PRESERVATION OF FINE INSTRUMENTS*

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As ophthalmic surgery progresses and the operations that can be undertaken become finer and more delicate, the instruments also become more delicate and more easily damaged by handling and rusting. It takes only one small knock on the cutting edge to ruin a trephine that has taken many hours of fine craftsmanship to make and many pounds to buy, and it is the purpose of this short article to indicate how rusting can be eliminated and handling reduced to a minimum.

APPARATUS

A simple metal box will contain the instruments for any intra-ocular operation, including sutures; the instruments required are selected and tested and then placed in the box. The set shown in Fig. 1 is for corneal grafting (lamellar or penetrating), the sutures being contained in the test tube. The box is closed and

FIG. 1.—Set of instruments in metal box.

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sterilized in an oven at 140° for 40 minutes after which it is wrapped in a sterile towel, taped, and labelled ready for use (Fig. 2). Alternatively, the box may be wrapped in brown paper like a parcel and sterilized in the paper.

When the instruments are required for use, the wrapping is removed and the sterile box placed on the surgeon's table. He can pick out instruments as he requires them, and thus no one touches them but himself and no wiping is required, so that the business end of the instrument is touched by no one at all. If the surgeon so desires, the rack can be completely removed from the box and set on his table (Fig. 3).

FIG. 2.—Box wrapped up ready for use when needed.

FIG. 3.—Rack of instruments removed from box.

This box is not an original idea; it is used extensively in France, where it was designed, I believe, by Professor Bonnet of Lyons, and it has been modified by the author to fit English instruments*. Sterilizing ovens* are made in two sizes; the small one takes two such boxes, and the larger one takes many boxes as well as individual instruments in glass tubes. The latter is adequate for the needs of a busy ophthalmic operating theatre; the temperature variation is only 2° throughout the chamber and it can be used for swabs and dressings as well as for instruments (Fig. 4, overleaf).

ADVANTAGES OF DRY STERILIZATION

These are fairly obvious and may be summed up by saying that this method presents to the surgeon a set of dry sterile instruments, the keen edges of which have not been spoiled by rust or handling. Additional fine sutures can be prepared and placed in glass tubes, the mouth of the tube

* The boxes and small sterilizing ovens are made by Down Bros., the larger ovens by the Elm Engineering Works.

being plugged with wool. After sterilization they are placed in cupboards in the theatre, where they are ready for instant use when called for. The same applies to fine forceps, scissors, etc., of all varieties, so that a surgeon

requiring an extra instrument during an operation does not have to wait while one is boiled. Emergency sets for corneal suture, penetrating injuries, and glaucoma operations are kept ready sterilized, so that it is not necessary to "get steam up" in the theatre before the operation can begin.

Since this method of sterilization requires 40 minutes, it is clear that all sterilization must be completed before the list begins, and that there must, therefore, be some reduplication of instruments. It will be found, however, that the longer life of instruments sterilized by this method soon makes up for the extra initial outlay. Moreover, for sac, squint, and other operations which do not involve opening the globe, the instruments can, if desired, be boiled.

The method of dry sterilization has been well tested and can be unreservedly recommended. A good cutting edge is more than half the battle.

FIG. 4.—Elm Sterilair.

Dr. Peter Hansell of the Institute of Ophthalmology took the photographs in Figs 1-3.

NOTE

MR. T. KEITH LYLE, C.B.E., F.R.C.S., has been invited to give the Charles H. May Memorial Lecture at the New York Academy of Medicine on April 21, 1952.