

**Essentials of Physiology for Veterinary Students.** By D. Noël Paton, M.D., B.Sc., F.R.C.P.Ed., Superintendent of the Research Laboratory of the Royal College of Physicians, Edinburgh, etc. William Green & Sons: Edinburgh and London, 1905.

As the author states in the preface, he has in this work attempted to give the essentials of general physiology and of the special physiology of the domestic animals in a form suitable to the requirements of students and practitioners of veterinary medicine. In this attempt he has been to a large extent successful, though it appears to us that the special side of the work is not quite on a level with the general. It is no doubt true that the physiology of man and that of the domestic animals have much in common, and that most of our knowledge of human physiology has been acquired from experiments upon the lower animals, but that does not lessen the importance of a knowledge of the special physiology of man for the medical student, and of the special physiology of the domesticated animals for the veterinary student. The ideal text-book of veterinary physiology, while embracing all that is important in the way of general physiology, must not omit the equally important facts of physiology which are peculiar to the various domesticated animals. As a matter of fact, Dr Paton in this work sometimes mentions special facts of human physiology as if they were general, and omits to mention at the same place other facts which are surely deserving of special notice in a text-book intended for veterinary students. For instance, in the chapter on Voice it is said that the left recurrent laryngeal nerve is apt to be pressed upon by aneurismal swellings, and that paralysis of it makes the voice hoarse or abolishes it altogether, but no mention is made of the extremely common paralysis of the nerve in horses free from aneurismal swellings, or of the important effect which such paralysis has on the respiration! As another illustration of the too human standpoint from which the facts are viewed, it may be mentioned that where anatomical descriptions occur they frequently imply that the horse and the other domesticated animals walk erect like man. In the description of articles of diet rather more space is given to the animal foods (including butter, cheese, and eggs) than to those of a vegetable nature.

In pointing out these defects in the work, we do not forget the limits which are imposed on the size of a book intended mainly for ordinary students; but we think that when a second edition is called for it will be necessary to expand considerably the parts of it which deal with the special physiology of the horse and the other animals of the farm. The present volume runs to a little over 400 pages, and includes 157 useful illustrations.

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## CLINICAL ARTICLES.

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### A REMARKABLE CASE OF DEFORMITY IN LAMB'S RIBS.

By GERALD LEIGHTON, M.D., F.R.S.E., Interim Professor of Pathology, Royal (Dick) Veterinary College, Edinburgh.

THE specimens illustrated in this article were sent to the zoological department at Edinburgh University, and handed over to me by Professor Cossar Ewart. They are of such an unique character and so difficult to account for, that it seems worth while placing them on record in the pages of this *Journal*.

All the information that could be obtained was to the effect that the ribs were taken from a lamb which had died a few hours after birth, and that a number of other lambs in the same flock were similarly affected and died. I was unable to obtain a whole carcass for dissection and observation of the other organs, hence partly, perhaps, the difficulty of being able to say exactly what is the nature of the specimen.

The appearance of the deformity will be better grasped by studying the illustrations than by a mere description. In Fig. 1 four of the ribs are shown, and it will be noticed that each exhibits upon its curvature a swelling on the curvature, which on closer examination has the appearance of a joint. Every rib in the specimens sent was similarly deformed, including ribs from both right and left sides of the thorax.



FIG. 1.

One of these joints is reproduced in an enlarged form in Fig. 2, which shows exactly the condition. It will be observed that there are no true ligaments developed, but merely some fibrous tissue on either side of what may be described as the articulating ends.

It is the etiological aspect, of course, which is of greatest interest. What was the cause or origin of the deformed ribs? Two answers only seem to be possible. The first is that the case is one of a true congenital inborn deformity, germinal in origin. The second possible explanation is that the deformity is the result of an intra-uterine traumatism. I have shown the photographs to Professor Cunningham of Edinburgh University, who is inclined to think that the case is one of intra-uterine injury leading to fracture and the formation of a false joint. He is hardly inclined to go the length of saying that it is a morphological congenital defect.

