and presented a somewhat nodular surface showing considerable congestion, and in places what appeared to be small areas of superficial ulceration. No marked resistance was offered to the knife. On section the tissue showed a solid core with a marked peripheral radiating structure which on microscopical examination was found to correspond to the hypertrophic adenomatous portion of the growth.

Microscopic Examination.

1. *The Peripheral Portion of the Growth.*—Sections taken from the periphery of the polypoid growth show an advanced hypertrophic condition of the rectal glandular tissue, with the formation in places of long papillomatous prolongations of the mucosa. The supporting structure is loose, and consists of delicate strands of fibrous tissue, between which are to be seen numerous cells of the mononuclear type. Young thin-walled blood vessels are plentiful and in a condition of marked engorgement. In several places small collections of ova with deep-staining miracidia are to be seen in the interglandular tissue, and it is of interest to note that in the neighbourhood of such collections the cellular content of the tissue changes, the majority of cells in these situations consisting of polymorphonuclear leucocytes of the eosinophil type. In the transitional area between the adenomatous and the more centrally placed portion of the tissue are collections of ova

FIG. 3.—Section showing collection of embedded ova, one of which shows the terminal spine mentioned in the text. Fixed in formal saline and stained with Heidenhain's iron haematoxylin and orange "G." (x 206.)

which, from the failure of the miracidia to take the nuclear stain, would appear to be of less recent date. In such areas we find that the particular stimulus determining the calling forth of the eosinophil polymorphonuclear elements has ceased, the cells found in these particular areas being chiefly of the mononuclear type. Here also stimulation of the fibroblastic elements has taken place, with marked increased production of fibrous tissue and resulting attempts at encapsulation. Sections taken from certain superficial portions of the growth fail to show the adenomatous structure above described; it is replaced by a tissue presenting the appearance of granulation tissue in which numerous ova are present; blood vessels are numerous, and ulceration of the surface is apparently occurring. It is from areas such as these that ova would appear to be liberated into the lumen of the bowel.

2. *The Central Portion of the Growth.*—In this area the glandular structure above described is entirely absent. On the other hand, the fibrous tissue elements show considerable increase, forming a well marked stroma in which numerous ova of various ages are embedded. Here again variation in the cellular content of the tissue is to be noted; in the proximity of ova containing miracidia which stain well the infiltrating cellular type is that of the eosinophil polymorphonuclear leucocyte. In the neighbourhood of ova showing degeneration of the miracidia, evidenced by the absence of nuclear staining, the predominant cell is that of the mononuclear type. In some of the sections ova are present in very large numbers; in one particular area as many as sixty were visible in the field given by an objective Leitz No. 3 with ocular No. 2.

Apart from the fact that numerous terminal-spined ova

were found in the stool it was considered necessary to search sections in the endeavour to find an embedded ovum cut longitudinally through the middle line showing beyond any doubt the presence of the terminal spine. In due course a fine specimen was found (Fig. 3). The complete contained miracidium is unfortunately not shown, but the specimen demonstrates the terminal spine very clearly. No evidence whatever has been obtained after prolonged search of any ova showing the slightest suggestion of a lateral spine.

Certain structures were seen lying within the blood vessels which lead us to think that they were the transverse sections of the terminal portion of a trematode worm. Further search in other sections from the same tissue finally led to the discovery of typical transverse sections of the helminths themselves lying within the blood vessels and presenting the characteristic arrangement of the male and female worms. A portion taken from one of these sections is illustrated in Fig. 4.

From the histo-pathological examination the polypoid growth would appear to be of the nature of a papillo-adenoma, the stimulus producing this hypertrophic condition of the rectal mucosa being the presence in the tissues of numerous ova of *S. haematobium*, and also possibly certain toxic substances secreted by the adult worms themselves whilst lying in the terminal ramifications of the haemorrhoidal vessels.

FIG. 4.—Transverse section showing the helminths lying within the blood vessels; numerous ova can be seen in the surrounding tissue. Fixed in formal saline and stained with Ehrlich's acid haematoxylin and eosin. (x 44.)

CONCLUSION.

The case under consideration would appear to prove the ability of *S. haematobium* to produce rectal papillomata.

The fact that after very careful search no trematode ova other than those of *S. haematobium* have been found in the urine, faeces, and tissues is, we think, fairly conclusive evidence of a further and previously unproved manifestation of infection with *S. haematobium*.

The accompanying illustrations were kindly drawn from the actual specimens by Mrs. Sinderson, and depict the main points of pathological interest mentioned in the text.

A TWO-LOOP BUTTON SUTURE.

BY

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BEFORE I adopted the suture to be described I had had to experience the unforeseen bursting open of abdominal wounds. This happened after both suturing in stages and the insertion of deep through-and-through sutures. After gastro-jejunostomy or a similar aseptic operation, in weakly patients, somewhere about the tenth day the abdominal incision opened and bowel prolapsed. A cough, vomit, strain at stool, tympanites, merely sitting up in bed, were the immediate causes of the accident, but it could then be noted that there had been an absence of repair. In septic cases, entailing the insertion of a drainage tube, and an undermining of the abdominal wall by suppuration, the

sutures simply cut out; this was followed by the death of the patient.

