NEW APPLIANCES

"Snake" Flexible Arm

Professor IAN DONALD, Western Infirmary, Glasgow, Mr. G. D. GREEN, Department of Clinical Physics and Bio-Engineering, Glasgow, and Mr. W. H. BAIN, Royal Infirmary, Glasgow, write: The idea of a stainless steel flexible arm which can be fixed quite simply by tightening a couple of screws was originally conceived by one of us (G. D. G.) for holding aortic valves "in space" during suturing processes. Its design was under consideration in the mechanical workshops of the Department of Clinical Physics and Bio-Engineering when it was discovered that a prototype device was undergoing trials in an E.N.T. theatre in the Queen Elizabeth Hospital, Birmingham. Discussions with Polar Hydraulics Limited resulted in this prototype being tried and used successfully in aortic valve operations in the Royal Infirmary, Glasgow (Fig. 1). Immediately

afterwards a large version of the "snake" was developed, and this, too, has proved successful in connexion with laparoscopy, especially when demonstrating to students or visitors.

It can be sterilized by boiling or autoclaving and is completely flexible until the screws are tightened. Its base can readily be fixed over sterile towels placed over a metal plate about 8 in. (20 cm.) wide which is slid under the operating-table mattress beneath the patient's buttocks or any other suitable point (Fig. 2). The telescope portion of the laparoscope is simply passed through the distal end of the snake and lightly screwed into position.

When a good view of the pelvic viscera has been obtained with the help of a carbon dioxide or helium pneumoperitoneum, operative procedures can be undertaken within

the abdomen without having to move or hold the telescope. If a viewing prism is attached to the eyepiece of the telescope, as shown in Fig. 2, others, including assistants, can watch simultaneously without wasting the surgeon's time.

The instrument is particularly valuable in the operation of laparoscopic sterilization, especially when working "two-handed" with a double set of operating instruments. An example of such a procedure is the operation devised by one of us (I. D.) for severing the Fallopian tubes close to the uterine cornua without damaging the blood supply in the mesosalpinx. Sterilization is completed by diathermy coagulation of the cornual tubal stumps but preserving the whole length of the Fallopian tubes laterally with blood supply intact, so that, should the patient subsequently request the re-establishment of her fertility, at least there would be a sufficient length of healthy tube for reimplantation. The purpose of such an operation is not only to make the sterilization procedure technically reversible but to remove from the patient the psychological trauma generally associated with taking an otherwise irrevocable step with regard to her fertility.

It is necessary to work "double-handed" to carry out such an operation in which the tube is picked up with one forceps in its mid-portion and put on the stretch while the cornual end is cut either with a second Drapier Palmer drill forceps or with stapledectomy scissors (Fig. 3). The operation is quick and simple if the laparoscope is securely held in the appropriate position, leaving the surgeon's hands free to handle both sets of instruments at the same time. The patient can be discharged home next day.

The snake flexible arm, which must have many other uses, is as good as an extra pair of hands in this type of surgery. It is produced by Polar Hydraulics Limited, Fazeley Road, Tamworth, Staffs, whose co-operation in design is gratefully acknowledged.

FIG. 1.—Showing use of flexible arm in aortic valve replacement.

FIG. 2.—Method of fixing to operating-table and use in laparoscopy.

FIG. 3.—Procedure for reversible sterilization.