liver and the whiteman the meat when the animals they had trapped or killed was divided, was quoted as proof of the white men's ignorance and primitive development. Yet in the last decade and a half we see the great nutritive value of liver has come to be recognised and scores of liver preparatives have sprung up in the market. Similarly, as a result of investigations into the Indigenous drugs carried on by the Indigenous Drugs Committee of India, R. N. Chopra, Dr. Komen etc., the usefulness of several drugs has come to be recognised and such drugs have been included in the British Pharmacopoea.

Necessity for research in Indigenous Drugs :

Whether, the indigenous systems can be revived in toto is a thing that may be open to doubt. These systems have been stagnant more or less

for the last more than 2,000 years with no attempt made to advance the knowledge on a par with modern progress, and as such it may at first sight seem difficult to reconcile these old theories with the modern scientific principles. But there can be no doubt that among the large number of drugs used by the indigenous practitioners during the past several centuries, there may be many, that deserve the reputation they have earned as cures. Investigation has shown that many of our pharmacopial drugs were known and were used in some form or other, long before they were introduced in western medicine. At the same time, there may be other drugs of little or no therapeutic value, that were in use simply because they were mentioned in old literature. As such, the active and useful drugs shall have to be separated from those which are worthless or inactive. The economic condition of the people in India is so low that they cannot afford to use the expensive medicines of the Western system imported from outside. Besides, in view of the difficulty of the present day allopathic treatment reaching the far off villages in the interior and of the easy availability of the indigenous herbs and plants the necessity for investigation into their efficacy is self evident.

Sometime back, Lord Hardinge, the then Viceroy of India in the course of an address said "When I remember how many millions of people in India are beyond the reach of allopathic aid provided by the Government and how many of those who had means of access to consult the best doctors still prefer to be treated in accordance with the indigenous system of medicine I come to the conclusion that I should be wrong to discourage the scheme which aims at improvement and development of this branch of medicine".

Recently in 1941, Mr. H. F. Knight (Now Sir H. F. Knight) the then Advisor to H. E. The Governor of Bombay, while declaring open an Ayurvedic College in Bombay said "In these days every science has to welcome strangers within its gates to test and prove them whether they be true or false, and if true, to embody them in its own system—if necessary, rejecting them from that system, such parts as will no longer stand the test. If a science fails to do so and adopts a policy of isolation and withdrawal from the stream of human progress, then its power of helping humanity inevitably ceases. Etc."

In the light of these, old systems of therapeutics cannot be summarily condemned as useless and they would form fitting subjects for enquiry and investigation.

The economic aspects of research:

The economic aspects of Research into the Indigenous Drugs of India may be classified under the following two heads:

(1) To make India self-supporting in the matter of drugs by utilising indigenous drugs as far as possible in the place of the imported ones and to bring about a careful and planned exploitation of the enormous crude drug resources of India not only to manufacture the several standard preparations now in use, but also to find out new remedies which will not merely replace the existing costly imported remedies but also those that will be appreciated and adopted by allopathic doctors.

(2) To find out ways and means of effecting economy in the manufacture of remedies, so that they may come within the easy reach of the great masses whose economic condition is very poor and the far off interior villages where the modern allopathic treatment cannot reach.

Regarding item one above, it can safely be said that the actions and properties of a large number of drugs now growing in this country are already known both to eastern and western medicine. Among these are many drugs of established therapeutic value which are in use all over the world. Such drugs grow wild and in great abundance in many parts of India and a few of them are also cultivated. Major portion of the former grow profuse, mature and eventually die uncared for and unused; while a small negligible fraction of these which are collected and exported here and there by stray traders to foreign countries at a nominal cost comes back to us in the form of the so-called standardised preparations, alkaloidal extracts and other allied finished products packed in suitable attractive glass or other receptacles, at a price probably hundredfold and more of the cost of the original crude drugs. Examples of such drugs are *Atropa belladonna*, *Hyocyamus*, *Niger*, *aconite*, *Juniperis communis*, *cannabis sativa*, *Podophyllum*, *emodi*, *stramonium*, *ephedra*, a large number of species of *menthae*, and a number of varieties of *artemesia*, such as *Artemesia brevifolia* containing *santonin* which are all reported to grow very widely and in vast abundance in the Himalayan valley, Kashmir, Bhutan, North West Frontier Provinces etc. and Castor seeds, *Chalmogra* seeds, and *nux vomica* etc. Careful utilisation and exploitation of these plants without being allowed to grow and die uncared for and unused will, no doubt, go a great way in improving the economic prosperity of the country.

Secondly, there are a number of drugs which though widely used in medicine are not reported to be originally natives of India, but thrive well when grown and reared under proper conditions in suitable climates. Examples of such drugs are *digitalis*, *Ipecacuanha*, *Eucalyptus*, *Cinchona*, *Jalap* etc. On account of the great demand for these drugs in the local drug market, their production in this country under Government subsidised schemes will definitely add to the economic welfare of the nation. Regarding the suitability for the growth of such plants, it can be said that the experimental cultivations carried on hitherto in several parts of India show that

the plants are thriving well. No less an authority than Professor Greenish of the London School of Pharmacy has aptly observed "India owing to the variations she possesses of climate, altitude and soil is in a position to produce successfully every variety of medicinal plant and herb required by Europe".

Thirdly, a large number of plants grow in India which though not exactly the same as foreign ones, have actions and properties similar to the imported remedies and would form excellent substitutes. Examples of such drugs are colchicum luteum, Scilla indica, Ferrula narthex, and gentiana Radix, camphor etc. If such drugs are investigated and made use of, the economic benefit to the country will definitely improve.

India's foreign trade in drugs:

The economic importance of this subject as one of the first magnitude and the urgent necessity for a research of this kind will be appreciated only by a scrutiny of the import and export drug trade of India. Attention has already been drawn to a number of drugs being annually exported to foreign countries at a nominal cost. These are being utilised there in various medicinal and other allied industries, while a portion of them is returned to India in the form of finished products fetching considerably higher prices. As illustrations of this it may be pointed out that nearly 4.1 millions pounds of tea dust are annually exported to America and Europe at a very low cost, whereas Caffein manufactured from it comes to 82,000 lbs costing Rs. 657,600. Cinchona bark is exported annually to the extent of about Rs. 100,000 while Quinine and salts imported annually comes to about Rs. 2,500,000. Nuxvomica seeds are exported annually to the extent of about 50,000 cwts. at a cost of Rs. 32,000 while the alkaloid strychnine and other galenical preparations made from it come back to India at a cost of Rs. 112,000. Camphor is one of the most common remedies used in almost every household in India. Though Kaurus Camphor, the real Camphor yielding tree does not grow in India, very good substitutes in the form of Blumea varieties, such as B. Balsannifera, B. Lucera, B. Densiflora, B. grandis, etc. grow luxuriantly in the Himalayas. According to Mason, the growth of B. Balsanifera in Burma is so abundant, that Burma alone can supply half the world with camphor. In spite of these vast resources, India does not manufacture camphor for her own use and has allowed her market to be flooded with the foreign commodity to the extent of nearly Rs. 2,500,000 annually. Such examples are many and need not be cited here. From this, one can understand the extent to which the Indian raw materials are being exploited by the drug manufacturers of foreign countries much to their benefit and to the great economic loss of India. There can be no doubt that, if all these raw materials were exploited and used in this country in the same way, in which they are done in foreign countries, it will not only save the drain of

these raw materials from this country and prevent us from taking back the finished products at considerably higher prices, but will also open up a large field for development of indigenous drug industries affording employment to thousands of people and making India self-sufficient in drugs.

Regarding now the second aspect mentioned above, viz. effecting economy in the manufacture of remedial medicine so as to make them within the reach of the masses, a reference has already been made to the fact that the economic condition of the masses is very poor and that as long as the present condition remains, treatment charges must be brought down to the lowest possible minimum. This can be done in two ways:

Firstly by utilising the local resources in the place of the imported remedies. Enough has already been said on this.

Secondly, by using crude drugs as far as possible instead of resorting to complicated preparations. There is a consensus of opinion that the separation and purification of the active principles of drugs or making standardised preparations involve much additional labour and expense; and as such these preparations may be resorted to, only where necessity and urgency are indicated.

Advantages of using Crude drugs:

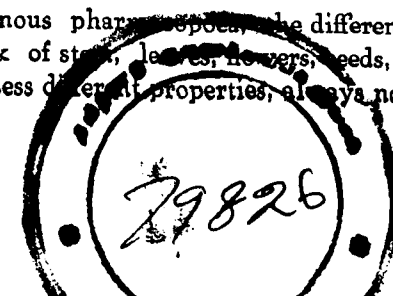
A great many ailments of every day practice are only of a minor nature and can be treated with crude drugs ordinarily available in the bazaars locally. This is more so in Veterinary practice. Many of these local drugs, if judiciously used will be nearly as efficacious as the most up-to-date refined products, and bring down the cost of treatment to the minimum. In every branch of pharmacopeal preparations such as purgatives, anthelmintics, Carminatives, expectorants etc, equally effective crude drugs are available and can be substituted with maximum efficiency and minimum expenditure.

The following are some of the factors to be considered in favour of using crude drugs:

Firstly it is a matter of common knowledge that herbs or plants taken from the field are most effective in their actions, next come those that are dried, preserved and made available in the local bazaars, and lastly come those where-from extracts are prepared and preserved in alcohol or other preservatives.

Secondly according to indigenous pharmacopoeia, the different parts of plants such as bark of roots, bark of stem, leaves, flowers, seeds, unripe fruits and ripe fruits are said to possess different properties, all are not akin

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to each other. In the case of *Aegle marmelos* the root bark is a cardiac tonic, the leaves are bitter and pungent, the unripe, and half ripe fruits and their rind are astringent, the ripe fruits are arenatic, cooling, laxative and demulcent etc. This is the case with most of the plants. Hence in the use of crude drugs there is the advantage of using the particular part of the plant which is specially indicated in the ailment.

Thirdly it is found that most of the crude drugs contain more than one alkaloid in them. Many medical men are of opinion that the sum total of all the alkalioids present in a crude drug is as efficient as the individual alkaloid in the treatment of a particular ailment, and as such, the drug itself can be employed instead of its particular alkaloid; for example cinchona bark with the total alkaloids therein has been found to be as efficient in malaria as its individual alkaloid Quinine or Quinidine; and *Ipecacuanha* with all its alkaloids therein is found as efficient in the treatment of amoebiasis as pure emetin. Again tincture of *Ephedra vulgaris* is as effective in asthma as its alkaloid Ephedrin. On the other hand, there is also another view that in some cases, the total alkaloids present in a drug act better than its individual alkaloids; for example, it has been found that in the case of *Hollarrhena antidysenterica*, the whole drug acts better than its alkaloids either hollarrhensine or Hollarrhenin. This shows that the use of crude drug is better than its alkaloid.

Fourthly, in cases where there are a number of alkaloids in a drug and where such alkaloids have properties either similar to or varying from one another, it is always possible that each alkaloid acts either as an adjunct, or as a mitigant or corrective to the other alkaloids, with the result that the whole drug can be administered in larger and safer doses than its individual alkaloids, which have to be used with great care and caution in view of their precipitate action and possible toxicity. It is however but fair to say, that in urgent cases the alkaloids alone are indicated, in view of their immediate action and possible relief.

