CLXIII. A FILTER OF PYREX GLASS AND STAINLESS STEEL FOR USE WITH SEITZ FILTER-PADS.

By BERT CYRIL JAMES GABRIEL KNIGHT¹ AND
PAUL FILDES.

*From the Department of Bacterial Chemistry (Medical Research Council),
Bland-Sutton Institute, Middlesex Hospital, W. 1.*

(Received 8 May 1936.)

WE have designed a holder for use with Seitz EK bacterial filter-pads (diameter 3 cm.) in which the filtering liquids come in contact only with pyrex glass and a disc of stainless steel. This apparatus has the advantage that toxic metals (e.g. copper) cannot be dissolved by the filtering liquids as from the ordinary metal holder from which the plating (e.g. silver or rhodium) has been worn. Also the glass filter-tubes can be cleaned with chromic-sulphuric acid mixture; this is essential in much work in bacterial nutrition where traces of active material can produce growth.

The design is shown in Fig. 1, drawn to scale. The pyrex glass filter-tubes A_1 and A_2 (made to our design by Messrs James A. Jobling, Wear Glass Works, Sunderland) are supplied with their flanges ground flat. A shallow recess is

Fig. 1.

ground out of the lower piece, of appropriate diameter and depth to allow a stainless steel disc (D), for supporting the filter-pad (F), to lie in it flush with the flat surface of the flange of the lower glass piece. The disc for supporting the filter-pad is cut from high grade stainless steel and drilled with holes (approximate diameter not greater than $\frac{1}{10}$ in.) over the central portion. The whole disc is burnished, including the filtering holes, to eliminate the risk of corrosion. The

¹ Halley Stewart Research Fellow.

flat metal clamping rings (R_1 , R_2 ,) are cut from sheet brass (approximately $\frac{3}{8}$ in. thick), the internal diameter being of a size to clear the glass barrel of the filter tubes, but to clasp the glass flanges. The lower clamping ring is supplied with 3 tapped bushes (B) and 3 dowel pins (P), the upper clamping ring having clearance holes to correspond with the tapped holes and pins. The two rings are drawn together by the 3 screws, using finger-tightening by the milled heads (S).

To assemble the apparatus, the filter-pad is placed on the supporting stainless steel disc, the pad itself acting as a gasket between the two glass parts. With the fingers the screws are tightened just enough to hold the filter-pad in place, and the whole apparatus is wrapped and autoclaved for sterilization. For use the filter is fitted aseptically in the usual way to its appropriate sterile filter-flask, the screws are screwed to finger-tightness and the apparatus is then ready.

We wish to thank Dr C. G. L. Wolf for simplifying our original design of the clamping part.

The whole apparatus or parts of it can be supplied by Messrs A. Gallenkamp & Co. Ltd., Sun Street, Finsbury Square, London, E.C. 2.