adopted, viz., the simple application of the soil of an infected byre, or fæces from a case of white scour, to the umbilicus of a new-born healthy calf. Positive results obtained in this way would have been fairly conclusive, but it may be pointed out that to kill a calf by subcutaneous or intravenous inoculation with large doses of an organism not certainly the cause of white scour, is very far from proving that in natural circumstances the umbilicus is the only channel by which infection takes place.

It is obvious that the question whether the umbilicus is the exclusive channel by which the infection is caught is one of great practical importance, and much interest will be felt in the results of the preventive measures which are being adopted in Ireland on the view that there is no risk of infection by way of the mouth. Should they prove successful in a general way the result will go much further than the few experiments hitherto made to prove that white scour is primarily an umbilical infection. We observe that M. Nocard describes his plan of prevention as very simple, but few people who are acquainted with the ordinary conditions of cattle-breeding will think the description quite appropriate for a method which requires the antiseptic irrigation of the genital passages of the cow before parturition, and the application of a strictly aseptic dressing to the calf's umbilical cord, not to speak of the constant presence of attendants to receive the young animal in a clean cloth.

CLINICAL ARTICLES.

A PECULIAR CASE OF SKIN DISEASE IN A HORSE.

By J. MACQUEEN, F.R.C.V.S., Royal Veterinary College,
London.

Subject.—A roan harness gelding, brought to the College in a conveyance on 28th October 1898.

Mr T. Wolsey, M.R.C.V.S., Peckham, sent the following history of the case: "The roan gelding had been on a doctor's job, and was sent home affected with skin disease on 20th October. When I first saw the horse I noted the following symptoms: Loss of hair around the eyes, nostrils, and muzzle, the exposed epidermis having a very scurfy appearance. His neck and shoulders presented large flakes of epithelium, 2 to 3 inches long by half an inch wide, some close down on the skin, others raised up. The thorax and abdomen were not much affected. When the flakes were pulled off some pain was evinced. The scales had their greatest length in a vertical direction, and seemed to leave the skin by their posterior border first, so that

when the horse was viewed from in front the superficial face of the scales was seen. The scales were of a whitish-grey colour, and when pulled off an inflamed patch could be seen, but this was not as large as the scale, as it only corresponded with the anterior edge of the latter. The horse was dull and weak, his legs were a little filled, and his pulse was small and weak. He was ordered sloppy food, $\bar{3}$ ij magnes. sulph. twice a day, and $\bar{3}$ j liq. arsenicalis once a day in his drinking water.

"The following morning his skin was colder and more scurfy, the legs more swollen, and under the chest some oedema had formed. Slight rigors and a very peculiar smell, something like singed hair, had been noticed, especially on first opening the loose-box. In a few days the scales increased in size, and the eruption extended all

over the skin. The scales fell from the skin in considerable quantity, as the floor where the horse had been standing was covered with scurf. The lips become swollen and excoriated, epithelium being rubbed off in feeding, but there was no pruritus. The smell was now stronger, pulse still very weak, appetite good. Had occasional shivering fits, so was kept well rugged. A slight purulent discharge from the eyes was next seen, and the conjunctivæ were inflamed. Around the sheath and under the belly some blackish matter adhered to the skin. As the case did not improve, I applied iodide of sulphur ointment around the eyes, nose, etc., and sent the horse to the College seven days from the time I first saw him. I do not know how long the skin had been affected before the horse was sent home."

Symptoms on Admission to the College Infirmary.—Roan gelding, in poor condition, stiff, listless, head depressed, disinclined to move. Temperature 104° ; pulse 80, very weak; respirations 24; snuffling

from nasal catarrh and œdema. Lips swollen and excoriated. Conjunctivæ congested, eyelids swollen, mucus hanging from their edges. Legs much swollen, and considerable œdema beneath the chest. Some dripping from the sheath, which is very dirty. Skin very scurfy, rather moist in places, and smelling strongly of urine. A few sores on the face, body, and legs. Chestnuts and ergots loose or peeling. The appearance of the animal is well shown in the accompanying photograph.

Diagnosis was deferred. A peculiar case; in some respects resembling so-called "urinous eczema." Urine to be collected for examination and analysis. Skin to be cleansed by dressing with lard and afterwards washing. Sores to be dusted with dry dressing and legs bandaged. Give febrifuges until temperature is normal, then test with tuberculin. Feed on steamed oats, linseed and oatmeal, with milk and hay.