Fifthly crude drugs received fresh from the field if available are always considered the best for their efficient action. According to the British Pharmaceutical Codex, the process of drying of *Gentiana Kurroo* roots may have a marked effect on their ultimate composition. Gentio-picrin, the active principle present in fresh *Gentiana lutea* roots is likely to be hydralised during slow drying by fermentative changes with consequent diminution of water-soluble substances. It is therefore possible that there may be absence of gentio-picrin and lack of aqueous extractives in the dry root. These are no reasons to contradict as to why this should not be the case, with the other drugs also. Fresh crude drugs are therefore always considered preferable for use.

It is thus seen that these are the several factors favouring the administration of crude drugs. Of course, it should be possible for us to use these drugs either as powders, decoctions, infusions, pills, boluses or electuaries as circumstances warrant and bring down the cost of treatment to the lowest possible minimum. The drug resources of this country are vast and immense, and it may not be an exaggeration to say that, with its planned research and drug industrialisation, India can not only make itself self-sufficient, but can also supply the whole world with its medicinal herbs and proprietary preparations.

Conclusion :

Enough has now been said on the subject. One thing is clear. God has not created the 400 millions of people and nearly one-third of the world total cattle population in India, with remedies for all their ailments some where outside India. And history shows that India has never before been so despicably dependent upon foreign medicaments as now, even for its, everyday requirements. This is mostly due to the scant disregard and abject apathy of the allopathic practitioners of to-day and the lay public as well, towards anything indigenous. The one reasonable attitude of the modern professionals, ought to be one of appreciation of what they have learnt in allopathic medicine, and at the same time an ardent aspiration and application to know if there is anything equally efficient in indigenous medicine. To throw off a thing without first of all knowing what it contains is not a healthy sign of a progressive science or a successful practitioner. Materials are there enough and in plenty; and opportunities are there, profuse. Not only the aptitude and the will on the part of the profession are absent but there is also the negative phase of apathy all round. This is indeed deplorable. There used to be a saying that there is no such thing as an all round combination; when dogs are there stones are not; and when stones are there, dogs are not. This is too true in our case. In India, as already referred to above, we have plenty of materials and opportunities, but lack the aptitude and the will for research, while in the *Hindu* dated 4th March 1946, (Page 8 under column "News in brief"), we find the following :—

"American scientists are planning a number of expeditions to different parts of the world to find out something more about the herb medicines of primitive peoples. In these days of advanced scientific knowledge, chemists are increasingly aware of the part that old time native remedies may play in new medical discoveries. One of the reasons for the renewed interest in herb medicine is the realisation of the value of vegetable matter in the battle against disease. Such discoveries as penicillin, and strepto-mycin etc., have proved that modern essential drugs are yielded by the same processes that produced the vegetable cures of our distant ancestors".

Comment is needless. One needs only understand where we Indians are and where the Americans are; in the matter of furtherance of research. If there be one thing more than another that must stir the right feeling Indian Veterinarian, it should indeed be a yearning desire and an unquenching thirst for a knowledge of the herbal cure of India's yore, of which one hears more in its ancient Veterinary lore.

Acknowledgement

My thanks are due to Dr. J. C. David, M.B.B.S., Ph. D. (Edin), Research Officer and Professor of Pharmacology, Medical College, Madras for his valuable suggestions and corrections carried out in this article.

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OCCURRENCE OF *Bact. Alcaligenes* SP. IN DUCK EGGS

BY

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Imperial Veterinary Research Institute, Mukteswar.

Investigations which led to the discovery of the organism under review were primarily directed towards propagation of the virus of Ranikhet disease of fowls in duck embryos. A flock of twelve ducks was purchased from the plains and reared at Mukteswar. They were housed in one pen, containing a tank. The diet consisted of bran, crushed maize, paddy and wheat. Eggs were collected every morning and set in ordinary egg incubators. Development of embryos was on the whole satisfactory and the work progressed uneventfully. The following year, another twelve ducks were imported and reared along with the first lot. This time about 50 per cent of embryos were found to be dead at the first candling on the ninth day and 25 per cent failed to develop. The mishap could not be attributed to the drakes since there were several of these in the flock.

Bacteriological examination of a few dead embryos revealed an organism in pure culture with the following characters: Short Grampositive rods with rounded ends, and arranged singly, non-motile, growing well on plain agar and on blood agar. On agar plates, colonies were circular, grey in colour, differentiated into central and peripheral portions, and developing a

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lemon-yellow colour after 24 to 48 hours at room temperature. In plain broth there was surface growth, indicated by a whitish ring in contact with the glass, and a viscid sediment, partially disintegrating on shaking. In gelatine stab, growth occurred without liquefaction. Fermentation and biochemical reactions were as follows: No change in glucose, maltose, lactose, sucrose, mannitol or salicin. M. R. and V. P. reactions negative; no reduction of nitrate and no indol production. There was production of H₂S and ammonia; litmus milk was rendered alkaline.

This organism was identified according to Bergey (1939) as belonging to *Bact. alcaligenes* sp. probably *Bact. alcaligenes metalcaligenes* (Castellani.) Braza (1938) has recorded the occurrence of *Bact. alcaligenes* sp. in hens' eggs and Valle, Braza and Wey (1938) have recorded deaths in young ducks due to infection with *Bact. alcaligenes*. Chaudhuri (1944) has recorded the occurrence of a typhoid-like fever in human beings due to *Bact. alcaligenes*. He uttered a note of warning against a symptomatic diagnosis of typhoid fever and stressed the necessity of conducting agglutination tests with sera from affected cases before making a diagnosis. Chaudhuri detected six cases of what appeared to be typhoid which harboured the organism under review. *Bact. alcaligenes* is a normal inhabitant of the intestinal tract which, under certain circumstances, is apt to invade the blood stream. In the duck or hen, the organism probably lodges in the ovary, thus passing into the egg.

Efforts directed at isolating ducks laying infected eggs were unsuccessful. Later, agglutination tests of sera of all ducks were undertaken. In two out of twenty ducks, titres up to 1:50 were obtained. Within a month both these ducks died but cultures from their blood and ovaries failed to demonstrate organisms.

This organism appears to be important from the public health point of view, in that it is likely to be transferred to human beings through infected eggs. It may also hamper the development of a poultry farm, should infected hens or ducks happen to be present. Bacteriological examination of eggs is therefore suggested if the occurrence of many infertile eggs or early deaths in embryos could not be traced to any known reason.

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THE
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No. 5

Editorial

A DISASTROUS MOVE.

We have been deliberately ignoring the various rumours that have been reaching us for sometime past with regard to the state of affairs in the Civil Veterinary Department of the Government of Madras. Our excuse is we have been hoping that better counsel would prevail and matters would improve. But we are sorely disappointed. We regret, therefore, we are forced to refer to this subject in these pages.

It was the last Congress Ministry that after a careful study of all the facts, decided to transfer the Livestock Section to the Veterinary Department. It is barely eight years now since this transfer has been effected and it is a matter of common knowledge to any discerning ryot in the villages that livestock work has received greater attention after this transfer and that it is one of the wisest of steps taken by the last Congress Ministry. The districts of Coimbatore, Chittoor, Anantapur, Guntur, Kistna etc., where more concentrated work is being done as a matter of breeding policy, would bear witness to our statement. We shall go even so far as to ask an impartial tribunal to go through the record of work done and give its verdict, for we feel so assured and proud of the good work done by the Veterinary Department—in spite of great handicaps in Men and Money. But which good work has ever thrived in this world without being maligned!

Quite recently, a campaign has been set on foot by a few interested persons to vilify the good work done by the Veterinary Department. Each one has got his own axe to grind. They have been hard at work (to put in common parlance) to pick holes in the administration so as to carry on a propaganda against the suitability of Veterinarians to manage the Livestock work. Their one ambition appears to be to get the Livestock Section separated from the Veterinary Department and constitute it into a separate Department, thus providing opportunities for their own advancement. We have no quarrel with the personal ambitions of any individual. But the methods adopted to achieve the object must be straight and clean. There is no use of indulging in a campaign of mud-slinging on a Department that has been doing such honest and sustained work.

We would request the Government to go through the record of work done during these eight years. Any decision taken must be based on such recorded evidence and not on the promises of individuals, who parade under national garb. We are second to none in the matter of nationalism. Our service to the country for the last 23 years is our pass-port. But we have no patience with pseudo-nationalism which tries to harm the country's interest for the sake of personal ends.

We may here point out that the Civil Veterinary Department Madras has been running refresher course in Animal Husbandry and Dairying for their Senior Officers. Stockmen are being produced year after year in large numbers. Some Officers have been deputed for higher studies both within and without India. Students of the Madras Veterinary College spend some months at a Livestock Farm during the course of their studies. All these ought to stop now, if a change is contemplated. For, no Veterinarian would care to join a new Department of doubtful quality and prospects. At a time when the whole Department has been tuned up for sustained work, mischief is sought to be done. Destructive work is easy and some people seem to specialise in it. This is yet another attempt of destruction. It will be interesting for the Govern-

ment to make a study as to who was mainly responsible for the closing of the Cattle Farm at Chintaladevi.

Our advice to the Government is "Leave alone the Livestock Section under the Veterinary Department. Give it finances and facilities to develop. It is well-set for very good work in the near future".

This is our warning and advice to the Ministry in the interest of the country which we love so much in common with the Ministry.

We are heartened to hear that the Veterinary Profession in Madras has, in no uncertain terms, strongly protested to Government against this disastrous move. We understand that the Director of Veterinary Services, the Veterinary Services Association and the Madras Veterinary Association have all sent in their representations to Government condemning the move. We do hope that the rumours are unfounded and that no such move is contemplated by Government.

RETIREMENT

E. R. KULKARNI, G.B.V.C.,

Mr. E. R. Kulkarni, Assistant Director of Veterinary Services, Bombay Province, Poona, retired on the 15th January 1947 on super-annuation pension after serving the Civil Veterinary Department, Bombay for 33 years in different capacities.

Mr. Kulkarni comes of a respectable Vatanadari Kulkarni family interested in livestock and agriculture and was born in the year 1892 in Kolhapur State. He naturally inherited all the qualities that go to make a successful Veterinarian. After joining the Bombay Veterinary College he graduated in the year 1913 with distinction and joined the Department as Veterinary Assistant Surgeon, and rose to the present post by his hard and sincere work in the Department. During the 33 years of his devoted service, he served as Veterinary Assistant Surgeon in charge

of important District Veterinary Hospitals, Veterinary Inspector, Deputy Director, Divisional Veterinary Officer and as Assistant Director. The Department will remember him long as a loyal worker and a kind and able administrator. He was loved by one and all in the Department and his subordinates particularly will miss his paternal love and guidance.

He was always very cheerful and optimistic in outlook and was a popular figure in the circle of his friends and the Department. Being interested in livestock and agriculture, we are sure, he will, even as a retired member, continue to serve the profession as earnestly as he did during his active life.

