PHOTOGRAPHS WITHOUT SHADOWS.

A large percentage of the half-tone reproductions from photographs, for illustrating Experiment Station Bulletins, are greatly reduced in value because of a lack of detail caused by heavy shadows, resulting from the use of opaque backgrounds near the objects photographed. To overcome this difficulty and to make such pictures of more value to specialists working in the fields of entomology, botany, and horticulture, a device, which is the outcome of combining several well-known principles, is here represented.

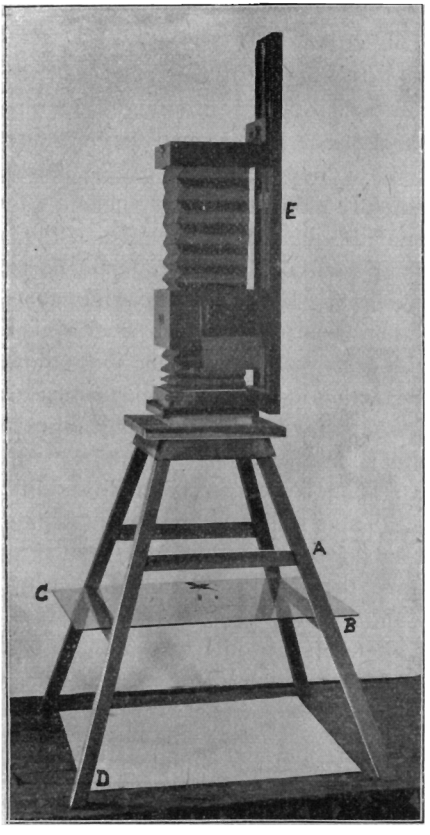

FIG. 10.

Many details can be easily photographed and reproduced by this arrangement which are usually obtained by pen and ink drawings, and the personal equation entering into such work is thus eliminated.

The salient features of this device are: no shadows, accuracy of colour values and form; details and time are saved. All these features are evident from a glance at figure 11, except, perhaps, the saving of time; but after a second thought, this is also obvious, as the objects to be photographed are simply laid on a horizontal plane instead of being fastened to a perpendicular surface.

Dr. Holland, of Pittsburgh, Pa., a Lepidoptera specialist, on a recent visit to our Station, saw the arrangement and was much pleased by the advantages it offers to any of his plans for obliterating shadows in photographing butterflies and moths.

Pictures being more easily understood than descriptions, we have made a photograph of the outfit shown in figure 10, and also one showing a butterfly taken with the device, figure 11.

The apparatus consists of a four-legged stool, in this case 2½ feet high, with an opening in the top and a copying camera placed over the hole. A pane of glass (C) is now placed on the upper or lower rounds of the stool (A or B), according to the distance you wish your object to be from the lens. The objects to be photographed are placed upon the glass, and for a background a sheet of paper or other material is laid on the floor (D) under the glass. In this case a white background is used because the butterfly is principally of a dark colour. By a glance at figure 11 you will see that the objectionable shadows are obliterated.

In photographing pinned insects it is necessary to have some scheme for holding them on the glass in the position desired. This is easily done by gluing a small piece of cork on the glass surface in which to insert the pin holding the insect. It is necessary to have the cork small enough so that it does not protrude beyond the specimen when looked at through the camera.

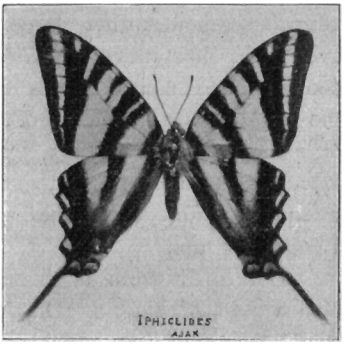

FIG. 11.

This device can be easily modified to suit an ordinary view camera by simply adding a piece of board to the top of the stool and letting it extend in a perpendicular manner similar to E in figure 10. By having a hole in this board one can fasten a camera in place with a thumb-screw, precisely as it is fastened to a tripod, with the exception that the lens is directed downward.

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A NEW TYPHLOPSYLLA FROM MEXICO.

BY CARL F. BAKER, FORT COLLINS, COL.

Belonging to that group of the genus having head combs arising in front of the antennal grooves in a line nearly perpendicular to the long axis of the head, instead of along the lower margins of the cheeks, and which includes the two species *gracilis* and *fraterna*.

Typhlopsylla mexicana, n. sp.—Female. In form resembling *T. musculi*. Head rather strongly pointed, face receding. Bristles on head numerous, strong and spine-like, one on either side of extreme tip, short

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