ADENO-PAPILLOMA OF THE RECTUM.

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THE patient in the following case, a woman aged 53, had haemorrhage from the rectum four years, and received palliative treatment of some kind, off and on, during that period. On December 12th, 1900, she had profuse haemorrhage with a protrusion, and called in Dr. Swanson of Liverpool, who found a condition suggestive of piles, but on reducing the protrusion found it to be something unusual. He called me in next day, and I found what appeared also to me to be haemorrhoids, though somewhat warty. But as an operation was arranged for the following day, I did not disturb the parts in which bleeding had only recently ceased.

Operation.—On dilating the anus a large polypus of a warty nature became manifest on the anterior rectal wall, having a long narrow neck. This was held in Doyen's broad-ligament clamp, cut off, and the stump sewn with sulpho-chromic catgut, passed through and through with a needle at each end, tied and knotted after each passage. The points of suture were numerous, deep, and close together. In this way, on releasing

Photo of specimen lying in a basin in spirit, May, 1911, by Fred. Halliday, museum attendant, University of Liverpool.

the clamp no bleeding occurred, and the operation was finished. It was clear that, although the pedicle was narrow when held in the clamp and when the polypus hung down, the wound would have gaped widely and bled freely if it had not been very thoroughly sutured, and would have been difficult to seize again had haemorrhage not been completely controlled, owing to the great elasticity of the bowel walls. Complete success resulted.

Remarks.—The papillary growth has an adenoid structure with columnar epithelium. The specimen has been in the museum ever since, spread out unaltered, as shown in the photo. It measures $3\frac{1}{4}$ in. by 3 in.

Attention may be drawn to the ingenious practice our museum attendant adopts of photographing some specimens under water or other colourless clear liquid, whereby inconvenient contrasts of light and shade are avoided. As previous examples, see BRITISH MEDICAL JOURNAL, June 6th, 1908, p. 1351; April 17th, 1909, p. 947. In contrast, see May 16th, 1908, p. 1173, where the specimen, from a galactocoele, had to be photographed in air. The most important part—a coil of milky paste—came out perfectly, but the cyst wall and separate contents were necessarily blurred by exaggerated lights and shades.

A DETACHMENT of the Salvation Army which has been at work in the Dutch East Indies for some ten or fifteen years is to have placed in its charge a colony for lepers, about to be established on an island not far from the capital of Sumatra. Its labours in this connexion will not be altogether a new departure, as for the past three years it has been in charge of a leper hospital at Pelantoengan, which is maintained by the Dutch Government, and accommodates 160 patients. The number of lepers in Java alone is estimated to be as many as 12,000.

SURGICAL INTERFERENCE IN CANCER.

(AN EXPERIMENTAL STUDY.)

BY

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It has long been the experience of surgeons that there are certain cases of malignant disease, mostly of a chronic and slowly growing form, which, after operation, flare up, recur rapidly, spread quickly, and soon end the patient's life. The explanation usually offered is that the operation has been incomplete; some of the cells of the cancer have been set free at the operation and have grown and disseminated rapidly. Their local growth has been aided by the removal of the pressure which the tumour has exerted on the surrounding parts. The rapid dissemination and formation of metastases is explained by the opening up of lymph spaces at the operation and the extensive formation of young capillaries which occurs during the healing of the wound.

The chief phenomenon in these cases is the rapidity of the recurrence and its increased malignancy—that is, increased rate of growth. Why should such fragments as have escaped the surgeon grow more rapidly than did the original tumour? It is highly improbable that in every case the operation has been undertaken at the very moment when the neoplasm was going to acquire greater virulence, and the disease was going to flare up of its own accord. The cancer cells are looked upon too much in the light of independent units which have broken away from the control of the organism as a whole. The reaction of the surrounding tissues and of the body in general is taken too little into consideration.

Is the removal of the pressure of the neoplasm and the consequent diminution of the tissue tension a sufficient explanation of the increased malignancy of the recurrence? When this pressure is removed the cancer cells that remain can grow rapidly, at any rate till they have filled up all the available space, and by the increase in their bulk have brought the tension back to what it was originally. But a carcinoma, especially if chronic and of slow growth, is never under very great tension, since if it were necrosis *en masse* and sloughing would be frequent. The edges of every carcinoma are composed of healthy cells, which send out irregular processes, often extending a great distance, into all the available spaces of the surrounding tissues. If the pressure were great we should expect the edge of the neoplasm to consist of a mass of tightly packed flattened cells in all stages of degeneration. Its outline as a whole would be roughly spherical, and the surrounding tissues would show signs of compression. Again, after the operation the wound is usually carefully closed; in many cases even the skin has to be extensively "undercut" to enable its edges to be brought into apposition. Large spaces are therefore rarely left, and such spaces as do remain are very soon filled up with exudate and granulation tissue, which brings the tension back very rapidly to its original point, if, indeed, it does not exceed it.

We, therefore, do not think that the increased malignancy of the recurrence occasionally seen in surgical practice can be explained either on the hypothesis of diminished tissue tension or on that of the operation having been undertaken at the moment when the disease would have flared up had it been left untouched. We cannot agree with Bashford's¹ statement as to "the baseless nature of the opinion that surgical interference causes a tumour to become more malignant or necessarily to disseminate," since we have not infrequently observed identical phenomena during the course of our experiments on the transplantation of cancer in mice. We have therefore analysed our material and collected it (in the form of this paper) in the hope that we may be able to throw some light on the subject.

It is necessary here to give a definition of what we mean by the terms "virulence" or "malignancy." When we say that the virulence of a tumour has increased, we mean that its rate of growth in a given time has become more rapid. On comparing the size that a new growth has attained in a given number of weeks with that of its local

*This work was carried out in the Research Laboratories of University College Hospital Medical School.