We all wish him a long life to enjoy his hard earned pension in happiness.

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E. R. KULKARNI, G.B.V.C.,
Assistant Director of Veterinary Services, Bombay Province,
Who retired on 15-1-47.

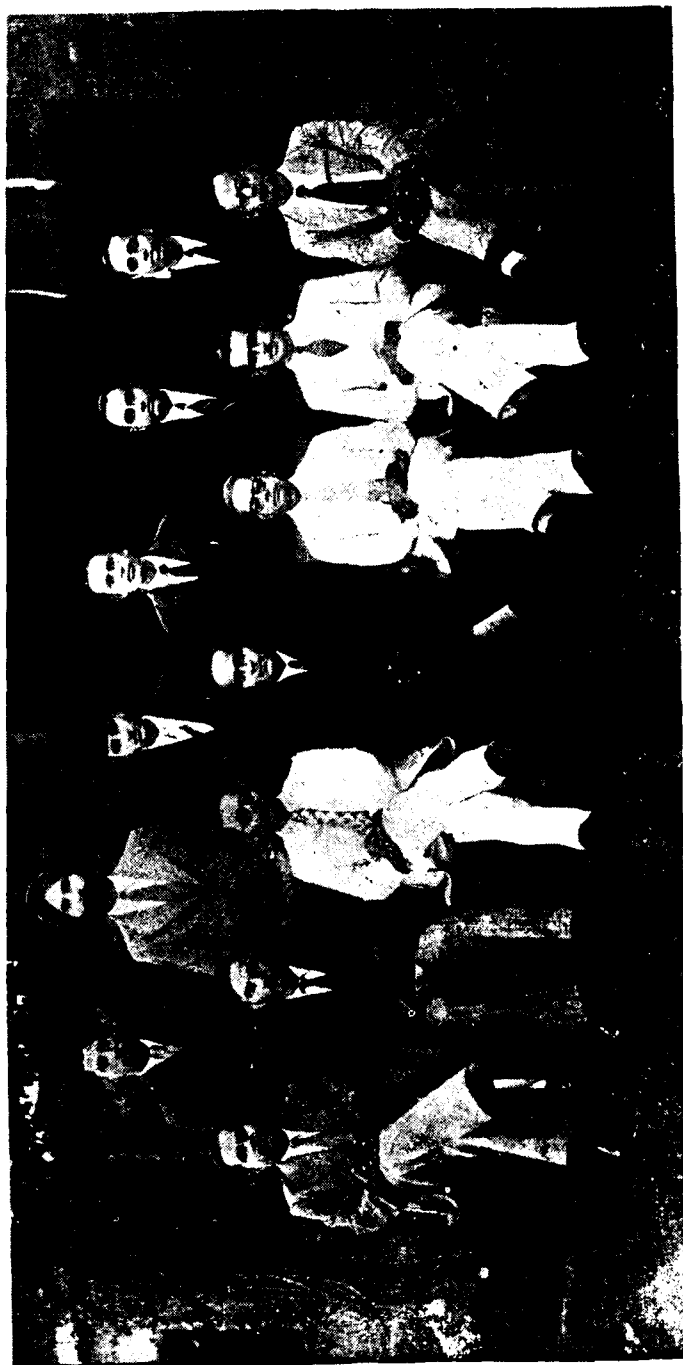


T. S. GULRAJANI, G.R.V.C., C.V.D., Sind,
Who has proceeded to U.K., for Advanced
Studies in Poultry Science.



C. D. KALAPA, G.M.V.C., C.V.D., Coorg
Who has proceeded to U.S.A. for Advanced
Studies in Veterinary Science.

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B. P. Parker (U.P.), O. S. Bhatnagar U.P., S. P. Sen Karamkar (Bengal).

Clinical Articles

PERVIOUS URACHUS IN A HEIFER-CALF

BY

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Lecturer in Animal Hygiene, Agricultural College, Coimbatore.

AND

S. N. VAIDYANATHAN G.M.V.C.,
(Addl.) *Asst. Lecturer In Animal Hygiene.*

According to Woolridge (1934) "pervious urachus is fairly common in the foal but rare in other animals". A case of pervious urachus in a heifer-calf, allowing the escape of urine through the umbilicus, attended the Agricultural College Veterinary Hospital, Coimbatore, and it is recorded here mainly for its rarity of occurrence in this species—*Bos taurus*. The spontaneous closure of the fistulous orifice is an added interesting feature of the case.

A three-day old, cross-bred heifer-calf was presented at the Hospital on 22-7-1946 with the history that the urine was noticed to escape from the umbilicus in drops, a few hours after birth, and almost in a stream thereafter. The animal was otherwise normal.

Examination of the floor of the vagina revealed three depressions. Attempts were made, by passing a catheter, to ascertain whether any of these would communicate with the bladder through the urethra. The calf, however, resented every manipulative effort to detect this and it was therefore considered necessary to postpone this examination. A guarded prognosis was given to the owner, bearing in mind that a plug of mucus in the short urethra of this heifer-calf may perhaps be responsible for the condition.

Any increase in the pressure of urine retained in the bladder always held the possibility of throwing this plug of mucus out. With that end in view, a pin suture through the urachus and skin was inserted and the calf kept under observation for the day.

In four hours, the calf was showing signs of great uneasiness, disinclination to suckle and, later on, dullness. Relief suggested itself as imminent and the pin suture was removed.

As the owner did not consent to other measures of relief for the condition, he was asked to make observations and report any progress in the case. The following is a gist of them.

- 3rd day after birth :— Attended Hospital for the first time and had the treatment detailed above.
- 4th-6th day after birth :— Nothing unusual noticed except for the passage of urine through the umbilicus.
- 7th day after birth :— Calf did not suckle properly. Did not pass urine at all.
- 8th " " " :— In the morning, the abdomen appeared bloated. The calf was straining a lot and about two handfuls of thick white mucus was passed from the vagina.
- 9th " " " :— More of the mucus discharge—but comparatively thin—was passed by the calf till noon.
- 10th " " " :— Animal was seen to pass urine through the normal passage after some straining. There was difficulty in passing dung. Navel string fell off that day.

It is surmised that the first (anteriormost) of the depressions in the floor of the vagina communicated with the bladder although, in the first instance, it had become occluded by the plug of mucus. The closure of the urachus the distension of the bladder and the forcing out of the plug had resulted in the passage becoming patent.

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CHRONIC LUXATION OF PATELLA IN BOVINES

BY

K. VENKATARAMAN, G.M.V.C.,

Veterinary Assistant Surgeon, Virudhanna

Introduction.—Chronic luxation of patella which may be defined as a temporary displacement of the patella from its normal position is one of the common affections of cattle met with in the Presidency of Madras. Though the disease does not endanger the life of the affected bovine, yet, it causes temporary disability and discomfort to the animal and lowers its market value.

Aetiology.—The aetiology of this affection is not definitely known. Ramakrishna Pillay in his note on 'Chronic Luxation of Patella among

bovine' (*Indian Veterinary Journal*, Vol. XXI, No. 1) opined that when young animals (bulls and bullocks) are put to heavy work for the first time, this affection usually occurs, probably due to the undue strain brought about by heavy work on the tender and immature ligaments of the femoro-patellar articulation culminating in the dislocation of the bone. I agree with his view.

Symptoms.—This affection starts with an occasional jerk of the affected hind limb or limbs but this usually passes unnoticed by the owners. Later on, the condition comes prominently into notice. The animal drags the affected limb for some distance and carries it forward after a forcible jerky flexion of the stifle joint. When once the animal is made to walk, and after it had walked for some time—say 5 to 15 minutes, depending upon the severity and duration of the affection, the jerky movements disappear. But they appear again when the animal is rested and then put to work. In severe cases, the toes of the hind limb or limbs are found much worn out due to the constant dragging of the leg on the ground.

Treatment.—Treatment of this complaint is simple and effective. As it is believed that the affection occurs as a result of relaxation of the straight ligaments of patella, an irritant solution is injected into the femoro-patellar articulation with a view to set up inflammation and thereby tighten up the ligaments. For this purpose, the animal is cast down with the affected limb uppermost and free, and the remaining three legs being secured fast. Then an attendant holds the affected limb tightly and fully stretches it while the operator inserts a hypodermic needle into the femoro-patellar groove, at a point about 3 inches postero externally to the point of the stifle. 7 c. c. of *Liquor Iodi mitis* is then slowly injected. There is no need to wait for the synovial fluid to flow out before the irritant is injected into the joint. But, in 6 of the cases treated by me, the synovial fluid did flow out. This did not either affect the results of treatment or the reaction produced. But it is very important that the animal is not allowed to struggle while the injection is being given, as there is the danger of injuring the articular surface of bones, which may result in very severe inflammation, pain and lameness.

Usually one injection was found sufficient to effect a cure. But in 2 cases a second injection was necessary to effect a complete cure. In 4 cases in which both hind limbs were found affected, the joints were injected one after the other with sufficient interval between the injections for the reaction to subside.

The owners were advised to irrigate the treated joint with cold water for about one hour daily and also to rest the animals till the pain and inflammation completely subsided and the animal walked normally again. This cold water irrigation of the treated joint or joints, is, I think,

absolutely necessary as it helped the early reduction of the pain and inflammation. Stimulating linaments were also applied externally with friction after irrigation.

A detailed statement of the cases treated by me from 13-6-46 to 29-11-46 is appended below

Class of Animal.	Breed.	Colour.	Age.						Limbs affected.			Number of Injections	Nature of reaction.	Recurrence.
			2 to 3 years.	3 to 4 years.	4 to 5 years.	5 to 6 years.	6 to 7 years.	Above 7 years.	Right	Left	Both			
Bull ...	Local	Black and White.	...	1	...	...	...	...	...	1	...	1	Pain and or swelling on the treated stifle joints but not severe.	Nil
Bull ...		Red	...	1	...	...	...	...	...	...	...	1		
Bullocks ...		Grey	...	...	5	...	4	4	8	1	4	1		
Do. ...		Grey	...	...	...	1	...	1	1	1	...	2		
Do. ...		Red and White	...	...	...	...	...	1	1	...	...	1		
Do. ...		Black	...	...	1	...	...	...	1	...	...	1		

Results of treatment.—All the bovines treated were cured.

Reaction noticed.—The pain and inflammation in the treated joints lasted from 1 to 2 weeks. No severe reaction was noticed in any of the animals treated.

Recurrence.—From report of owners of animals treated and from personal enquiries made, no recurrence of this condition occurred in any of the animals treated.

Heredity.—No definite opinion could be given on this point as the breeding history of any of the animals is not known correctly.

Sequelae.—No outward sequelae has been noticed by me in any of the cases treated.

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AVIAN SPIROCHAETOSIS

BY

S. NURUL MOHTEDA, G.M.V.C., P.G. (MAD.),

Asst. Disease Investigation Officer, (Poultry), Hyderabad- Dn.

This disease in birds is known to the veterinary profession to exist in this country for a long time. It has been the cause of some heavy losses in fowls, although these losses are not so enormous as in Ranikhet disease.

