believe, however, that it was the mechanical stoppage of the channels of the portal vein which occasioned the necrosis, seeing that the emboli were met with only here and there when present, and were completely absent in many sections. I incline much more to the belief that it was something secreted by the organism which had this lethal effect upon the part. This view was supported by the fact that often the necrosis ran through the middle of a lobule quite irrespective of the vascular distribution.

The disease appears to be common to many animals. Murchison and Wilks (*Trans. Path. Soc., Lond.*, vol. xv., 1864, p. 132) described a case in Man said to have followed typhoid fever; and Eberth (*Arch. f. path. Anat.*, vol. c., 1885, p. 23) gives a detailed examination of what seems to be an identical condition in the guinea-pig, together with another case (*Ibid.*, vol. lxxvii., 1879, p. 29) in the badger. In both of those recorded by Eberth the organism was a bacillus and presented certain specific characters. It was also contained within blood-vessels. My case therefore so far as the form of the organism is concerned appears to be peculiar, but whether if cultivated the original rounded shape would not have elongated into a rod or thread form is impossible to say, seeing that the parts had been hardened in Müller's fluid before I got them.

It should be mentioned that apparently the animal did not suffer from any disease of the intestine.

A CASE OF CONGENITAL TUBERCULOSIS.

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IN the month of May last I received from Mr Durie, Superintendent of the Edinburgh Abattoir, a portion of the liver of a young calf. Attached to this piece of liver there were several lymphatic glands, enlarged to the size of a hazel nut and caseous towards the centre. Some small nodules, up to the size of a pea, were seated in the liver substance itself, and these also were in a state of caseous degeneration.

The naked-eye characters of these lesions left little room for doubt that they were tuberculous; and on staining a cover-glass preparation from one of the enlarged lymphatic glands, I had no difficulty in discovering tubercle bacilli.

On inquiry I learned from Mr Durie that the calf was 5 days old at the date of slaughter, and that its dam, which was killed at the Edinburgh Abattoir on the same day, was extensively tuberculous. There can therefore be no doubt that this was a genuine case of congenital tuberculosis, and, so far as I am aware, it is the only case that has yet been recorded in Great Britain.

That this mode of transmission of tuberculosis is uncommon, not to say rare, is shown by the fact that up to the present time there have been observed only six cases of indubitable congenital tuberculosis in the calf—that is to say, cases in which the possibility of the disease having had an extra-uterine origin was excluded, and in which the exact nature of the lesions was established by the discovery of Koch's

bacilli in them.¹ In 3 of these cases the lesions were discovered in unborn foetuses, in the fourth case the calf was dead-born, and in the other two the animal was under 14 days old.

Both among medical and veterinary practitioners in this country the view is very generally held that the transmission of tuberculosis from the mother to the young during the intra-uterine existence of the latter is not rare, and there are many who regard this mode of transmission as accountable for a large proportion of the cases of tuberculosis in the human and bovine species; but that this view, so far as the latter species is concerned, is erroneous, appears to be fully proved by the rarity of tuberculosis in young calves. It is probably not wide of the mark to estimate the proportion of tuberculosis among milch cows at 3 per cent., and yet we know from the careful statistics furnished by the large Continental Abattoirs that the proportion of tuberculosis among calves under 1 month old does not exceed 1 in 70,000. It may thus be said that the few recorded cases of congenital tuberculosis constitute the exceptions that prove the rule.

EDITORIAL ARTICLES.

THE ETIOLOGY OF TETANUS.

It is now six years since Nicolaier discovered that by inoculating with soil from various sources he could produce typical and fatal tetanus in mice, guinea-pigs, and rodents, and that the seat of inoculation contained in such cases a bacillus with well-defined morphological characters. Subsequent investigation by a large number of observers showed that this same organism is to be found in the pus of the wound in cases of traumatic tetanus of man and the horse, and, although the strict proof that Nicolaier's bacillus is the actual cause of tetanus had not until quite recently been led, there has not for some years past been any doubt on the matter in the minds of most bacteriologists.

If tetanus, quite as much as anthrax or glanders, is a disease caused by the introduction of a micro-organism into the animal body, it is imperatively necessary that the fact should be brought home to human and veterinary practitioners, for an accurate knowledge of the cause of a disease nearly always points to the means of prevention and sometimes also of cure. To veterinary surgeons hitherto the causation of tetanus has generally been regarded as an inscrutable mystery, but, thanks to the researches of bacteriologists, there is no longer anything mysterious about it, as we hope in this article to show.

¹ These six cases are as follows:—

Johne, *Fortschritte der Medicin*, 1885, p. 198.

Malvoz and Brouwier, *Annales de l'Institut Pasteur*, 1889.

Bang (3 cases), *Zeitschrift für Tiermedizin*, Band 16, p. 409.

Csokor, *Recueil de Méd. Vét.*, 1891, p. 133.