in length, and at its distal end has a tapering mount 0.236 in. (6 mm.) in length. At its proximal end there is a female Luer lock fitting, which can be firmly attached to a Luer or Luer lock syringe (see photograph).

Our technique of primary operative cholangiography follows very closely that of Schulenburg (1966). Two points are worth mentioning. Firstly, if the supine patient is tilted to the right by means

of sandbags under the left buttock and lower left chest, then the radiological shadow of the vertebral column will not obscure the definition of the common duct. Secondly, it is useful to dissect out the cystic duct at the beginning of the operation; a ligature is placed round it close to the gall bladder and tied. Immediately beyond this ligature a small cut is made with scalpel or scissors in the wall of the cystic

duct and the tapered mount of the cannula tip is inserted into the duct lumen. A second ligature tied round the duct, distal to the cannula insertion, will now hold the cannula firmly in position. After three films have been taken, injecting 1 ml., 5 ml., and 10 ml. of radio-opaque dye—for example, iodiopamide (Biligradin 50%)—a third ligature is tied round the cystic duct flush with the common duct. The cystic duct is then divided between the second and third ligatures, and the gall bladder and cystic duct (with cannula attached) are removed. By using this technique there is minimal spillage of potentially infected bile into the peritoneal cavity.

The cannula is sterilized and marketed in a sealed plastic envelope. Essentially the cannula is disposable, though it can be used five or six times if carefully washed through postoperatively and then resterilized in a formalin cabinet.

The cannula is made by Portex Ltd., Hythe, Kent, under the title of Stoke-on-Trent cholangiogram cannula. My thanks are due to Mr. D. S. Allen, Product Manager of Portex Ltd., for his help and co-operation.

REFERENCES

- Mirizzi, P. L. (1932). *Bol. Soc. Cirurg. B. Aires*, 16, 1133.
Schulenburg, C. A. R. (1966). *Operative Cholangiography*, p. 9. Butterworths, London.

Simple Inspection by Tube

Mr. J. L. DOUGLAS, General Surgical Unit, Hairmyres Hospital, East Kilbride, Glasgow,

writes: One of the difficulties in the surgery of upper gastrointestinal bleeding is the proper

examination of the inside of the stomach, and I have found that a boiling-tube some 5 to 7 cm. in diameter and about 30 cm. long (such as is normally obtainable from the biochemistry department) is useful.

An adequate gastrotomy wound is made, the usual massive clots of blood are evacuated, and the boiling-tube is inserted. It can be gently pressed against the mucosa of the stomach, even up to the oesophageal orifice, and an excellent view of the mucosa can be obtained. The whole lining of the stomach can be visually examined in a matter of seconds. In Hairmyres Hospital we have used this device, and the illumination from the theatre lamp—even in the depths—is good.

A solid Perspex instrument optically ground, with a lens system and built-in light, would, I am sure, be even better. In fact such an instrument could be used for the examination of any organ—even the heart in the presence of opaque fluid.

The following further applications are suggested. If a bleeding-point suitable for arrest by stitching is identified, a large-bore glass tube can be slid over the boiling-tube to form a caisson. The tube is then removed and the mucosa caught by tissue forceps and drawn into the caisson, forming a cone. Gentle diathermy can be applied to multiple haemorrhagic points. Stitching is accomplished by atraumatic suture material held in a boomerang needle holder. Tying the stitch is by crushing a metal clip round the two ends of the ligature material. The last two procedures require special instruments (see Figs. 1–3), which have been designed in this department as prototypes.

FIGS. 1 and 2.—Modified boomerang needle holder for use within caisson.
FIG. 3.—Clamp for crushing ring ligature within caisson.