This disease is prevalent in places infested with ticks-*Argas Persicus*. The life cycle of this tick and the nature of the infection need not be repeated here, as they are well known to us. It is however important to bear in mind that this disease makes its appearance only when the ticks get infected with *Spirochaeta* organism. It has been observed that in spite of tick infestation in some localities, birds have remained free of infection. This is attributable to two causes—the first is the non-infectivity of ticks and the second is probably the self immunity developed in fowls by having constant contact with the infected ticks.

It is gratifying to note that the two Government Poultry Farms stationed at Himayatsagar and Patechera, although previously infected with *Spirochaetosis*, are completely free of this infection for the last 3-4 years.

During the course of investigation of poultry diseases, extending over a period of five years, outbreaks of this infection were recorded at many places in this area. Besides fowls, the disease occurs also in geese and turkeys. This article confines itself to the method of control and the treatment of birds affected with *Sp. gallinarum*.

Confirmation of the disease by microscopical examination ensures correct diagnosis. Weakness of the leg was observed to be the characteristic symptom in this affection. (Please see the photograph of two geese affected with *Spirochaetosis*) This paralysis in birds is rightly named by Emell (1945) as 'Tick paralysis' and it should not be confused with true paralysis of fowls as seen in Avian Leucosis complex. This is more of weakness in legs. The birds often sit on their legs. When forced to walk, they show staggering gait and in-co-ordination of movements. Affected geese simply lie prostrate on the ground and are unable to stand on their legs.

Treatment.—Soamin and Atoxyl are the two arsenical compounds in use for the treatment of this affection for a long time. Recently Srinivasan and Sankaranaryanan (1943), Imperial Veterinary Research Institute, Mukteswar, have proved these two drugs to be more toxic than Sulfarsenol. They have advocated the use of this drug both as a curative as well as preventive. I am using Sulfarsenol since 1944 in fowls,

geese and turkeys with very encouraging results. This drug, in addition to destroying the organisms in the blood, improves also the general condition of the birds. The dose of Sulfarsenol is 0.01 to 0.03 gm. depending upon the severity of the infection and clinical condition of the birds. The two geese whose photos appear elsewhere, were treated by injecting 0.03-0.05 gm. of Sulfarsenol intramuscularly. The peripheral blood got sterilised by the first injection but lameness did not improve. The injection was repeated 3-4 times in geese at an interval of one week. They recovered completely from the infection and were seen to return to their normal walk of life after a period of one month. This treatment should be combined with good nursing and nourishing diet. Geese appear to be highly susceptible to the disease. Fowls respond quickly to this treatment.

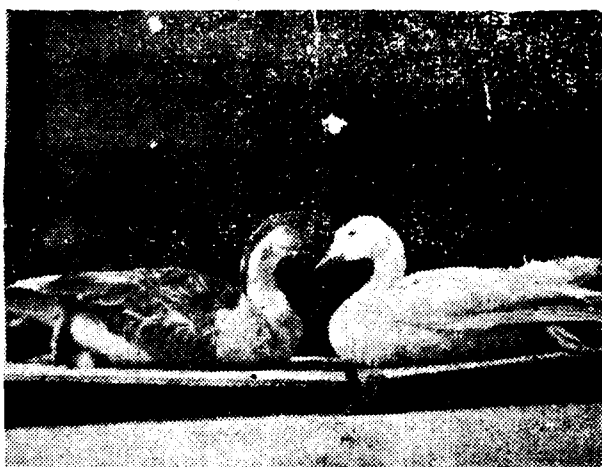


Photo of two geese suffering from Spirochaetosis.

It is to be mentioned here that this drug failed to ameliorate the malady in geese when it occurred in the most acute form, causing a mortality of about 75%.

Prevention and control :—

Advice should be given to poultry owners to eradicate ticks from their places, but, under the present circumstances, this has become more acute and difficult to handle. Owners are unable to adopt drastic measures such as destruction of mud houses and burning of wood equipment.

In these circumstances, the following methods adopted gave encouraging results :—

1. Birds should be removed from the tick infested pens, and put in other places even if within the same premises
2. All the diseased birds should be treated with Sulfarsenol.

3. In-contact birds should be injected with 0.01 gm. of Sulfarsenol intramuscularly, irrespective of sex, breed, age or weight, and observed. If any more cases occur, the above injection should be repeated. By repeating Sulfarsenol 2-3 times in the same flock, no subsequent cases appear. These treated birds may now be shifted to their original place of infection without any untoward results. Immunity, thus induced, lasts for about 12-15 months.

4. Active immunisation can also be undertaken in fowls by injecting them with virulent blood and later treating with Sulfarsenol.

Penicillin, a panacea of the modern age for many diseases, is extensively used in human practice for the treatment of bacterial diseases. This drug has also been claimed by American workers to be used in the treatment of fowl Spirochaetosis. They have also stated that birds treated with this drug, when subsequently exposed to the disease, showed high degree of resistance. It is worth a trial in this affection.

Acknowledgement

I am much indebted to Mr. M. Mahmoodullah, B.Sc., M.R.C.V.S., Director, Civil Veterinary Department, Hyderabad Dn. for his valuable guidance and keen interest in this work.

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CAESAREAN SECTION IN A POMERANIAN

BY

S. J. KHAMBETE, G.B.V.C., P.G., (Mukt.),
Hospital Surgeon, Bombay Veterinary College.

On the 7th of March 1946 at about 10 P.M. an orange-coloured Pomeranian bitch, four years old, was brought to this hospital with the history that the animal, which was full term in pregnancy, started labour pains at about 6-30 P.M., that the water bag appeared by 7-30 P.M. and that there was no further progress. On examination, the animal appeared exhausted. Its temperature was 99° F. Examination P. V. showed that a pup was on its way but, owing to its big head, it could not make any progress. A caesarean section was decided with the consent of the owner.

The operation.—The left flank was selected and prepared for the operation. Nembutal 1 gr. in 5 c.c. was injected intravenously as a general anaesthetic (the weight of the bitch was 5 lbs.). A longitudinal incision 2½" long was made on the left abdomen one inch above the mammary gland and 2 inches below the lumbo-sacral vertebrae. The muscles and the peritoneum were incised in the same direction. The uterus was exposed, held in position and opened with a clean incision. The foetus was instantaneously detached, when it was found to be still born. Through the same opening another pup was removed. This was living but very weak; for want of a suitable assistant, the owner was given this pup to free it up of mucous, etc., and keep warm. There being no other pup, the uterus was carefully mopped with Dettol lotion and sutured with continuous sutures. The peritoneum and muscles, and then the skin were closed with interrupted sutures. A bandage was put on and the bitch was left on the table until the effects of anaesthesia were over. The temperature of the animal after operation was 101.0° F. In half an hour she regained consciousness and was kept undisturbed till 8-30 A.M. next day. She appeared exhausted and was shaky all over. Her temperature was 102.8° F. A small quantity of lukewarm milk was given which she drank. At 10 A.M. some more milk was given and the owner took away the bitch to his home for further nursing. At home she had a good normal motion although the urine was slightly tinged with blood. The temperature was 102.0° F throughout the day. On the 9th March 1947, the temperature was 101.4° F and there was a slight discharge from the vagina. This was cleansed with sterile glycerine acriflavine (1 gm. in 8 ozs.). The operated area (external) was exposed to Infra-red rays for 5 minutes every day. The animal was fed on liquid concentrates. On the 5th day, the temperature rose in the evening and ranged between 103.2 to 104.0° F; the animal was panting and there was a slight discharge from the operated wound. To avoid any complications, a course of Penicillin was given (2,00,000 Oxford Units @ 5,000 Units every 3 hours). The temperature came to normal, the wound became healthy without any discharge and the animal appeared lively and well. On the 12th day the wound had completely healed up, the animal moving freely and nursing the pup.

Twenty days after the operation, the mother and the pup were enjoying the best of health.

A CASE OF MIXED PROTOZOAL INFECTION IN A DOG

BY

A. NARAYANAN, G.M.V.C.,
Veterinary Assistant Surgeon, Srivilliputtur.

Subject.—A grey hound dog, age three years, weight about 60 lbs.

History.—The dog was being used for hunting purposes till a week prior to its admission in this dispensary on 23-6-46. During this week it went off feed and became dull and listless. Consequently it had to be spoon fed with milk.

Symptoms.—On admission, the animal was found to be very weak and emaciated with pallid mucous membranes. The temperature was 103.6° F and the breathing hurried. There were some nodules on the skin.

Diagnosis.—Provisionally diagnosed the disease as Babesiosis and sent blood smears to the Principal, Madras Veterinary College, for examination.

Treatment.—Gave intravenously 0.45 grammes of Novarsenobillon dissolved in 10 c. c. of Aqua Distillata and put on nutritious food and tonic mixtures. It began to show improvement till 29-6-46 when it was taken away by the owner and used for hunting from 1-7-46 to 10-7-46.

The blood smears taken on 23-6-46 revealed *Trypanosoma evansi*. When the dog was brought to the dispensary again on 13-7-46 it was only slightly indisposed and its temperature was 102.4° F. Blood smears were taken for examination and the owner was advised to get a tube of N.A.B. as neither Naganol nor Antrypol was available. He was reluctant to purchase the drug and took away the dog. He, however, returned with an ampoule of N.A.B. 0.4 grammes on 22-7-46 with the animal in a very bad condition. It had become very much emaciated and was unable to stand; the right eye was swollen, congested and profusely lachrymating.

N.A.B. 0.45 gms. dissolved in 5 c. c. of Aqua Distillata was given intravenously and this was repeated on 25-7-46 in 7 c. c. of Aqua Distillata.

Blood smears taken on 13-7-46 were positive for *Trypanosoma evansi*. Incidentally, it may be mentioned here that there was no outbreak of Surra in the locality.

Blood smears were taken on 26-7-46 after the above two injections of N.A.B. and they revealed a heavy infection of *B. gibsoni*. Slow and progressive improvement was noticed after the two injection of N.A.B. but, thereafter, there was a set-back. The temperature went up to 103.2° F. and

the dog became dull, depressed, and off-feed; it began to lose condition rapidly. Blood smears were again sent for examination. Those sent on 30-7-46 revealed *B. Gibsoni* and very few *Hepatazoon Canis*; while those taken on 3-8-46 showed a very heavy infection of *B. Gibsoni* and a few, *evansi*. There were no ticks on the body of the animal to be sent for examination.

The dog was sinking fast and collapsed on the early hours of 10-8-46. Unfortunately it was not possible to conduct a postmortem examination.

Summary.—An interesting case of a mixed infection of *Trypanosoma evansi*, *Babesia Gibsoni* and *Hepatazoon canis* in a dog is recorded.

Acknowledgement.—I am much indebted to Sri K. R. Lakshminarayana Iyer, District Veterinary Officer, Ramnad at Madura, for his valuable instructions given to me from time to time, when the case was under treatment.