The suture has prevented such accidents, and there appears to be less tendency to late ventral hernia. I had tried various methods to be found in books before lighting on this one, of which I have not been able to find a similar description. By it the layers of the abdominal wall can be brought into apposition, each to each, and so held during healing, without tension or necrosis, or on the other hand of yielding. The patient can get up, and the sutures need not be taken out for five weeks. In the case of suppuration fomentations can be put on whilst the sutures continue to hold. The method has been applied also secondarily, after an abdominal incision otherwise sutured has burst open, and sound healing has followed. My description applies in particular to the closure of a median abdominal incision, but with modifications I have used the procedure for the closing of other incisions, including cases of ventral hernia and sliding scrotal hernia. The sutures can be inserted even although the abdominal wall is only partly relaxed by the anaesthetic.

The Method.

The soft parts under the skin are held a little everted by Lane's tissue forceps, the skin being retracted as required by a blunt hook. A strand of strong fishing gut has one end threaded through the eye of a semi-circular needle and held by a slip-knot; upon the other end clamp forceps are put on to serve as a stop. The needle is entered (Diagram 1, A) one-third of an inch (1 cm.) from the right margin, through the skin and out through the subcutaneous tissue, the suture being drawn through up to the stop. The needle being then carried across to the left side is made to penetrate the anterior sheath, the left rectus muscle, its

Diagram 1.

Diagram 2.

posterior sheath, and the parietal peritoneum, not more than two-thirds of an inch (2 cm.) from the cut edge. The needle is next passed (Diagram 1, B) on the right side through the parietal peritoneum, outwards through the right rectus and its anterior sheath. A second loop is now inserted about half an inch (1.5 cm.) distant lengthwise from the first loop, the object being to include about one inch of the incision by each suture. The needle is passed (Diagram 1, C) on the left side from the anterior sheath to the parietal peritoneum. Finally the needle is pushed from the parietal peritoneum on the right side outwards (Diagram 1, C, D) to emerge through the skin about a third of an inch (1 cm.) horizontally outside the point of entry.

The two ends of the suture are drawn upon until, as tested by the thumb and finger, the margins are brought into apposition without constriction or puckering (Diagram 2, E). Then (Diagram 2, F, G, H) the suture ends are knotted over "buttons"; I have used short lengths of well boiled catapult elastic, but rolls of gauze and other things will serve. The skin is thus approximated, and is further held together by a fine continuous suture which can be removed after a few days. At the time or at subsequent dressing a single layer of game may be slipped under the "buttons" to protect the skin. The sutures should not be taken out until about three (better five) weeks, the patient meanwhile getting about. When doing so the knot is drawn upon sideways, and one end snipped through flush with the skin, into which it withdraws. Later on—whether the same, the next, or the third day—after loosening by the patient's breathing and movement, the suture can be readily withdrawn without liability of breaking or of leaving buried a portion of the fishing gut.

HERPES ZOSTER WITH LOCALIZED MUSCULAR PARALYSIS.

BY

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MUSCULAR paralyses in the affected zone accompanying or following an attack of herpes zoster are very rare; especially is this the case in herpes of the trunk. As the essential lesion in herpes zoster is situated in the posterior root ganglion of the spinal nerve supplying the affected area (Von Bärensprung, 1861¹) and consists in an inflammation of the ganglion sheath with round-celled infiltration and extravasation of blood into the ganglion itself (Head and Campbell, 1900²), it is somewhat surprising—when one considers that it is at the posterior root ganglion that the tubular meningeal sheaths of the anterior and posterior roots blend—that the inflammatory process does not spread more frequently to the neighbouring anterior root and result in localized paralysis. That paralysis of muscles in the affected zone is more often met with in herpes of the upper limb than in herpes of the trunk is probably accounted for by the fact that the anterior and posterior roots in the lower cervical region have an even closer relation to each other than have those in the thoracic region. In this connexion, however, it is to be noted that D. W. Montgomery³ advances a different explanation. He believes that herpes zoster is caused by a specific virus—probably streptococcal, as was originally suggested by Rosenow and Ofedale—which reaches

the posterior root ganglion from the skin by way of the perineural lymphatics. The fact that the lymphatics of the sensory nerves are more accessible from the surface than are those of the motor nerves accounts for the rarity of an associated paralysis; in the case of the limb and ocular muscles, however, the motor nerves are more superficial, a distribution which is considered by Montgomery to explain the relatively more frequent occurrence of motor complications in these situations. In herpes ophthalmicus, ocular palsies as a complication are said to occur in 7 per cent. of cases.

In an extensive search of available literature I have been able to find very few recorded cases of paralysis accompanying or following herpes zoster of the trunk. Gowers⁴ mentions the occurrence of motor complications in herpes zoster, and points out that it is necessary to distinguish between immobility from hyperaesthesia and true paralysis. Ebstein⁵ in 1895 collected 20 cases of paralysis complicating herpes zoster, but this series includes no case of herpes of the trunk in which the paralysis followed and was confined to the muscles of the affected zone. The 20 cases consist of 6 of paralysis of certain muscles of the upper limb, 1 of the lower limb, 9 of facial paralysis, 3 of facial paralysis together with other cranial nerve palsies, and 1 of ascending myelitis following herpes of the trunk. Hewlett⁶ in 1906 pointed out that although 76 per cent. of cases of herpes zoster affected the trunk, he had found only one case in which muscular paralysis occurred. F. Taylor⁷ (1895) recorded a case of herpes on the right side affecting the region of the tenth, eleventh, and twelfth ribs posteriorly and extending to the umbilical region anteriorly, which was followed, about four weeks after the appearance of the eruption, by paralysis of