The cellulose walls and protoplasm were not deeply colored, so that the shapes of several superimposed layers of cells could be determined effectively.

The slides were studied under oil immersion with a binocular monobjective Zeiss microscope, using Köhler illumination (7) and green and orange Wratten filters. The preparations are beautiful. The data obtained will be published elsewhere.

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An Improved Moist Chamber Slide for Use in Micromanipulation

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The moist chamber slide to be described here is essentially a modification of that described by Chambers and Kopac (*1*). Although the chamber considered here is designed for use with the Chambers micromanipulator, its basic construction features may be adapted readily to any chamber type according to individual preference or need (*1*).

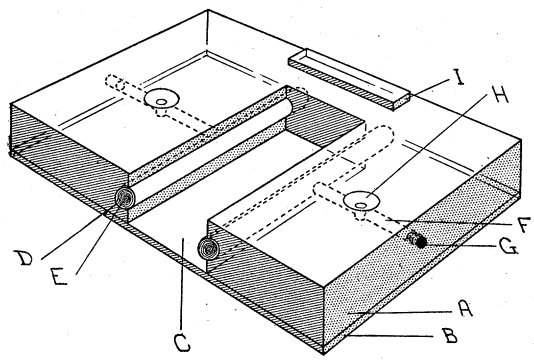

Fig. 1

The moist chamber slide consists primarily of a sheet of plastic (Fig. 1A), $2'' \times 3'' \times \frac{3}{8}''$ thick, cemented by means of Clarite to a standard 1-mm-thick $2'' \times 3''$ glass microscope slide (B). A centered, rectangular-shaped notch cut in the front edge of the plastic sheet constitutes the moist chamber proper (C). A rounded groove (Figs. 1D, 2) running the length of each side wall of the moist chamber holds a small roll of filter paper (E). Small drilled channels (F) extending from each edge of the plastic sheet and opening into their respective grooves in the side walls of the moist chamber (D) also hold small rolls of filter paper. The outside ends of these channels are closed by means of small stoppers (G). Each lateral channel (F) opens onto the top surface of the plastic sheet through a vertical funnel-shaped channel (Figs. 1H, 2). A small plastic strip welded on the top surface near the rear end of the moist chamber constitutes a coverslip stop (I).

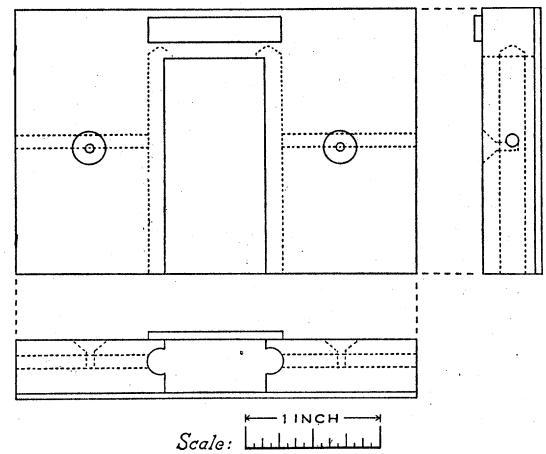

Fig. 2

In ordinary use, the chamber is moistened simply by the periodic addition of drops of water to the funnel-shaped channels. The filter paper rolls, by capillarity, quickly conduct the water directly to the critical area of the moist chamber. If one is studying simple qualitative influences of diverse water-soluble gases on the cells in the hanging drop, aqueous solutions of such gases also are introduced into the moist chamber in the same way, but the funnel-shaped channels are covered in between times by small coverslips sealed down with vaseline to prevent the diffusion of gas from these points. This method of keeping the chamber moist has several distinct advantages over the standard moist chamber slide. It precludes the chance disarrangement of the manipulation needles when in use. Further, it provides a measurable control of the relative amount of moisture within the chamber when this is essential. It dispenses with the interferences so commonly occasioned by filter paper strips within the chamber and excess water on its floor.

The detailed measurements necessary for the construction of this moist chamber slide may be obtained by applying the 1″ scale to the construction drawings (Fig. 2). The various properties of sheet plastic make it a material of choice and one very easily worked. Its uniform thickness virtually eliminates the necessary but usually laborious task of leveling the walls of the chamber.

Reference

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