Our Mail Bag

Mr. B. Mohan Rao, Touring Veterinary Assistant Surgeon, Ramachandrapuram, records the successful treatment of a suspected case of H.S., in a Cross Sindhi Bull Calf, aged about 10 months, with M & B 693. The animal had the typical symptoms of H.S., viz sudden onset, temperature 106.4° F., swelling in the throat and neck, frothy salivation, breathing stertorous and tongue protruded.

The drug was given intramuscularly and also orally for four days morning and evening and the case recovered. The author concludes that, though the treatment is costly, it is successful.

Dewan Faizuddin Ahmed G.B.V.C., Veterinary Inspector, Surma Valley, Silchar, Assam, reports of a case of suspected Anthrax treated successfully with subcutaneous injections of Camphor in oil. The first dose contained two drams of Camphor in two and a half ounces of Olive oil, while the second dose, given after an interval of about 6 hours, contained only one and a half drams of Camphor in 15 drams of Olive oil. The symptoms which were not very characteristic of Anthrax were as follows: Animal recumbent and unable to get up, swelling at the sternum, bloated abdomen, eyes blood shot and in tears, m.m. congested, bowels costive, temperature 105° F. pulse feeble. No blood examination was made but deaths in previous years in the same place and with similar symptoms were confirmed for Anthrax on examination of blood smears.

Mr. Khaja Hossain, Assistant Veterinary Surgeon, Jalna, Deccan, reports two cases of Imperforate Anus—one in a kid and the other in a calf—which responded well to the usual surgical treatment. After the preliminary cleaning of the part, the protruding skin at the site of the anus was grasped with a pair of forceps and a round piece of skin corresponding to the size of the anal orifice was severed with curved scissors. This was followed by the immediate passage of faeces and gas and, after a further thorough cleaning of the part, the mucous membrane was stitched to the skin with six interrupted sutures. Healing was uneventful.

* * * *

Mr. M. J. John, G.M.V.C., Veterinary Assistant Surgeon, Madanapalle reports a case of Ascitis in a cross bull-terrier dog cured with two injections of Mersalyl. The case was first treated with Calcium Chloride in 10 grain doses for a week orally but without any effect. The animal developed dropsy of the leg and jaw. After the first injection of Mersalyl, the animal passed plenty of urine and the dropsy disappeared the next day. A second injection of Mersalyl was given on the fourth day and the ascitis disappeared two days later. The dog has been under observation for nearly ten months after the treatment and has maintained good health.

Association News

THE PUNJAB SUBORDINATE VETERINARY SERVICE ASSOCIATION

Resolutions passed at the 12th Annual General Meeting held on the 31st December at Amritsar

1. This Association reaffirms the resolution No. 2 passed in the extraordinary general meeting of the Punjab Subordinate Veterinary Service Association held on the 1st June 1946 which is reproduced below:—

“Resolved that the Punjab Subordinate Veterinary Service Association very much regret to find that the revision of the scale of pay of the subordinate services of the Punjab Government in their letter No. 564-FD-46/4028 dated the 23rd February 1946 has been wholly unsatisfactory and very much below the expectations of the members. In the case of the Veterinary Assistant Surgeons the old scale of pay Rs. 100—10—300 which was sanctioned in 1924 has been restored in place of the present grade Rs. 80—7—225. In the case of the Veterinary Assistants there has been

absolutely no enhancement and the old grades of Rs. 60/-75/-90/- has been converted into a time scale of Rs. 60—5—90, which does not mean any improvement in the grade. The case of the L. V. Ps. working as 3rd grade Veterinary Assistants has been sadly neglected and totally ignored. This has caused a tremendous amount of heart burning and discontent amongst the already low paid and overworked subordinate staff of civil Veterinary Department, which is the backbone of the agricultural industry. The feelings of the staff if not redressed within a reasonable time are likely to grow in intensity resulting into some undesirable measures in the form of suspending work or later if need be to go on a strike if and when approved by the Punjab Subordinate Services Federation :—

Under the circumstances it is proposed that :—

- (i) In view of the great injustice done to the L. V. Ps. working as 3rd grade Veterinary Assistants by not giving them the grade of Veterinary Assistant Surgeons when their contemporaries in the Agricultural Departments were all given the grade "A" of the Agricultural Assistants enmasse and even now this long standing grievance has not been redressed with the revision of the scales of the subordinate establishment, thus adding an insult to injury, it is requested that all such L. V. Ps. working as 3rd grade Veterinary Assistants be absorbed as Veterinary Assistant Surgeons. This indiscrimination between the groups holding exactly the same qualifications and performing the same duties is absolutely unreasonable and unjustified and is causing a tremendous amount of heart burning and discontent amongst this batch of young graduates.
- (ii) All G. P. V. Cs. working as Veterinary Assistants be given the grade of the Veterinary Assistant Surgeons because they are performing the same duties. The G. P. V. Cs. have put in many years of service and have built the department with their blood. If some new time scale is proposed for them it will not help them much since they will retire in the near future without getting the benefit of the maximum of that scale. It is only the initial fixation of the pay in a better scale which gives them some relief and for that purpose the grant of the grade of Veterinary Assistant Surgeon for them would be only appropriate and just.
- (iii) The grades of the Veterinary Assistant Surgeons be improved to the grade Rs. 150—10—250—15—400, as the present grade of Rs. 100-10-300 was sanctioned in 1924 when the economic conditions and cost of living were very easy as compared to the present day hard conditions when the price of the necessities of life have been enhanced to 500 per cent,

- (iv) In any scheme of revision of pay to be acceptable to the staff of the Punjab Veterinary Services, pay in each individual case should be fixed at a stage corresponding to the stage of pay drawn by each individual in the existing scale of pay. This due consideration to the length of service is absolutely essential in the case of subordinate establishment of this department, since some members of the staff have been working at a ridiculous pay of Rs. 51 per mensem, for a long time and the way in which the fixation of the pay has been effected in the present revision does not help them much if the period of length of service is not taken into account.

2. This Association requests the Director, Veterinary Services, Punjab, to kindly reconsider and cancel the orders issued in the memorandum No. 112-116/C/33, I. G. dated 10-8-1946 to the Circle Superintendents, and the head-quarters leave on the gazetted and local holidays may kindly be granted to the Veterinary staff as usual, as the Veterinary Hospitals are always required to remain open even when the staff is granted leave or is on tour.

3. This Association, reaffirms resolution No. 5 passed in the 10th Annual General Meeting and request the Director, Veterinary Services Punjab, to kindly move the Punjab Government to graciously order for the closure all out door hospitals and dispensaries for the whole day on Sundays. It may further be mentioned here that the medical dispensaries are also closed on Sundays and the Punjab Government have even recognised the right of enjoying the rest at the weekend for the private employees by enforcing the "Trade Employees Act". Such steps will also afford the subordinate veterinary staff to take rest at the weekend which is recognised a necessity in the modern civilised world.

4. It is resolved that this meeting of the Punjab Subordinate Veterinary Service Association requests the Director, Veterinary Services, Punjab, to urge upon the Punjab Government to ear-mark certain squares of land for the Veterinarians (retired or in service) in the Post War Reconstruction Development Schemes for carrying out breeding operations.]

This meeting is of the further opinion that the land given to the Grantee Farms be also utilised as stated above to ensure successful breeding operations.

5. With reference to the resolution No. 9 of 1941 and the order received with respect of it, this Association again requests the Director, Veterinary Services, Punjab, to kindly permit the subordinate Veterinary staff to engage in private practice subject to the conditions imposed on the Deputy Superintendents in the 5th paragraph of the Veterinary Circular

No. 5. This will bring us at par with the staff of the other provinces and states, keep up the prestige and honour of the department and afford us an opportunity to add to our income though small but legitimate in these hard days. In this connection your kind attention is further invited to the Punjab Government letter No. 108-D dated 7th January 1926, addressed to all the Veterinary Inspectors and Veterinary Assistants in reply to this demand which runs as follows "That is not considered advisable in the interest of Veterinary work in the province to allow private practice at the present moment." It can be safely concluded from this reply that the privilege is overdue and may kindly be granted even now, when the province is leading the rest of India in other Veterinary activities.

6. It is resolved that with a view to avoid least injustice to the the professional staff, the Government be requested that all promotion, selection for all special trainings and new appointments in this department be given to such incumbents who possess veterinary degree or diploma as an essential qualification.

7. No extra allowance is given to the Veterinary Staff posted on special duties e.g., on the control of contagious diseases in the British Punjab or Punjab States. In view of the increased expenditure of living it is necessary that some compensatory allowance is sanctioned. This Association requests the Director, Veterinary Services Punjab to move the Punjab Government to sanction a special duty allowance for the Veterinary staff at the rate of 50 per cent of their pay if deputed outside the British territory and 25 per cent of their pay if deputed in the British territory away from their original place of posting.

8. This Association is of the opinion that for the posts of Assistant Dairy Surveyors, Veterinary graduates with post-graduate qualifications in Dairying should be given preference over the people who are I. D. Ds. or B.Sc. in agriculture.

9. This Association requests the Director Veterinary Services, Punjab to move the Punjab Government to provide a peon to each of the Veterinary Assistant Surgeons and Veterinary Assistants in the province as is being practiced in the United Provinces with a view to increase the efficiency of their work. It may be mentioned here that all the touring subordinate officers of our status have been provided with peons.

10. It is resolved that in order to make the running of the department more efficient and effective the Director, Veterinary Services, Punjab, may be requested to appoint a committee consisting of nominated members of the Punjab Subordinate Services Association and a few of the departmental officers to consider difficulties arising out in the discharge of the routine duties of the subordinate staff and find out means to solve them.

11. This Association requests the Director, Veterinary Services, Punjab, to please favourably consider the resolution No. 6 passed in the 8th Annual General Meeting, and resolution No. 7 passed in the 6th Annual General Meeting, the consideration of which was deferred till after war (vide his memo. No. 15490/55 II-G. dated 18-11-1943 and 17302/55 II-G. dated 7-12-1943. The copies of the resolutions referred to above are enclosed herewith for ready reference.

(6th Annual Meeting)

Resolved to request the Government to enact a legislation incorporating in it all the points mentioned in para 14 of the Veterinary Circular No. 4 in order to keep an effective control on the spread of contagious diseases amongst animals.

(8th Annual General Meeting)

Resolved to request the Director, Veterinary Services Punjab, to arrange for the publication of the Punjab Veterinary Manual for the benefit of the staff, and to consult the Association before its final approval.

12. This Association requests the Director, Veterinary Services, Punjab, to kindly grant provincial permanent advance from Rs. 15 to Rs. 100 to the incharge of Veterinary Hospitals who receive sera and vaccine and distribute the same.

13. This Association requests the Director, Veterinary Services, Punjab, to kindly arrange for the supply of the standard books on Veterinary Medicine, Surgery, Materia-Medica, and animal-husbandry to each of the Veterinary Hospitals in the Punjab out of the Special Development Fund to keep the professional knowledge of the staff fresh.

14. With a view to increase the status of the Veterinary profession in the eyes of the public, the Director, Veterinary Services, Punjab is requested to move the Punjab Government to enforce the registration of all the qualified Veterinarians like the Medical graduates.

