gous series of bacteriologically active and inactive quaternary ammonium germicides.

References

1. DUBOIS, A. S. *Soap San. Chem.*, 1946, **22**, 125.
2. DUBOIS, A. S., and DIBBLEE, D. D. *J. Milk Tech.*, 1946, **9**, 260.
3. JAMIESON, M. C., and CHAN, M. K. *Canad. Dairy Ice Cream J.*, 1944, **23**; KROG, A. J., and MARSHALL, C. G. *J. Milk Tech.*, 1942, **5**, 343; *Amer. J. Publ. Hlth*, 1940, **30**, 341; WALTER, W. G., and HUCKER, G. J. *Sanitarian*, June-July, 1942.

A Simple Device for Macroscopic Sectioning of the Brain

RALPH F. BOULDIN and WILLIAM HOLZHEIMER[1]

Department of Anatomy, College of Medicine, University of Illinois, Chicago

The principle involved in the macrotome to be described is not original but was seen and used by one of us (R. F. B.) in a much more elaborate and expensive apparatus. We have been unable to discover any American firm which manufactures such a macrotome and have concluded that the one observed was of European make and, therefore, no longer obtainable. For this reason we designed and built an instrument along similar lines, but much simpler and less expensive, which has proved entirely satisfactory.

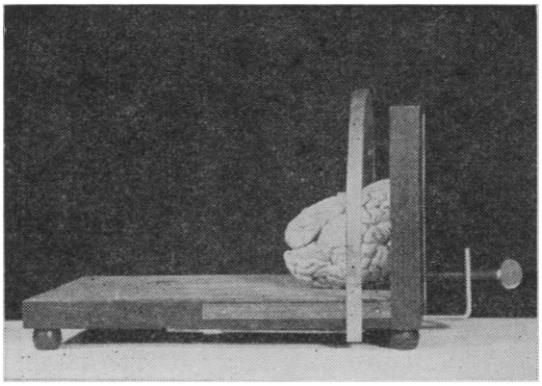

FIG. 1

For the study of the brain and other large organs, such as the liver, it is often desired to have macroscopic sections of uniform and known thickness. This is accomplished readily and easily with the macrotome to be described. The instrument consists of a base and an end board of hard wood with a metal arch, properly supported, which is used as a guide for the knife. The thickness of the section is determined by the distance between the arch and the end board as measured by a millimeter scale attached to the side of the base and adjusted by means of a thumb screw (Figs. 1 and 2). For the base, a piece of hard wood 12 x 9 x $\frac{7}{8}$ inches is used; for the end board one 9 x $6\frac{7}{8}$ x $\frac{7}{8}$ inches. Two countersunk screws are used to fasten the end board at right angles to the base. One piece of bar steel $30\frac{1}{2}$ x $\frac{3}{4}$ x $\frac{3}{16}$ inches is bent to form the arch, the ends being welded and the joint buffed smooth. Two pieces of bar steel $6\frac{1}{2}$ x $\frac{3}{4}$ x $\frac{3}{16}$ inches are used for the side guides, which prevent side sway and twisting of the arch. One piece of bar steel $12\frac{1}{2}$ x $\frac{3}{4}$ x $\frac{3}{16}$ inches forms the center guide and pressure bar to regulate the thumb screw. This piece must be drilled and threaded to accommodate a $\frac{3}{8}$ inch thumb screw having at least 2 inches of thread. A small piece of light metal should be fastened to the back of the end board for the thumb screw to work against and to prevent it from cutting into the wood. Four keepers of metal are used in which the guides move. To complete the apparatus four rubber feet are attached for support. Details of construction are shown in Fig. 2.

The blade used to cut the sections is 18 x $\frac{1}{2}$ inches and is drawn taut in a hacksaw handle.

To cut the sections, the thumb screw is turned until the arch reaches the desired distance from the end board, as measured by the millimeter scale. The specimen is placed on the base so that it touches the end board in the desired plane. The knife is then placed against the arch and drawn through the specimen with one long stroke, taking care that it touches both sides of the arch throughout the entire stroke. In holding the specimen on the base and against the end board only a moderate amount of pressure should be exerted, *i.e.* sufficient to keep the specimen from moving.

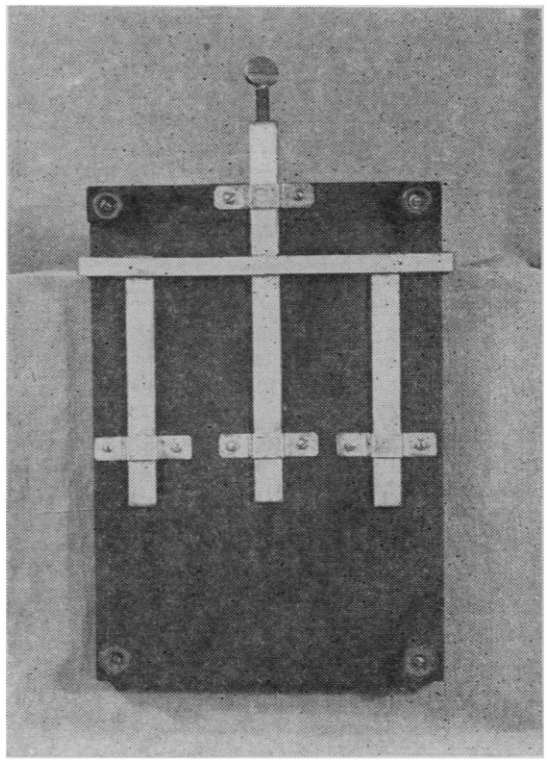

FIG. 2

Formalin-fixed specimens have been sectioned at 3 mm. with little difficulty and at 5 mm. with no difficulty. Thicker cuts have also been made. Removal of the pia mater facilitated sectioning of the brain. It was found, however, that brains embedded in agar and chilled did not section evenly because of the resistance offered to the knife by too firm a block.

[1] We wish to express our appreciation to Otto F. Kampmeier, head of the Department of Anatomy, for affording us the facilities to do this work.