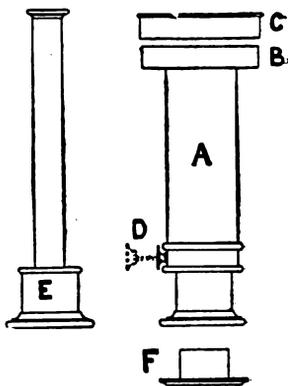


Simple Apparatus for Drawing and Photographing Microscopical Sections.*—This apparatus, designed by J. Tandler, consists (1) of a drawing-box carrying on its top a photographic bellows; (2) of a box enclosing the light source. The drawing-box is closed in front, open behind, and has a trapezoidal-shaped base of dimensions: rear 65 cm., front 35 cm., width 35 cm. The front wall is strong and 55 cm. high; the back wall (oblique) is not so high, and slopes roof-wise towards the level top. The reason for this shape is that the observer, sitting at the side of the box, may comfortably work with his right arm in the box. In both the front and back walls there is a series of slides for receiving the drawing board. A right-angled totally-reflecting prism with the hypotenuse blackened, is placed over the upper end of the bellows. Rays of light originating from the light-source then pass horizontally through the Microscope, are reflected at the prism, and pass vertically downwards through the bellows on to the drawing board in the box. The source of light is generally an incandescent lamp. The author keeps the arrangement installed in the rear of his workroom, the front (closed) side being towards the window. In this way he finds that the image projected into the box is bright enough without further darkening of the room. By removing the prism, and by setting the bellows horizontally on a board with runners, the apparatus can be used for photomicrography.



(4) Photomicrography.

J. W. Gordon's Apparatus for Photomicrography.†—In this application of photography to the Microscope, the instrument is used in a vertical position. The apparatus consists of a tube A, about 6 in. long, which is placed over the eye-piece. At the upper end of this tube B, a photographic plate, 1½ in. square, is held by means of a cap C, in a light-tight chamber; between this and the eye-piece is a projection lens focused upon the plate, and a small exposing shutter D is placed in the tube for making the exposure (fig. 152).



FIG. 152.

If the observer's eyesight be normal, the photograph will be sharp when the Microscope is in its ordinary focus, but, as almost everyone has slight errors of vision, it has been found desirable to supply a duplicate tube E, with a focusing eye-piece of high power, which is first placed on the instrument in order to focus, and is then replaced by the camera.

* Zeitschr. wiss. Mikrosk., xxi. (1904) pp. 470-4 (3 figs.).

† R. and J. Beck's Special Catalogue, 1905, 4 figs.

A small flange F fitted over the eye end of the Microscope is required, to form a table upon which to rest the camera.

In order to overcome the tendency of the body to move downwards during a prolonged exposure, a block of metal G, which slides up and down the coarse adjustment, and can be clamped in any position, is supplied.

A yellow screen H (fig. 153), fixed on a stand with universal motion, should be employed between the Microscope mirror and the light in connection with isochromatic plates for all powers higher than a $\frac{3}{4}$ in., otherwise the focus cannot be relied on with certainty.

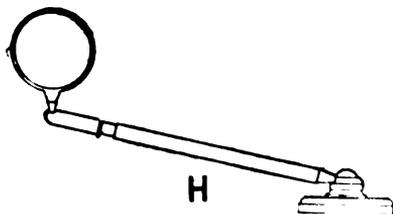


FIG. 153.

With this apparatus photographs can be made $1\frac{3}{4}$ in. in diameter, having such fine detail that they will bear enlargement to any reasonable extent. One of the chief advantages of this extremely simple method of photomicrography is

that the optical performance of the Microscope is exactly the same as when it is used for visual observation. The apparatus is made by the firm of R. and J. Beck.

A Perfectly Steady Stand for Photomicrography.*—J. Ries has sought to attain (1) the advantages of the Zeiss large photomicrographic camera by a less costly construction; and (2) to contrive an apparatus which shall be useful for all kinds of photography. The Zeiss model requires two tables, one for the Microscope and one for the camera, so that the unavoidable slight disturbances of the camera due to manipulation shall not extend to the Microscope. The cost and the dimensions of so much apparatus practically limit its use to institutions. The author seeks to make his Microscope perfectly steady and at the same time independent of the camera by mounting it securely on a heavy triangular base. This base fits freely but accurately within a triangular frame to which the optical bench with camera is attached. Thus the size of the whole is kept within moderate limits. The bellows are 45 cm. long, and are controlled by a double rod-rack gear. The front and back frames are secured on two platforms clamped to the optical bench and governed by the rod-gear. The camera can be easily set up or removed. It may be used without the Microscope, and thus serve for all photographic purposes. The author illustrates his method by suitable diagrams.

H., Dr.—*Unsichtbares Licht im Dienste der Mikroskopie.*

[Mainly deals with Dr. Köhler's photomicrography with ultra-violet rays.]

Central-Zeit. f. Opt. u. Mech., xxvi. (1905) p. 34.

SIMON ET SPILLMANN, L.—*Application de la photographie à la numération des éléments figurés du sang.*

Comptes Rendus, lvii. (1904) pp. 659-60.

* *Zeitschr. wiss. Mikrosk.*, xxi. (1904) pp. 475-8 (5 figs.).