15. As the present system of disbursement of pay amongst the Veterinary staff i.e., through the District Nazirs is very inconvenient to the staff resulting in the prolonged delay in payment, the Association requests the Director, Veterinary Services, Punjab to kindly arrange the disbursement of pay through the offices of the Divisional Superintendents.

AMRITSAR, }
17-2-1947 }

J. S. BHALLA,
Honorary General Secretary.

Correspondence.

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

Impressions on the Working of our Associations in India.

I must express my heart-felt admiration to our enthusiastic General Secretary of the All-Indian Veterinary Association who had the courage, after a long absence of ten years, to announce an All-Indian Veterinary Conference along with the Diamond Jubilee Celebration of the Bombay Veterinary College sometime during the next December. In his appeal, in the September issue of the *Indian Veterinary Journal* he specifically mentioned that the conference could not be held regularly due to various causes. What those causes are, are very well-known to me as a result of my observations for the past 5 years and I personally think that there is something wrong somewhere among the veterinarians in India. That something I would like to express here for the information of our professional members so that they may take more interest in future to strengthen our All-India and Provincial Associations. We cannot afford to sleep over the matter when, in front of our eyes, our sister profession—the medical—has far advanced in respect of holding their conferences annually without fail.

One of the greatest draw-backs that I find among us is that we are not properly organised. The spirit of co-operation and enthusiasm are entirely lacking in us. Interest towards the advancement of the profession and efforts to uplift our professional and social status are conspicuous by their absence. Poverty among the large majority, except a favoured few holding higher jobs, is another hinderence to our progress and popularity. Absence of eminent and efficient leaders to lead us and to guide us through the proper path at the right time with right earnestness is a real curse to us even in these days of scientific advancement. Unity among the service members on account of the differences in Government service as Gazetted and non-Gazetted officers, is another cause of our degeneration and degradation. What is the cause of all these state of affairs? The main reason is that we, as a profession, depend entirely on Government service. As a result we are very badly handicapped, lose all courage, originality and independence and remain ever spineless and voiceless till we retire and die as slaves. We are not allowed to stand independently, look boldly and talk freely and express any opinion fearlessly before any superior officers fearing that our future may be damned in the service. We must do what we are told to carry out, nothing more and nothing less. In the service if there is any slight variation in our official duties the result will be punishment of some

description either a transfer, suspension or fine and an entry into the confidential register. Such professional men having no back-bone seldom successful in holding and organising an association or conference in its true sense. On the other hand if there are independent veterinary practitioners as in the medical and veterinary profession of European countries and America, things would have been otherwise. The National Veterinary Medical Association of England, the American Veterinary Medical Association and the Indian Medical Association are clear examples of organised, powerful bodies holding their meetings and conferences in Provinces and Districts. Besides, these associations are organised and controlled by eminent men of outstanding ability who are in a position to collect funds for strengthening their profession and up lifting their status.

It has been my sad experience ever since I came to this country Malaya to observe that our profession has no place any where and we are looked down upon with contempt however much we may try to cry out the usefulness of our profession to increase and to improve the economic condition of our dear Motherland. Let us atleast now try and start with understanding and goodwill to remove this chronic blot which affects us all equally irrespective of one's position in service.

In order to build this up with a good foundation it is necessary to begin from the bottom by starting District Associations in all Provinces by the combined co-operation of all Veterinarians of the District with the help of the respective District Veterinary Officers. These associations should meet every quarter with the object of discussing important and interesting professional work carried out by each member and preparing planned programmes for future work which will include improvement of animal husbandry, prevention and suppression of contagious diseases and the general welfare of the veterinarians. This is a good method of popularising the departmental work among the people. It is the D.V.Os who should take the initiative and interest to form such organisation and influence the Officers under him to join them for their own interest. It is more devoting all their time for checking inventories and writing pungent remarks about the maintenance of the Veterinary Assistant's books and registers and about utilising a little more of kerosine oil or even of water. In my opinion this cannot be considered as veterinary work and therefore, the D.V.Os should direct their attention to more useful work. The District Associations can also have their annual conferences by inviting all veterinarians and those agriculturists interested in them. During such occasions a cattle show will be of immense benefit.

Provincial Associations exist all over India though they are not functioning actively and regularly, except perhaps Madras Province. At times reports and resolutions passed in such meeting, used to appear in the columns of our *Journal* in order to justify their existence. In the Punjab

I find with great surprise there is an association which goes by the name of 'Veterinary Subordinate Association' which, I am of opinion is unnecessary in a well advanced Veterinary Province and it is highly necessary in the interest and status of the profession to omit the word Subordinate and make it a well organised Provincial Association.

Madras is a leading Province to hold annual conferences regularly and I had the pleasure to attend to one of the conferences as soon as I arrived in this country. Even here I observed certain defects in the method of running the show every year. It seems to me that this conference is purely official simply because the delegates, office bearers, chairman and others are all service men except a few retired officers and a single private practitioner in the person of the Editor of the *Indian Veterinary Journal*. In such a gathering when the Head of the Department presides, no one will have the courage to enter into any controversial discussions affecting the profession; the result is we lose our initiative, originality and independence to express freely and fearlessly. Any capable man of ability whatever qualification he possesses must be selected to preside on such occasions so that every one has a free say in all matters. I would also like to see that the Presidentship of the Association is changed every year so that every deserving man may get his turn. The present arrangement of having one man every time is undemocratic. We should not be selfish in having the annual conference every time at Madras to suit the convenience of some city dwellers. I am sure that if the venue of the annual conference is shifted every year to important district centres the departmental activities are likely to become more popular and the profession will have enhanced its reputation among all classes of people with the result that the stigma that is now attached to our work will soon disappear. If the Medical Association can have their annual meetings in different centres there is no reason why we should not have ours away from the city of Madras.

There are so many important questions to be discussed in the coming provincial or All-Indian Veterinary Conference as 'Post-War Reconstruction Plans'. The following are some of my suggestions which may be taken by any one interested in the welfare of the profession.

Change of Designation.

The present designation of V.A.Ss must be changed into Assistant Veterinary Officers to be in consonance with the designation of the District Officer who is called a D.V.O.

The designation of the present veterinary department should be changed into Animal Husbandry Department which is more dignified and appropriate when the department has been entrusted with the animal husbandry work which includes breeding, rearing, feeding, treatment of diseases, prevention and suppression of contagious diseases and research work.

The present D.V.Os in charge of districts should be allowed to be in charge of District Head Quarter Hospitals in addition to their inspection duty as the D.M.Os of the medical department, so that they may be able to be in touch with professional work also, instead of unnecessarily wasting their time in shadowing the poor V.A.Ss. work of inoculation, castration, bull inspection etc. If the D.V.O. is helped at his head quarters by an experienced V.A.S., he will have plenty of time to run up to the neighbouring institutions for some inspections to see how they progress. Some of the present D.V.Os may not like this suggestion because they may think it is below their dignity to work in a hospital. If the highly qualified and capable medical officers can be in charge of Hospitals there is no reason why our senior men should refuse such a position.

The proposed Deputy Directors

There should be 3 such officers, one in-charge of the animal husbandry another in-charge of contagious diseases and disease investigations including inoculations and vaccinations and another for inspection of veterinary institutions. Their head quarters should not be in three divisions but should be in Madras attached to the Director's office so that they may be available to form a board where all veterinary matters can be discussed and planned programme prepared. The Principal of the veterinary college who is in-charge of education and who should be a man of out-standing ability and academic qualification should also be included in the Board so that all the four with the Director may have sufficient co-ordination in the efficient discharge of their duties. There is nothing like all putting their heads together for any proposal of improvement. These four officers should also be in-charge of administration in their respective sections and by doing so part of the administrative work of the D.V.Os may be minimised. They may be allowed once in a while to give lectures to the students of the college of their experiences and observations in the field.

There is another branch of veterinary work which is as important as any other in point of view of Public Health work. It is the duty of the municipalities to tackle the important question of meat and milk inspection with the consultation of efficient veterinarians experienced in such work. I have already brought this question to the notice of the last popular Ministry through the medium of this valuable journal and it is not my present intention to repeat them. So far nothing has been done and no one has taken any interest towards the improvement of this section. I fully hope that the present Ministry will lose no time in taking this up.

These are some of my humble suggestions that I would like to express for the information of the authorities in power and of the general public who are interested in the welfare of our country.

Trivandrum.
9-12-46.

M. V. PILLAI,
G.B.V.C.

A Veterinarian Proceeded Overseas for Study and Experience.

Mr. A. E. Kulkarni G.B.V.C., son of E. R. Kulkarni, Assistant Director of Veterinary Services, Bombay Province, Poona has proceeded to Ireland for advanced study in race horse breeding.

He graduated from the Bombay Veterinary College in 1942, and joined the Civil Veterinary Department of the Bombay Province. After a service of about three years he resigned the post as he did not find in the department any scope for the development of his cherished ideas and joined the race horse stud farm at Manjri near Poona.

He has proceeded to Dublin for advanced theoretical and practical training in race horse breeding. He also intends to attend the courses on the subject at Cambridge and Edinburgh. On return he will resume duty at the Manjri Stud Farm and work under the able guidance of Mr. Jahanbir R. Supariwala.

R. R. TAVARGERI, G.B.V.C.,
Divisional Veterinary Officer, Poona.

CATTLE DEVELOPMENT IN THE KUMAON HILLS

Cattle industry in the Kumaon Hills is still in its primitive stages though it is estimated that the three districts of Almora, Garhwal and Nainital, excluding the Tarai and Bhabhar *Ilacas* in the plains contain roughly of over a million head of cattle in addition to other livestock like sheep, goats, pigs, and poultry. These cattle are very poor in stature and of low fertility. They mature very late, and yield very little milk. The average milk yield of a hill cow hardly exceeds a pound and a half per day for about 150 to 200 days of lactation i. e. only to about 300 pounds in the whole lactation. Thus, during the whole of her life time of 15 to 20 years, she calves four times and gives a total milk yield of about 1,200 pounds which is perhaps less than half of a single yearly-yield of an ordinary foreign milch cow and about the annual average of the Indian plains cow. Consequently, the *per capita* consumption of milk in these parts is only about 6 oz. per day. These animals hardly get any feed beyond the natural grazing; nor are there any special fodders grown for them. The only concentrate feed that is given and that too occasionally to the dam is for a few weeks after calving. At that period, the milch animals may get a little hay and some green grass from the jungle. These are only occasional luxuries for the animal and they have ordinarily, to depend on natural grazing alone.

The question therefore is, what practical steps should be taken to improve the cattle of these areas so that maximum results may be achieved within a reasonable time and yet be within the competence of the farmer. Further, the results attained must be of a lasting nature and permanent in character.

Improving the hill cattle purely by selection, line-breeding and in-crossing though commendable in many respects is necessarily a very slow process. It should be borne in mind that the improved animals should be able to stand the rigors of the hill climate and should also have their high digestive capacity. Importation of well known breeds of cattle from the plains and grading up the local cattle appears to be the only feasible sound proposition. The half bred bull of the mating of a hill sire and imported high milk yielding dam would carry his mother's high milking capacity. If he were mated to a half bred daughter of a plains bull of recognised breed and a good hill cow, both of these half breeds having in their inheritance the characters for high milk yield, resistance to disease and early maturity on both the sides would pass them on to the progeny.

