

having a row of ulcerating sores on the inner aspect of the carpus of the near fore limb, which was swollen from the elbow downwards. It had been tested with mallein two days previously, and at the seat of injection there was still a swelling about five or six inches in diameter.

The animal was also the subject of double scirrhus cord, the scrotal region being occupied by a tumour-like mass as large as a man's head. When the cords were incised they were found to have the usual structure, being largely composed of dense white fibrous tissue, studded with soft "pouting" centres, and actual cavities containing thick mucoid pus, in which discomyces granules were present.

The lungs contained a few glanders nodules, but about the middle of the dorsal edge of the right lung there was present a lesion which appeared to be of another nature. This was a firm tumour-like growth of the volume of a hen's egg. On section it had a greyish surface with projecting soft points. A scraping from the cut surface showed numerous discomyces granules.

Slanting agar tubes were inoculated from one of the scirrhus cords and from the fibroid lung lesion, and after incubation all of these yielded an apparently pure growth of a micrococcus. Contrary to what is usually the case, the colonies of agar were devoid of colour, and thus resembled the staphylococcus albus rather than the staphylococcus aureus.

I may observe that this is by no means the only instance in which pus containing discomyces granules has yielded white instead of yellow colonies of a micrococcus, and in a considerable number of cases mixed growths of yellow and white colonies have been obtained. This might be urged as another point calculated to raise doubts as to the specific distinctness of the discomyces from the common pyogenic staphylococci.

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## CARCINOMA OF THE STOMACH OF THE HORSE.

By the Same.

DURING the last seven years three cases of primary carcinoma of the horse's stomach have come under my notice. In one of them I was fortunate enough to have an opportunity to make a complete *post-mortem* examination of the patient, but in the other two cases only portions of the diseased parts were sent to me for examination.

CASE I.—In this case the animal was an aged pony, which died on the 1st November 1893, and was brought to the College for *post-mortem* examination on the evening of that day. The examination was begun immediately, and completed on the following morning.

The general condition of the animal was poor. The peritoneal cavity contained a considerable quantity (not measured) of yellowish slightly turbid liquid. The peritoneum lining the inferior wall of the abdomen was almost completely covered with yellowish-white mushroom-like growths, varying in size from a pigeon's egg downwards. Some of them had a narrow pedicle, some were sessile, and in all of them the texture was rather soft, being easily crushed between the fingers.

The omentum contained innumerable tumours of about the same

size and appearance, the largest being about the volume of a pigeon's egg. A few similar growths were present in the great mesentery. With the exception of the terminal part of the ileum, which carried a few tumours, the wall of the small intestine was normal. Several nodules not larger than a pea were present on the wall of the cæcum, and numerous tumours were scattered along the course of the colic arteries between the first and fourth portions of the double colon. The colic mesentery contained about half a dozen tumours.

The diaphragm, spleen, and left side of the stomach were partially matted together by a soft new growth, similar in appearance to the tumours already mentioned. The splenic substance was apparently free from new growth, but the liver showed a number of tumours on its surface and in its substance immediately beneath its capsule. The hepatic lymphatic glands were enlarged, and evidently the seat of cancerous invasion. The kidneys and the pelvic organs were normal, and the following groups of lymphatic glands were also noted to be normal: mesenteric, superficial and deep inguinal, brachial, prescapular, prepectoral. When the stomach was removed from the body the wall of its left or cuticular division was found to be enormously thickened, and on its inner aspect the mucous membrane was almost entirely replaced by a luxuriant, irregular, soft, greyish-white new growth. At some places this was four or five inches in thickness.

The pleural cavities contained a quantity (estimated at about a gallon) of yellowish slightly turbid liquid. The chest wall on the left side was studded on its inner aspect with yellowish-white growths. At one place, over an area of 5 or 6 inches in diameter, the pleura was almost continuously covered with this new growth. Elsewhere the pleura carried scattered pea-sized tumours, but some parts of the membrane were nearly free from new growth. The diaphragmatic pleura also carried some similar growths, the largest being about the size of a walnut.

The pleura covering the left side of the pericardium was almost completely covered with a similar tumour formation, and at many places the pleura on the costal aspect of the left lung showed patches of the same appearance.

Microscopic examination of sections made from a number of the new growths showed the typical appearance of an epithelioma, or squamous-celled carcinoma. The stroma in most of them was sparing in amount and spindle-celled in character, in agreement with the comparatively soft consistence of the tumours. The great bulk of the growths, especially in the case of the mesenteric tumours, was composed of epithelium.

The condition of the mucous membrane of the left side of the stomach, and the volume of the new growth in that position, leave no room for doubt regarding the starting point of the disease. The case was primarily one of carcinoma of the cuticular or non-glandular part of the gastric mucous membrane. Thence the disease had been spread by way of the lymphatics, and perhaps also by actual contact, throughout the peritoneal cavity, and through the diaphragm to the pleura. No one familiar with the distribution of the lesions in advanced cases of bovine tuberculosis could have failed to be struck with the remarkable similarity between such cases and the present

one as regards the way in which the disease appeared to have been spread from the primary centre, and in this respect the appearances may be said to have lent support to the theory that a living irritant is at the root of the cancerous invasions.

Advantage was taken of the opportunity which this case presented to put this theory to an experimental test.

On the evening of the day on which the pony died (1st November 1893) one of the tumours was incised with a sterile knife, and material scraped from the cut surface was suspended in a small quantity of sterile water, so as to make a milky-looking opaque liquid. Of this liquid 5 cc. was injected into the right jugular vein of an aged pony, and 1 cc. was injected subcutaneously at two places on the neck. There was scarcely any appreciable reaction at the points of injection in the neck, and after a few days this entirely disappeared. The pony was killed fifteen weeks later (21st February 1894), and the *post-mortem* examination failed to reveal any trace of carcinomatous formation in any part of the body. In the neck there was nothing to indicate the points at which the liquid had been injected.

CASES II. and III.—In the first of these the parts sent to me were the stomach and a portion of the omentum. They were forwarded by Mr Eaton Jones, M.R.C.V.S., Liverpool, in November 1895. In the other case the stomach only was sent, by Mr Butters, M.R.C.V.S., London. In each of these the left half of the stomach was largely disorganised by a new growth, which in general appearance and histology closely resembled that which was present in the same position in Case I.

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## RUPTURE OF THE DIAPHRAGM IN A HORSE.

By the Same.

THE following case appears to be interesting as an example of the rarer forms of accident to which horses are exposed by the operation of casting.

The subject was a roan cart gelding, aged about twenty years. On the afternoon of the 27th October 1898 it was cast with hobbles in the College Free Clinique, preparatory to the operation of plantar neurectomy. This operation had been performed on one side, and the animal was then turned over to permit of the operation being completed. At this stage it was observed that the horse gave a start, and after a few minutes, during which the breathing was very laboured, it died.

The *post-mortem* examination was begun within fifteen minutes afterwards, and it revealed in the left side of the diaphragm a laceration through which there had passed almost the whole of the floating colon, the spleen, and about one-third of the small intestine. After these parts had been gently pulled back into the abdominal cavity, and the diaphragm had been cut out, the tear in the latter was found to be rectilinear, and 11 inches in length when its edges were brought together. With the carcass on its back, the laceration ran from the left pillar of the diaphragm obliquely upwards and outwards to the muscular rim. At its inner end the fibres of the pillar, and at its