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Experiment Station

A SIMPLE DEVICE FOR DEHAIRING INSECT EGG MASSES

The egg masses of some lepidopterous insects are covered by a mat of hairs that for some research purposes must be removed. Doing this by hand is tedious. Besides, the hairs on the egg masses of certain insects such as the gypsy moth (*Porthetria dispar* [L.] and the browntail moth *Nygmia phaeorrhoea* [Donov.]) can cause severe allergic reactions in persons who are exposed to them.

To overcome these difficulties, a mechanical dehairing device has been developed. This device consists of a wide-mouthed 1-quart glass jar, a strainer soldered to a metal rim, a screw cap containing a filter for trapping the hairs and debris, and an air inlet (fig. 1).

The strainer, made of a cup-shaped piece of wire mesh, is soldered to a metal rim insert that fits snugly into the mouth of the jar. The mesh is

NOTICE

This U. S. FOREST SERVICE RESEARCH NOTE is the first of a new series of research publications by the Northeastern Forest Experiment Station. In this new series, which has been adopted as standard for all the Forest and Range Experiment Stations of the U. S. Forest Service, the symbol NE will designate publications of the Northeastern Station.

This new series replaces the Northeastern Station's series formerly known as Forest Research Notes. In like manner, the series of Station Papers previously published by the Northeastern Station will be designated from now on as U. S. FOREST SERVICE RESEARCH PAPERS, and will be identified by the symbol NE and a number.

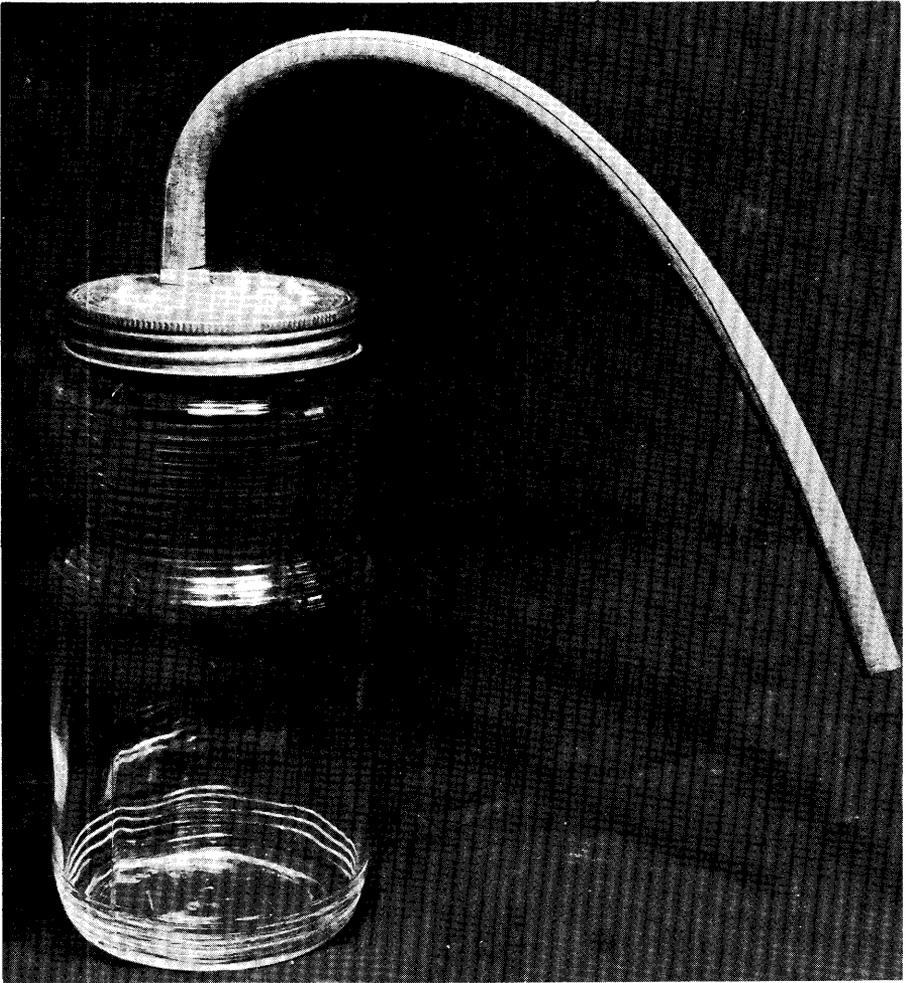


Figure 1.—The device developed for dehairing egg masses of certain lepidopterous insects. Air forced in through the tube loosens the hairs from the egg masses, and as the air escapes through the perforated cap the hairs are trapped in a filter pad.

of a size to permit passage of the hairs but to prevent passage of the eggs.

The screw cap is perforated with thirty $3/16$ -inch holes for air outlets. A hole to receive the air inlet tube is also drilled in the cap. This hole is located off center in the cap to create an effective air current inside the jar. A filter pad of cotton, fiberglass, or some similar material is placed inside the screw cap and is held firmly in place by a circular piece of 16-mesh metal screen and a ring-shaped gasket of hard cardboard (fig. 2).

The device is used as follows. The egg masses, dry and preferably broken up to facilitate dehairing, are placed in the jar. Enough to cover the bottom comprises a workable charge. Then the unit is assembled, a flexible tube is attached to the air inlet, and air is forced into the jar.

The air current in the jar agitates the egg masses and separates the hairs and debris from them. The hairs and debris are carried by the air flow to the filter pad, where they are trapped.

The air flow should be regulated so that it will not injure the eggs. In field use portable sources of air can be used, such as an inflated tire tube supplied by a foot-operated pump.

The egg masses are completely dehaired in about 2 minutes. After use, the filter pad is removed and burned (fig. 3).