It will then be possible to evolve a type of cattle which can graze in the hills almost all the twelve months of the year, provided greenish grass is properly managed and regulated course, with improved feeding and management, the problem of cattle improvement will no more remain a problem and would be easily solved. The animals would come to maturity early, conceive and calve regularly and above all yield a fairly good quantity of rich milk. The value and usefulness of the cow will increase manifold in a short period of time.

With this end in view, small scale demonstration farms of animal breeding and dairying on modern co-operative lines under expert supervision might be very timely and prove the foundation stone in the history of cattle development in the Kumaon. The field for work in this direction seems very fertile as the hill people are naturally inclined to be great cattle lovers and every single agriculturist owns an appreciable number of such livestock. The only thing needed is a real incentive coupled with substantial help in the proper direction so that with small capital and limited means they are able to effect improvement in the existing breeds through strains of improved cattle of recognised breed in the plains.

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

Sir,

Carcinoma of the Horn in Bovines

On 29-6-46 a bullock suffering from what is clinically diagnosed as 'Cancer' of the right horn was brought for treatment. It was heavily infected with maggots and was treated in the following manner.

First day, the horn was amputated, the bleeding arrested by actual cautery and then the wound dressed with Liquor Arsenicalis.

Second day: Dressing was repeated. An injection of Tartar Emetic 15 c.c. of a 3 percent solution was given intravenously.

Third day: Dressing was changed and replaced by saturated solution of Mag. Sulph. Lugol's solution 30 c.c. was given intravenously.

Fourth day: The wound was dressed with saturated solution of Mag. Sulph and Tartar Emetic 20 c.c. of a 3 percent solution was given intravenously.

In this manner, 4 injections of Tartar Emetic 3 percent solution, up to 25 c.c., alternated with 4 injections of Lugol's solution 30 c.c. were given intravenously. The wound was now daily dressed with saturated solutions of Mag. Sulphus.

On the 10th day of operation, there was a great improvement in the condition of the patient. The wound was very clean and was showing signs of healing. Advised dressing with S. S. of Mag. Sulph after cleaning well with Pot. Permanganate 1 in 1000. The owner did accordingly and after a period of 24 days he reported the case to have been cured.

The same treatment was adopted in another case with equally satisfactory results.

Now I would request my professional brethren to use this line of treatment in cases of 'Carcinoma of Horn' in Bovines and record their experiences through our most esteemed journal 'the Indian Veterinary Journal'.

R. N. KUNWAR, G.V.Sc.

25-8-46. i/c Civil Veterinary Hospital, Phulpore, P. O., (Allahabad).

The Mysore Veterinarians.

The sympathies of every Veterinarian in India are with the Veterinarians of Mysore. Having once enjoyed the great reputation of being the most advanced and well-paid service in India, the Veterinarian in Mysore is now probably the lowest paid, while the duties expected of him have increased enormously, making his life, unenviable. When all the rest of India was paying much less to the Veterinarian, Mysore was proud to proclaim that it was having a decent graded scale of pay i.e. 60/5/150 up to 1934.

In 1934 the scales were reduced to Rs. 50-5/2-90 and the Veterinarians (like their patients) mutely carried on till 1945, with the terrible increase in Cost of living. When the department was separated from the Agricultural Department in July 1945 and made independent, a ray of hope was seen and with the appointment of Dr. P. M. N. Naidu, as the Head of the Department, an era of progress and prosperity has dawned in Mysore. The scales of pay of the Veterinarians were raised to Rs. 60-5-150. This was the grade enjoyed before 1934. Although this is slightly better than the old grade, it is definitely insufficient to meet the expenses of a Veterinarian who has generally no other sources of income, like his confreres in the Medical Department.

The Popular Ministry in Madras has recognised the need and the worth of the Veterinarians and has recently sanctioned the scale of Rs. 120 to 250. The Punjab pays from Rs. 100 to 300 while, I am told, the Bombay Government pays Rs. 120 to Rs. 200.

The Mysore Veterinarian has carried on his duties mutely for several years without adequate remuneration. It is no exaggeration to say that a large number of them are heavily indebted due to the present soaring prices. He has to perform similar duties like his colleagues in other provinces, if not more exacting ones. The matter of his pay, prospects and allowances should be taken up as a priority problem as the programme of development of animal wealth is blended with the willing and enthusiastic co-operation of the Veterinary staff.

The Veterinarians in Mysore and their colleagues outside would be grateful to Dr. P. M. N. Naidu and the Government of Mysore for raising the pay and status of the Veterinarian to an adequate all India level, without much loss of time.

K. S. KRISHNAPPA, G.M.V.C.

Sir,

I beg to request you to be kind enough to give a little space to the undermentioned matter, in your *journal* under the heading "Correspondence"

It has appeared in the *Indian Veterinary Journal* Vol. XXIII, January 1947, under the heading "Extracts" where in Mr. Rajanikant Hazarika writes for the need of a Veterinary College in Assam Province. He has mentioned therein "It may be suggested that the standard of education in the proposed College should be the same as that of Bombay. It may subsequently be raised to the standard of Madras or Lahore."

It seems that Mr. Rajanikant Hazarika is under the impression that the standard of education in the Bombay Veterinary College is lower than that of Madras or Lahore. I wish to bring to his notice that Bombay Veterinary College is affiliated to the University of Bombay and is preparing students for a degree course in Veterinary Science, after a full fledged training for four years wherein Inter Science (B-Group) is the basic qualification for admission to the College. This bears testimony to the fact that the standard of education in Bombay Veterinary College is equal to that of Madras and Lahore or any other College in India.

Bombay,
Dated 22-2-47

G. R. MURKIBHAVI, G.B.V.C., P.G., (Poultry)
Lecturer, Veterinary College, Bombay.

INJUSTICE TO VETS.

Among the many curious and various ways of administration of the Civil Veterinary Department, Madras, the most striking is the introduction of G. O. No. M. S. 3439, Development 44 dated 8th August 1944 debarring Veterinary Assistant Surgeons above the age of 50 from promotion to the Madras Veterinary Service. This, in the first instance, is constitutionally and legally objectionable and acts adversely against and is prejudicial to the interests of the Veterinary Subordinates, who were recruited under different conditions and circumstances and entirely depended upon the prospectus and assurances that were issued from time to time viz. that the Graduates of the Madras Veterinary College will be eligible for promotion to the gazetted appointments. This G.O. has effectively shut out several of the Senior Veterinary Assistant Surgeons who are post-graduate trained, field experienced and would have made District Veterinary Officers. Is it the fault of these Senior Officers that they were not promoted before they attained the age of 50.

It has been the convention of the Department that only persons who have undergone the post graduate course should be eligible for promotion

even to the selection grade; and even for this post graduate course training, only persons with good record were selected. Having selected men in this way and given the post graduate training at State cost, is it fair to deny these officers when they are above 50 years of age?

Is this conducive for contented service and efficiency?

Such a G. O. is not in force in several departments as Police, Excise, Forest, P.W.D., Agriculture, etc., etc., where the duties of a gazetted officer are more strenuous than those of District Veterinary Officers.

The work of a Veterinary Surgeon in a hospital is a hard work and if one is fitted for such work how could he be unfit for a less strenuous work? Age cannot be the sole criterion for judging a man's capacity for work. As everybody knows some men are old at forty, while some are young even at sixty. As such, age should not be a bar for promotion.

Where then is the necessity for this G. O. for this young Expanding Department which has many post-war plans in view? Is it not probable that this G. O. may be responsible for the few admissions in the Madras Veterinary College during recent years while there is great rush for admissions in the other professional Colleges?

In the last Conference of All India Veterinary Association Madras Branch held at Madras, Rao Sahib K. Kailasam Aiyar, the retired Principal of the Madras Veterinary College, in his presidential address also drew attention of the Government to this injustice.

Now that there is popular Government with a popular Ministry it is hoped that the Government will be pleased to reconsider the matter and render justice to the Veterinary Subordinates who are now subjected to much humiliation at the hands of their junior officers.

Salem,
23-12-46.

T. R. RAJAGOPALA RAO, G. M. V. C.
Retired Veterinary Assistant Surgeon.

Extracts

Extract from The Review of Applied Entomology, Vol. 34, Ser. B. Part 5. pp. 86, May 1946.

Thomas (I) and Williams (G). *The Control of Warble Flies with Nicotine Sulphate*-Welsh J. Agric. 18 pp. 79-80, 2 refs. Cardiff, 1945.

A dressing composed of 2 fl oz. nicotine sulphate, 1 lb. hydrated lime and 1 gal. water was for a time recommended by the Ministry of Agriculture for the control of larvae of warble-flies (*Hypoderma*) in cattle in

England and Wales; but the recommendation was withdrawn as cases of severe poisoning of the cattle were recorded; some of the treated animals became unconscious and frothed at the mouth and a few had to be slaughtered. In experiments by the authors, this dressing was tested on about 200 cattle on five farms in Wales. On four of the farms, a first application was made in late March and a second 32-34 days later. The scabs were removed with a hard brush dipped in the dressing and it was then applied with fine sacking at the rate of 1 gal. for 30 cattle. The animals were slightly affected by it, and a few were lying down a short time afterwards, but, they did not seem distressed. When the second application was made, the first was seen to have been effective, many dead larvae being found half way out of the holes. Some of the animals became extremely agitated when treated for the second time, especially if a little of the dressing entered the cavities left by the dead larvae; a few shivered, violently but the reaction was not nearly so severe as that described by other workers. At the fifth farm, the animals were only slightly agitated by one application of the dressing, but the man who applied it suffered from headache and vomiting and was confined to bed for a few days. He had been affected by a nicotine dust some years previously. It is concluded that a nicotine-sulphate dressing may poison both animals and workers unless precautions are taken. It should be applied in the open air or in an open shed and to the warbles only, and a mop should be used to prevent hardening and scaling of the skin of the hands.

Pathology and Pathogenesis of Experimental Fluorosis in Cattle

Bone Lesions in Cattle fed on a diet adequate in Calcium and low in Phosphorus.—By P. G. Pande, M. Sc., M.R.C.V.S., Izatnagar.

1. The osseous changes, resulting from a high fluorine (NaF) intake in mature hill bulls kept on a diet adequate in calcium and low in phosphorus, have been studied, and the gross and microscopical lesions in certain of the bones have been described.

2. In connection with pathogenesis, it is pointed out that the ingestion of fluorine causes only a mild disturbance in Ca and P metabolism, due probably to reduced appetite of the animals in an advanced stage of cachexia and consequent inefficient utilization of food.

3. The pathological changes produced, seem to be influenced by the calcioprive and the osteogenic effects fluorine.

4. Although osteoporosis of the metaphyses of long bones may be said to represent a stage in the development of the final pathological picture, the lesions do not entirely correspond to classical osteomalacia. Certain hyperplastic changes in the diaphysis and metaphysis of the long bones and ribs indicate endosteal activity and the resulting lesions are more suggestive of osteosclerosis than of osteomalacia.