The patient lived fourteen days after admission, but did not show the slightest improvement in general health. His temperature, never lower than 103° , was often 105° , so that the tuberculin test could not be applied. Examination of urine and scurf gave no assistance. After washing, the skin appeared somewhat better; there was less smell, but the œdema increased and extended. A curious symptom—absent during the day—could be seen at night and early morning, viz., fluid, slightly opaque, dripped from the mane and tail. He drank moderately, but did not feed well from the first, and eventually refused to eat. He gradually lost strength, and on the morning of the fourteenth day (12th November) was found down and unable to rise. He died while being lifted with slings. Professor M'Fadyean made the *post-mortem* examination, of which the following are the notes:—

Autopsy.—Carcase emaciated. Skin everywhere scurfy. The hair is matted together at its roots with an abundant greyish material, and with slight pressure this may be detached in the form of large scales or crusts, which carry with them the whole of the hairs, leaving a dry-looking, white surface. At some parts, notably on the face, the inside of the thighs, the inside of the forearms, and some patches on the back, the skin has thus already been denuded of hair, and shows a tendency to crack along lines which are of a reddish colour from injection of the vessels. Even these lines are dry. The skin exhales an unpleasant, not urinous odour. No œdema of the subcutaneous tissues. Peritoneum normal, save that covering the cæcum, which shows some fibrous threads. The glands of the intestines and other abdominal viscera are normal. The contents of the cæcum and colon are mainly liquid. The mucous membrane of the terminal half of the cæcum is intensely congested, and numerous worms (*sclerostoma armatum*) are adherent to it. The small intestine is normal, save for the presence of about two dozen "bots" adherent to the cuticular membrane. The liver is congested; weighs 18 lbs. The spleen is normal; weighs $1\frac{3}{4}$ lbs. Pancreas normal. The kidneys together weigh $3\frac{3}{4}$ lbs.; they are normal in appearance. The pericardium contains about 8 ozs. of straw-coloured, watery liquid. The heart is normal. The lungs are normal, save for considerable emphysema at their apices and lower edges. Both thyroid glands are abnormally small, but normal in position, size, and shape;

combined weight, 14 grammes. On section the gland tissue is found to be abnormally firm.

Subsequent microscopic examination of one of the thyroids did not reveal any decided departure from the normal in respect of histology. The acini were distinctly smaller on an average than those present in normal thyroids, and at some places there appeared to be a slight excess of interacinous tissue. The epithelium was quite normal, and, as usual, the majority of the acini were completely filled with colloid material. The reduction in size of the glands thus appeared to have been due to a condition of simple atrophy, but it is doubtful whether there was any connection between this and the disease of the skin.

GASTRO-ENTERITIS IN YOUNG CALVES.

By JOHN BAIRD, M.R.C.V.S., Thornhill.

ON the farm where the following outbreak occurred, the heifers started to calve about the middle of February, and up to the end of February five calves had died.

The owner then consulted me, and I arranged to visit the farm and inspect the buildings, etc., as from the history I suspected the calves were dying from white scour. On inspection I found all the byres and calf-houses in first-class condition, everything being scrupulously clean. I also ascertained that in the case of the five calves which had died a clean cloth soaked in carbolic solution had been applied over the region of the umbilicus and supported round the body.

The calves were all strong and healthy when dropped, and did well for two days, but they then refused to suck, got very stiff, and scoured badly; nose, mouth, gums, and tongue deathly cold. The gums were slate-coloured as in lead poisoning. No treatment had been tried for these five calves.

I came to the conclusion that it was a case of very acute infectious white scour, and adopted Nocard's treatment on the sixth calf, which was born on 1st March, but it died two days later.

I then inquired into the feeding of the cows, which was as follows: A liberal supply of good meadow hay, with a daily allowance of 1 lb. distiller's grains and 1 lb. decorticated cotton meal. About the beginning of February 1½ lbs. Indian bean-meal had been substituted for the decorticated cotton meal. This was the same feeding as other heifers had been getting in previous years, with the exception that the cotton meal had been given in smaller quantities, but extended over a longer period, and the calves had always done well.

Seeing that Calf No. 6 had been born under strict aseptic conditions, I was forced to conclude that it was not infectious white scour, but that the cotton meal was the cause of the mischief, and I therefore ordered a complete change of feeding, and put all the in-calf heifers on to small daily doses of saline medicine.

Calves Nos. 7, 8, 9, 10, 11, and 12 were duly born, lived two days, and then died.

Calf No. 13 lived fourteen days, then took ill, and died on the sixteenth day.