This device has been used extensively in experimental work at the Forest Insect Laboratory of the U. S. Forest Service Northeastern Forest Experiment Station at New Haven, Conn., and the Bacteriology Department of the University of Connecticut at Storrs, Conn.

Use of the device has facilitated egg counts from gypsy moth egg masses collected in the field and has provided clean dehaired eggs for

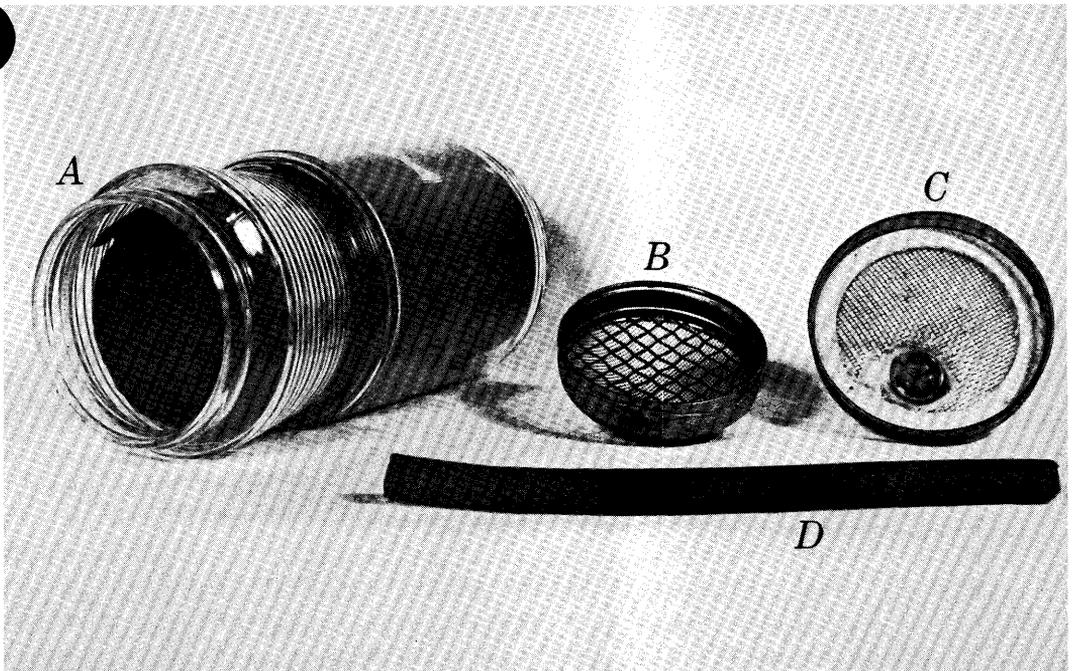


Figure 2.—The parts of the dehairing apparatus. *A*, the glass jar; *B*, the strainer; *C*, the cap with filter pad; and *D*, the air inlet tube.

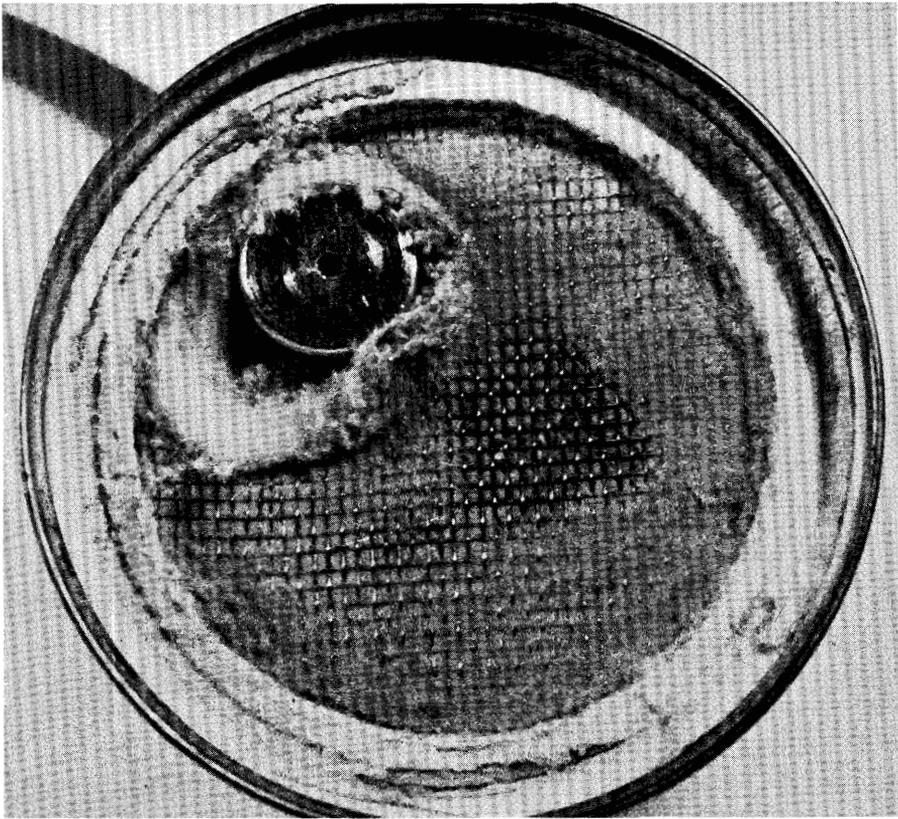


Figure 3.—Inside of the cap after use, showing the mat of insect hairs trapped on the filter pad.

making special culture media. At the same time it has no doubt lessened the exposure of research personnel to allergenic insect hairs.

In developing this device, the authors made use of common materials available to them, including an instant-coffee jar, a common wire tea strainer, and a tubeless-tire valve stem. Cost of making one dehairing device was about \$1.

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