Indian J. Vet. Sci. and Anim. Husb. 14., 21.0

Occurrence of Rickettsia Conjunctivae coles in Goats in the Punjab.—By M. Abdussalam Lahor

1. Conjunctivitis of goats, associated with Rickettsia, has been recorded apparently for the first time in India.

2. The lesions observed closely resembled those of trachoma and were, perhaps, a sequel of some more acute stages of the affection suffered by the goats during their kidhood.

3. The method of examination and morphology of the causal organism has been described; it seems to be morphologically identical with Rickettsia conjunctivae Coles.

4. Another rickettsia-like organism morphologically identical with one described by Coles (1931, a) was also found in two of the goats. Its presence did not seem to add the pathogenicity of R. conjunctivae with which it was associated.

Ind. J. Vet. Sci. Vol. XIV, Part IV.

1. Generalized Vaccinia in Buffaloes.—By M. Maqsood. Five cases of generalized vaccinia in milch buffaloes are recorded with eruptions developing practically all over the body surface.

2. The General symptoms were more severe and prolonged than those of classical cow-pox, in which the symptoms are benign and the lesions localized.

3. All the cases occurred at a time when numbers of people were being vaccinated against small-pox and at a time when this disease was prevalent. The source of infection in the animals could thus be readily explained.

Ind. J. Vet. Sci. Vol. XIV, Part IV.

Transmission of Rinderpest by expired air.—By J. A. Idnani. Hill bulls infected with a virulent strain of rinderpest virus are capable of transmitting the disease by the expired air when exposed to healthy animals. Under the experimental conditions used a minimum of six hours exposure and a distance of six feet between infected and healthy animals were necessary for positive results. The breath of bulls artificially infected with the virulent strain is infective by the fifth day. When, however, air in a semi-enclosed space charged with virus, a sufficient quantity to infect may be taken up in at most 15 minutes by a susceptible animal breathing that air.

Rinderpest was not transmitted to bulls under normal conditions either by a less virulent strain or by goat-adapted virus.

Ind. J. Vet. Sci. Vol. XIV, Part IV.

Studies in the Bacteriological Quality of Milk Produced and Handled under different conditions in an Indian City (Bangalore).—By H. C. Verma, Zal R. Kothavalla and E. V. Seshacharyulu.

(a) The bacteriological quality of milk produced and handled under different conditions in Bangalore has been studied by the application of methylene blue reduction test and plate count. A total of 1340 raw milk samples of only morning production and supply has been examined. Samples

of milk taken on production side were from (i) individual animals and herd (cow and buffalo) of the Imperial Dairy Institute Farm, (ii) town milk stables, (iii) domestic cows and (iv) village and those of supply included, (v) Imperial Dairy Institute Dairy (cow and buffalo), (vi) travelling milch cows, (vii) milk hawkers and (viii) town dairies.

(b) A majority of the samples of milk from different sources showed the following bacterial counts and reduction times.

Source	Bacterial count per ml.	Methylene blue reduction time.
(a) Individual animals (Imperial Dairy Institute)...	Below 50,000	Over 5½ hour.
(b) Hord (Imperial Dairy Institute and domestic cows) ...	Below 100,000	4 to 5½ "
(c) Dairy (Imperial Dairy Institute) and travelling cows ...	Below 500,000	Above 4 "
(d) Town Stables.	Between 200,000 and 5 millions	2 to 5½ "
(e) Village ...	Between 500,000 to 10 millions	1 to 4 "
(f) Milk hawkers ...	Between 500,000 and 5 millions	Below 3 "
(g) Town Dairies ...	Over one million maximum recorded over 90 millions)	Below 2 "

(c) Although correlation is observed between plate counts and reduction times of the same samples of individual animals, marked discrepancies occur in other cases.

(d) In general, a better correlation is observed between reduction times of 4 hour and above and plate counts of 2,00,000 per ml. and below, than between 5½ hr. and over, and 20,000 and less.

(e) The bacteriological quality of milk from villages and town milk stables and of supplies made by milk hawkers and town dairies is unsatisfactory and improvements in the production, handling and distribution of milk, therefore, need urgent attention.

(f) The need for a properly organized and vigorous campaign on clean milk production and handling and an effective machinery for the bacteriological control of market milk supplies is essential.

Ind. J. Vet. Sci. Vol. XIV, Part IV.

A small outbreak of Strangles in Adult Ponies.—By M. K. Srinivasan, G.M.V.C., and S. K. Chaudhury, G.B.V.C.

1. An account is given of a small outbreak of strangles in adult ponies, associated with haemolytic streptococci of Edwards' type B₁ or Brazeley's equine type 4.

2. Blood of affected animals taken at the height of fever was non infective, but strangles in its typical form was easily set up experimentally in foals on nasal installation of a 24 hour broth culture of the streptococcus.

3. Naturally and experimentally infected animals were proved to be immune.

Ind. J. Vet. Sci. Vol. XIV, Part IV.

Protein for Egg Production 11.—By A. J. MacDonland.

1. Under semi-intensive conditions, a cereal diet (protein content 10 per cent) in conjunction with liberal amounts of green food and calcium is unsatisfactory for laying fowls.

2. Under semi-intensive conditions there is no value in adding common salt to a low protein laying diet composed of cereals plus liberal amounts of green food and calcium.

3. Separated milk is a very valuable protein supplement for laying and breeding birds.

4. Meat offal is a good protein supplement for laying birds but gives lower hatchability than a supplement of separated milk.

Ind. J. Vet. Sci. Vol. XIV, Part IV.

Experiments on the Transmission of Anthrax through flies.—By S. K. Sen and F. C. Minett.

1. Under experimental conditions, *Stomoxys calcitrans* failed to transmit anthrax to goats by its bites or by defaecating on the scarified or cauterized skin of goats.

2. Both *Musca domestica* and *Calliphora erythrocephala* transmitted the disease when brought in contact with the cauterized skin of goats, after having fed on incisions on carcasses of goats dead of anthrax.

3. The disease could not be reproduced by bringing infected *M. domestica* in contact with the eyes of healthy goats.

4. No evidence was obtained of the presence of anthrax bacilli in the mouth parts of *S. calcitrans* flies killed at various intervals after their infective feed, except in two instances, in which very small numbers of

bacilli were demonstrated in the mouth-parts of flies killed immediately, or within a few minutes after feeding. On the other hand, in some cases the bacilli were found in the bodies of such flies up to 72 hours.

5. Anthrax organisms were found in the faeces of *S. calcitrans* not earlier than 21 and not later than 72 hours after their infective feed.

Ind. J. Vet. Sc. Vol. XIV, Part IV.

Abstract.

REVISED SCALES OF PAY FOR VETERINARY SERVICES IN MADRAS.

(G.O. No. 78, Finance, 6th February 1947).

Fort St. George Gazette, dated 25-2-47.

	Existing scale of pay	Revised scale of pay
Madras Veterinary Service (Gazetted Service)	200-30/2-260-40/2-700	260-40/2-700
Veterinary Assistant Surgeons (Non-Gazetted Service).	90-10/2-200	120-5-200-10-250. B. V. Scs. will start on Rs. 140 per mensem.
Veterinary Compounders and Stockmen Compounders.	35-2/2-41-1/2-50	35-1-60

Reviews

GAIGER & DAVIES VETERINARY PATHOLOGY AND BACTERIOLOGY". Third Edition: G. O. DAVIES, D.V.Sc., M.R.C.V.S., pp. xii 796. 403 figs. Bailliere, Tindall & Cox, London, W. C. 2. Price 30s. Copies in India can be had from the Editor, I. V. J.

This third edition of Veterinary Pathology and Bacteriology is a welcome addition to the veterinary literature, useful alike to the student and the practitioner. New chapters and sections have been added with some new illustrations. The appendix is a special feature to be commended containing as it does a brief resume of laboratory and post-mortem technique.

Although this edition has been brought up to date, we find no mention of Bovine Nasal Schistosomiasis, (Rao 1932) or of Caprine Pleuro Pneumonia first described by Longley in 1940. These diseases are fairly extensively prevalent in India and on which a good bit of work has been done. We wish they had found a place in this volume. We would also have liked a chapter on Avitaminosis, as diseases caused by vitamin deficiencies are getting greater and greater attention these days. Another omission to which we would like to draw attention is the successful treatment of *B. equi* by Pirevan (Evans).

Still in spite of these omissions, this volume is a great improvement on the previous editions and deserves to be in the hands of every veterinarian.

The get up of the book by the publishers Messrs. Bailliere, Tindall & Cox, is as usual excellent.

THE IRISH VETERINARY JOURNAL. We have great pleasure in extending a cordial welcome to the Irish Veterinary Journal, the official organ of The Veterinary Medical Association of Ireland. Price 2s.

The first issue which has just been received by us outlines the policy of the journal and contains, besides the Presidential address by Mr. John A. Flynn, M.R.C.V.S., a very good contribution on Veterinary Ethics by Professor O'Dea. A students' section is another interesting feature of this journal which we are told, is the result of the amalgamation of the *Irish Veterinary Student* with the *Irish Veterinary Journal*.

Although the Journal is primarily intended for the members of the Veterinary profession practising in Ireland, still, we are sure it will have a wider appeal to the Veterinary Practitioners elsewhere.

The get up of the journal is good and we look forward to its future issues with great interest.

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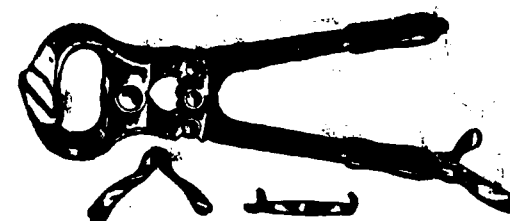
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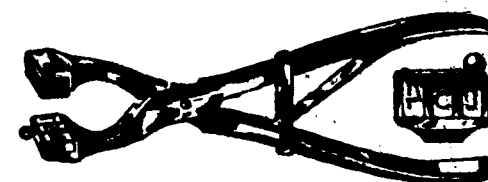
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Diethylamine Acetarsol
Solution

• **M & B 693**

• **SOLUSEPTASINE**
Brand
Solution

• **M & B 693**

INDICATION

Nervous sequelae of distemper, anaemia, chronic skin affections, emaciation following helminthiasis, and as a general tonic.

General tonic for parenteral administration in debility, malnutrition, anaemia, helminthiasis, chronic skin affections and nervous disorders: well tolerated by subcutaneous injections.

Chemotherapy of streptococci, pneumococcal, staphylococcal and many other bacterial infections. Useful in Canine distemper.

For the treatment of hemolytic, streptococcal and other pyogenic infections, by parenteral administration. Well tolerated subcutaneously.

PACKING

Containers of:
50 x gr. 4 tablets.
250 x gr. 4 tablets.

Boxes of 6 x 2 c.c.
ampoules.
(9.40 percent solution)

50 x 0.5 gm tablets
250 x 0.5 gm "
1000 x 0.5 gm "

20% solution
Bottles of 30 c.c.
500 c.c.
10% solution
Boxes of 10 x 8 c.c.
ampoules.



MAY & BAKER LIMITED

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