washed with alcohol and ether, and dried in a vacuum desiccator. Yield, 13.5 gms (85 per cent. of theoretical). Upon recrystallization from 80 per cent. alcohol glistening white plate-like crystals are obtained. No impurities were detected by polarographic analysis by Dr. R. J. Winzler.

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DRAWING LAMP FOR CAMERA LUCIDA

ONE of the main difficulties in drawing microscopic objects by the aid of a camera lucida is that of balancing the brilliance of light on the drawing paper with that coming through the microscope. It is generally done by laboriously pushing a lamp around the table or by neutral filters which dim the image.

By the simple expedient of putting a variable resistor in series with the lamp, quick and easy control of illumination on the paper is accomplished. Such a scheme is shown diagrammatically in Figure 1, which indicates the connections of the three electrical components, power plug (P), rheostat (R) and lamp socket (S). In wiring the only caution to observe is that the rheostat turns *clockwise* to increase brightness of the bulb.

On the right in Fig. 2 is an easily made unit adaptable to any set-up of the microscope. It consists of a $3'' \times 4'' \times 5''$ iron shield box (B) to hold the rheostat (R) and act as a base for the 15″ gooseneck tubing (T) and socket (S). These boxes have two loose sides which are held in place by screws in each corner. On the side used as a top are mounted the rheostat and a tripod fixture known as a "crowfoot" into which screws the flexible tubing. On the inside of the bottom plate a pound or so of sheet lead is bolted for ballast, and ventilation holes are punched in the sides and covered by metal screening. The socket has a push-through switch and holds a tubular half-silvered showcase bulb (L). As this bulb is small it causes less interference with the camera lucida mirror than the usual bulb and reflector of a desk lamp. The Mazda bulbs are made in two ratings 25 and 40 watt (120 volt). The 25-watt bulb is entirely adequate and the rheostat should be 500 ohms for proper dimming, and as it carries a maximum current of 0.25 amps. it must be in the 50 watt class.

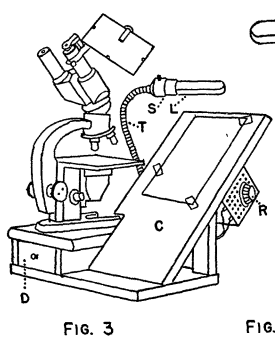

FIG. 3

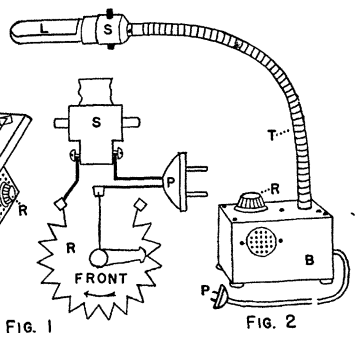

FIG. 1

FIG. 2

For one who uses a binocular microscope and has much drawing to do it is well worth while to build the wooden frame with drawing board (C) and microscope stand in one piece (Fig. 3) which assures that all drawings are at the same magnification; paper can be conveniently fastened down by Scotch tape. The part of the camera lucida which fastens to the microscope is left in place and only the mirror removed so a dust cover can be put over the instrument at night. The gooseneck tubing (T) is fastened by the crowfoot directly to the frame, and the rheostat (R), enclosed by a guard of perforated metal, is mounted conveniently for the drawing hand. The board (C) must be inclined from the horizontal exactly as are the ocular tubes from the vertical to avoid distortion.

It will be noticed that the microscope is slightly elevated by the frame. We have found that this puts the eyepieces in a more comfortable position which eliminates some of the "stooping" associated with microscope work, and Dr. D. H. Linder has taken advantage of this space to insert a small drawer (D) in which to keep lens paper, micrometer-ocular, etc. This stand and lamp, as shown in Fig. 3, will surprise with its convenience anyone used to changing to the monocular, assembling the camera lucida and drawing on a flat table with daylight or an ordinary desk lamp. It is so easy to use that many objects can be sketched "when you see them" rather than waiting until some later time or being mislaid or neglected completely.

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BOOKS RECEIVED

BENNETT, JESSE LEE. *The Diffusion of Science.* Pp. ix + 141. Johns Hopkins Press. $2.25.

BERNHEIM, FREDERICK. *The Interaction of Drugs and Cell Catalysts.* Pp. ii + 85. Burgess Publishing Company, Minneapolis, Minn. $2.25.

BUERGER, M. J. *X-ray Crystallography.* Pp. xxii + 531. Illustrated. John Wiley and Sons, Inc. $6.50.

FINCH, VERNOR C. and GLENN T. TREWARTHA. *Elements of Geography; Physical and Cultural.* Second edition. Pp. xii + 823. Illustrated. Ten plates. McGraw-Hill. $4.00.

FINCH, VERNOR C. and GLENN T. TREWARTHA. *Physical Elements of Geography.* Pp. x + 641. Illustrated. Ten plates. McGraw-Hill. $3.50.

LEHMAN, CHARLES H. *Analytic Geometry.* Pp. xiv + 425. John Wiley and Sons, Inc. $3.75.

LEVINE, MAURICE. *Psychotherapy in Medical Practice.* Pp. xiv + 320. Macmillan. $3.50.

MACY, ICIE G. *Nutrition and Chemical Growth in Childhood.* Vol. I. Pp. xxiv + 432. Illustrated. Charles C Thomas, Springfield, Ill. $5.00.

Physical Science. Edited by WILLIAM F. EHRET. Pp. x + 639. Illustrated. Macmillan. $3.90.