with regard to suffering in dogs due to genetic abnormalities. The latter were either accidental and unwanted, or among the defining characteristics and show-points of the breed deliberately cultivated—such as the “ideal” show stance derived from congenitally dislocated hips. Humane understanding had to be learned and was not intuitive.

The National Institute for Medical Research at Mill Hill, in London, was a microcosm of all basic medical research, Sir Peter observed, and a division of animal husbandry had been established there to supply animals and to train animal technicians—now a recognized profession ancillary to medicine. Here the problems of the provision of animals of known genetic constitution and of specific pathogen-free animals had been overcome, despite some ill-informed opposition which had maintained that such

animals were unnatural and results from them therefore useless. Nevertheless, the number of such animals required was less than before, because more factors were controlled and the mortality from unrelated infections was lower.

National Institute for Medical Research

At the National Institute for Medical Research the largest group of animals (about 25,000 per year) was used for assaying drugs and biological substances. No one, Sir Peter said, was satisfied with these methods, and great efforts were being made to develop satisfactory chemical or at least *in vitro* assay methods. Current research there was also

concerned with malaria—which killed about 2.5 million people every year, according to the World Health Organization. Moreover, Sir Peter's own interest in tissue and organ transplantation—which was now being applied to man—had owed its whole technical development to work in animals.

In Sir Peter's view, the use of experimental animals was justified by the benefits brought to mankind both in applied and pure research, and logically one could not approve of the former and not the latter. It was too late to adopt a non-exploratory attitude towards human life, and research using animals was part of such explorations. To stop them now would produce widespread and damaging effects, whereas, Sir Peter prophesied, perhaps within the next 10 years animal experiments would have provided the knowledge to dispense with them.

NEW APPLIANCES

Professor L. F. TINCKLER, department of surgery, University of Singapore, writes: As an adjunct to vagotomy in the surgical treatment of peptic ulceration pyloroplasty is the procedure of choice in facilitating gastric emptying and countering inertia of the stomach consequent upon the denervation. The principle is to increase the calibre of the gastric outlet by rendering the mechanism of the pyloric sphincter incompetent and overcoming any stenosis due to ulcer cicatrization. This aim is simply accomplished by making a longitudinal incision across the pylorus from the gastric to the duodenal side and resuturing the resulting longitudinal

An Aid to Pyloroplasty

defect transversely, either a one-layer or two-layer closure being effected according to the preference of the individual surgeon.

In carrying out pyloroplasty I have found useful a small device with the following features. The instrument (Fig. 1) is a spreader, it has two curved arms coupled by a hinge at one end and bearing at the other pointed hooks directed outwards, sharp enough to engage the tissues but without lacerating them. The action of the hinge is spring-loaded in the direction of diverging the arms of the instrument, the approximation of which is controlled by a small knob, acting with a screw adjustment.

In carrying out a pyloroplasty a small cut is made in the anterior wall of the antrum into which the pyloroplasty spreader is inserted with its hooks approximated, so that the hooked ends bear against the sides of the preliminary incision and under the action of the spring-loading tend to thrust them apart (Fig. 2). The instrument is held at its hinged end and serves as a tractor and a means of steadying the operation area in a manner similar to the action of a tracheal hook during tracheotomy. Next a grooved director is inserted through the antral opening and manipulated through the pylorus into the duodenal lumen beyond. Scalpel or scissors are now used to divide the pyloroduodenal wall, the grooved director serving as a guide, the incision being approximately 1 in. (2.5 cm.) on each side of the pylorus. This step is facilitated by the spreading action of the pyloroplasty retractor. When the incision is completed the pyloroplasty retractor is repositioned halfway along the incision to obtain the maximum spread of the defect, diverting its axis from a longitudinal to a transverse one. The amount of spread exerted by the retractor is controlled by adjusting the position of the small screw-stop on the instrument. Again holding the retractor to steady the operation tissues a series of full-thickness interrupted fine linen-thread sutures are inserted but not tied. When all the sutures are in position the pyloroplasty

retractor is slipped out and removed and the individual sutures are serially tied and cut. The single-layer suture line is reinforced by a flap of omentum secured in place by three catgut sutures.

FIG. 1.

FIG. 2.

Advantages of this instrument that I have personally found are that it facilitates making the pyloroduodenal incision and holds the tissues in the appropriate position for suturing; only one hand is required to manipulate it, as opposed to the two tissue forceps or traction sutures which I have previously found necessary to be held in carrying out pyloroplasty.

This instrument has been made to my specification by Thackray & Company, of Leeds.