The difficulty I have in accounting for the condition in this latter

way is that it is hard to imagine any injury which would produce these false joints in such a remarkably regular and bilateral manner. Every rib showed these joints and all were of the same nature. Moreover, they were on right and left ribs. Then there is the further difficulty in the statement that a number of other lambs were similarly affected. I give this simply for what it is worth, having had no means of verifying the statement, but there is no reason to doubt it. If the condition is a true germinal variation, a real congenital defect, it would most probably have cropped up again in some of the offspring of the lambs affected. But of this I have no knowledge.

The case teaches us one thing, however, which may be noted,



FIG. 2.

namely, the importance of using the term "congenital" in the strict and accurate sense. The word is too often used to mean merely "present at birth," a use, or rather misuse, which leads to endless confusion of thought. If the deformity in these ribs was caused by an intra-uterine injury during any part of the gestation period, the deformity is an "acquired" one, and not congenital in any real sense. In other words it is a "somatic" character. If, on the other hand, the origin is to be found in the germ-plasm, it is a true "congenital" or "inborn" character; it is "germinal." It would conduce to much greater clearness if the terms "somatic" and "germinal" were used in this connection instead of "congenital" and "acquired," because so many use the word "congenital" in the loose sense of meaning anything present at the time of birth. The accident of the moment

of birth has, of course, no connection with the origin of characters, and it should not be made the distinguishing basis. It would be just as accurate to speak of the result of an intra-uterine operation as "congenital."

I may add, that I have been unable to find any case on record of a similar nature to this one, and it is possibly unique.

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## SARCOMA OF THE SUB-LUMBAR LYMPHATICS IN A HORSE.

By W. H. BROOKE, M.R.C.V.S., Handsworth.

THE following is a short account of a case which is in my experience unique.

The subject was a brown carriage gelding, between fourteen and fifteen years of age, and standing about 16 hands high. Three-and-a-half years previously I had performed tracheotomy on it as a relief from roaring, which at that time quite prevented ordinary exertion; however, the insertion of the tracheotomy tube enabled it to work up to the time of the attack now to be described.

For six months previous to death (27th September) the animal had been in bad condition, and feeding precariously; there were no very well-marked symptoms, but, such as they were, they pointed chiefly to derangement of the intestinal functions. Towards the end of July the bowels began to be relaxed, and this symptom gradually increased in severity; indeed, during the last week of the subject's life the intestinal excreta were almost entirely fluid, and of an extremely unpleasant odour.

I examined the food, and enquired as to the regularity of feeding and watering, but I could detect no fault in this direction.

The molar teeth, which were irregular and sharp at the edges, received attention, and anodynes, astringents, hepatic stimulants, and tonics were all tried in turn, but gave only temporary relief. The purging meanwhile increased in severity; there were no symptoms of abdominal pain; the visible mucous membrane became more and more pallid.

The temperature during the last two months of life ranged from 100° to 102·3°; and, as the case seemed to resemble one which I had had under notice in a colt some two years previously, and which on *post-mortem* examination proved to be tuberculous, I decided to apply the tuberculin test. Accordingly, at 10.30 P.M. on 22nd September, the temperature being 102·3°, I injected 3 cc. of tuberculin (supplied by Prof. McFadyean). At 7.30 on the morning of the 23rd the temperature was 100°, at 10.30 A.M., 102°, at 1.30 P.M., 102°, and at 4.30 P.M., 102·3°. This result indicated that tuberculosis was not the cause of the trouble. As I had carefully watched excreta for parasites, and examined them microscopically for parasitic eggs or fragments, without result, I concluded that the cause must be some severe obstruction to the intestinal circulation; and, as there was an entire absence of hepatic symptoms, the circumstances seemed to point to lymphatic obstruction or tumour.