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AN ARRANGEMENT FOR USING THE BLADES OF SAFETY RAZORS IN THE MICROTOME.—The safety razors now in general use have cheap blades of thin steel with a keen edge suitable for cutting sections. The price of a blade is so low that it can be discarded as soon as the edge becomes dull, and the labour of sharpening is thus dispensed with. The writer has used blades of this type for some years for cutting sections by hand, and has recently designed an arrangement for holding the blades in a rigid support, so that they can be used in the microtome.

A blade found very convenient for the purpose is that of the Gillette razor. It has two edges. The blade appears to be cut out of a sheet of steel with parallel surfaces, so that, apart from the actual cutting edge, the two surfaces of the blade are parallel; it is thus more easily held in a support than a blade with inclined surfaces. The arrangement for holding the blade consists of two blocks of steel (A) shown in surface view in Fig. 1 and in section in Fig. 2. Each block is wedge-shaped in section, and has two plane surfaces inclined to meet at an acute angle. The blocks are fastened together at each end by the screws (B) and thus form what is practically a razor blade made in two pieces, but without the actual cutting edge. The latter is supplied by inserting one of the above blades (C, Figs. 2 and 3) between the two blocks. The edge of the blade should project a little beyond the blunt edges of the two supporting blocks, and be parallel with them. The adjustment is made easier by the fact that the other side of the blade projects beyond the corresponding side of the supports. The actual amount of cutting edge that should project can easily be found by trial. The less the edge projects, the greater its rigidity; but it must project just far enough for the paraffin block to clear the edges of the steel supports. After the adjustment has been made the supports are screwed tightly together. To ensure the two supports having a uniform grip of the blade two steel washers (D) of the exact thickness of the blade are placed on the screws between the two blocks. Such washers are easily made from a discarded blade which has convenient holes in it.

The blade is cut in two, and each half has a central hole and can be trimmed to form a washer, and placed in the position indicated in Fig. 1.

The resulting composite microtome blade can be at once inserted in the microtome in the ordinary way. The arrangement as described is adapted to the Minot-

Fig. 1.

Fig. 2.

Fig. 3.

Zimmermann microtome, but could be adapted with slight variations to many others. It cuts sections as thin as $2\ \mu$ with success, and gives results equal to those obtained with any blade.

Several advantages may be claimed for this device. The blades may be bought anywhere, and the best two-edged blade costs only 4*d.* They can be stropped by one of the automatic stropers already on the market, or else thrown away as soon as they become dull. For this reason the arrangement should be of great service where large classes of students have to be taught the use of the microtome and would have to provide their own blades. A further advantage is that hard or gritty objects can be cut at the sacrifice of only a cheap blade, without fear of doing damage to an expensive microtome blade of the usual pattern.

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