photography, including observations of the polarization of the radiation. A knowledge of the droplet size in the cloud would also be necessary.

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An Inexpensive Inoculation Chamber[1]

Plant tissue culturists working in sterile or aseptic atmospheres often do not need large areas in which to work. A small, portable chamber will usually suffice to prevent microorganism contamination to their culture containers. For this purpose, a small transfer cabinet was constructed simply and inexpensively. As can be seen from Fig. 1, it consists of plywood backs and sides and lucite top and hinged, slanting panel.

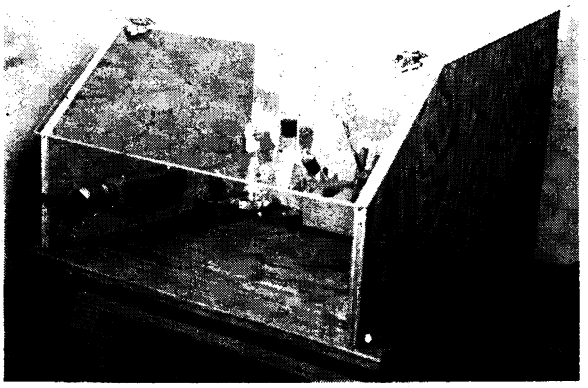

FIG. 1. Portable inoculation chamber.

Provision is made for a small light and necessary materials and working implements; if desired, an ultraviolet lamp may be placed on the back or top near the rear of the chamber. In the case cited, a Vycor No. 830-A, 16-in. ultraviolet lamp is used, attached to the plywood back, just below the lucite top (not shown in Fig. 1).

The cabinet has proved successful in everyday work, both from the standpoint of convenience and aseptic protection. It can be easily moved and adapted to any work area.

More details on the construction and dimensions are given in *Turtox News* (Apr. 1954).

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Geology of the Bedford Shale and Berea Sandstone in the Appalachian Basin

The Berea sandstone of early Mississippian age has been an important source of oil and gas in the Appalacian Basin for many years. This formation and the underlying Bedford shale are exposed at the surface in a long, narrow belt extending from northern Kentucky northward to Berea, Ohio, then eastward into Pennsylvania. From their outcrop, these beds dip east and south under the surface in eastern Ohio, western Pennsylvania, West Virginia, and eastern Kentucky. A study of the Bedford shale and the Berea sandstone at the outcrop and in the records of many thousands of wells drilled to these formations in the search for oil and gas has been completed recently by the U.S. Geological Survey, and the results are now being processed for publication. This study provides an understanding of the paleogeography of the region at the time the rocks were deposited.

In early Bedford time the region was flooded by a shallow arm of an epicontinental sea. This sea arm—the Ohio Bay—covered parts of Ohio, western Pennsylvania, western West Virginia, and eastern Kentucky and was bounded on the west by the Cincinnati arch, on the north by uplands in Ontario, and on the east and southeast by the low-lying Catskill delta of Devonian age.

From the upland in Ontario a vast river, the Ontario, carried sediments that were mainly red into the northern end of the Ohio Bay and deposited them on a delta that built southward. The sediments deposited above water in the main body of this delta retained their red color; those deposited under water were bleached to gray. Along the delta shores waves winnowed the sediments, removed the fine muds, and left the silts in offshore bars. One of these bars, in southern Ohio, is about 80 mi long and 6 mi wide. As the delta built southward, streams carrying mud and silt meandered slowly back and forth across the northern part of the delta and many channels became filled with mud and silt. By late Bedford time, the delta extended southward into northern Kentucky.

At the close of Bedford time, the areas to the north of Ohio Bay in Ontario and to the east in Pennsylvania and West Virginia were unwarped. The Ontario River cut rapidly and deeply into the northern part of the delta and abandoned the southern part by breaking out of the main channel and cutting southeastward. The sea soon encroached on the southern part of the delta.

In early Berea time, a vast quantity of fine sand was carried into northern Ohio by the Ontario River and deposited in the deep scour channels cut in the northern part of the delta in late Bedford time. These stream channels apparently were filled rapidly by this influx of sand and abandoned, for quarries at Berea and Amherst, Ohio, have quarried stone from these sand-filled channels that lie in Bedford shale, yet few fragments of shale are found within the quarry stone.

On the eastern side of the Ohio Bay, in West Vir-