

A MORE EFFICIENT MOLD FOR PLASTIC EMBEDDING

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INTRODUCTION

As the technique for plastic embedding becomes more and more familiar to biology departments everywhere, the need for improving and modifying its inefficiencies becomes more and more apparent. One such inefficiency is the time-consuming and expensive method by which a plastic block is usually finished. The sides and edges of the block must be trimmed to remove the rounded corners left by the mold; the mold has such a shape (instead of squared edges) for easier removal of the plastic block. The surface layer of the block must be sanded down sometimes three-sixteenths of

an inch; the surface layer of the block always remains tacky and unhardened because of its contact with the air. These two steps involve time, expensive tools, and a large loss of costly plastic. Although the sanding and buffing which follow these steps are unavoidable, the rounded edges and tacky surface layer may be eliminated by using a collapsible mold-form with a drying agent such as calcium chloride.

COLLAPSIBLE MOLD-FORM

The mold-form which is pictured in Figures 1 and 2 is a wooden box of two parts. The two wooden sides have a tongue-and-groove arrange-

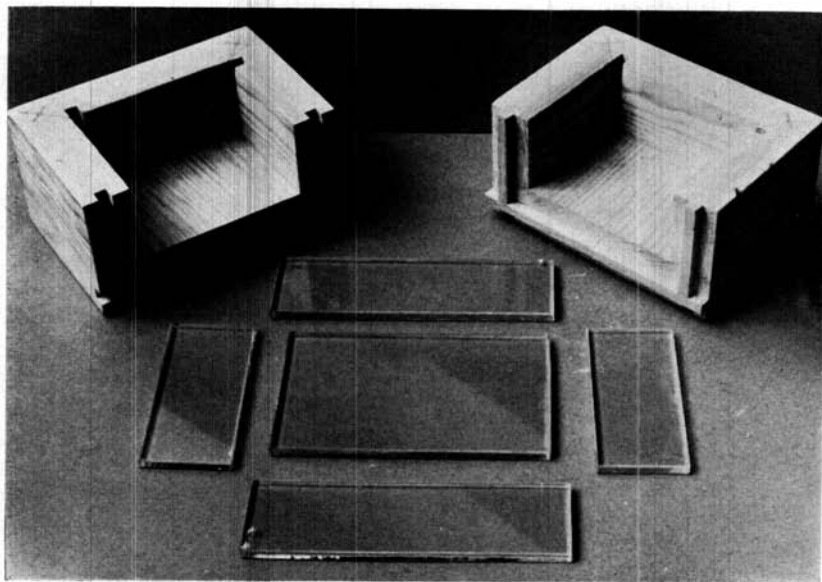


FIG. 1.—Collapsible mold-form taken apart.

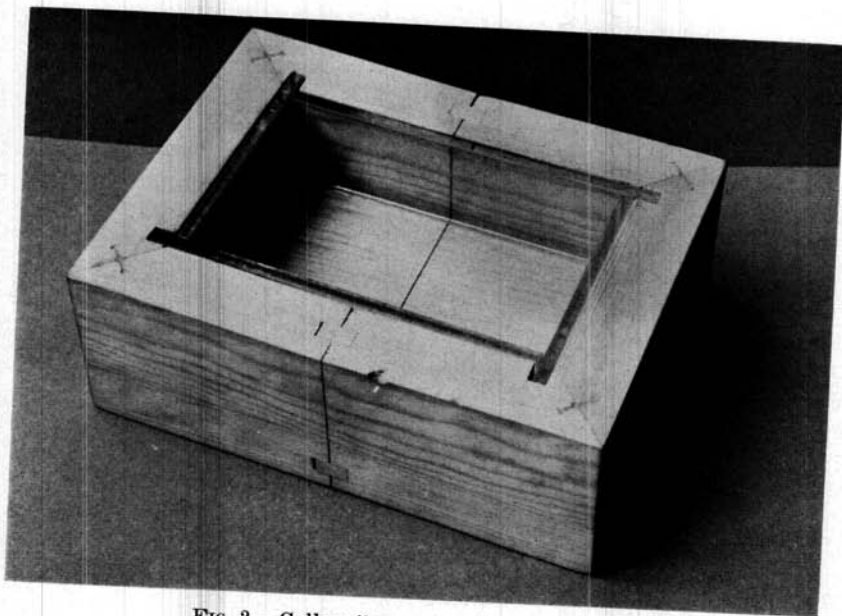


FIG. 2.—Collapsible mold-form completed.

ment for tighter joining and, inside, the bottom and four sides are all separate pieces of glass. Figure 2 shows the completed form with its squared inside corners that make trimming or cutting unnecessary. Its internal dimensions allow for a plastic block 5" by 3" with a thickness up to 1.5". Because of the tight joints and thick walls, the form is resistant to the usual 60° C. temperature of the curing oven and may be used indefinitely. Finally, the removal of the plastic block is simplified, just pull apart the two sides.

The depth of the tacky surface layer may be reduced considerably by sealing off the plastic from the moisture-laden air in the following way. To the underside of a piece of plate glass fix a small cap containing a drying agent such as calcium chloride. The glass is then sealed to the top of the mold-form with vaseline,

leaving a chamber over the surface of the plastic. During the curing process, the vaseline melts, and the expanding, moisture-laden air escapes. Later, upon cooling, a partial vacuum is formed in the chamber forcing the glass downward. At the same time, the vaseline solidifies and keeps new moisture out of the chamber and moisture already present is absorbed by the drying agent. Tackiness is reduced to a point where only normal sanding and buffing are necessary.

If both the collapsible mold-form and the drying apparatus are used, there is an elimination of the usual sawing and excessive sanding involved in finishing a plastic block. The reduction in the overall amount of plastic used results in a saving of time and cost, and, finally, the plastic block may be finished without the aid of expensive machinery.