

## A CAGE TO SIMPLIFY THE REARING OF THE GREATER WAX MOTH, *GALLERIA MELLONELLA* (PYRALIDÆ)

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Mason jars (Haydak 1936) have been used for some time at this Institute as cages for the rearing of the Greater Wax Moth, *Galleria mellonella* (L.); however, they have proved to be somewhat inconvenient. Larvæ, in the later instars, produce an excessive amount of frass which tends to mould as it accumulates on the bottom of the jars. This necessitates transferring the larvæ to fresh jars of food at regular intervals. Because the larvæ spin their cocoons and pupate either in the mess of food and frass or on the upper walls of the Mason jars, it is often difficult to remove the pupæ, required for host material, from the jars without injuring them. These problems are overcome with the lantern-globe cage in which 200-250 healthy larvæ, that produce pupæ of  $207.8 \pm 13.5$  mgm. in approximately 42 days after oviposition, can be reared.

Essentially, the lantern-globe cage (Fig. 1) consists of an ordinary  $4\frac{3}{4}$ -inch high, squat type, glass lantern globe (g) with a  $3\frac{3}{4}$ -inch diameter upper opening and a 3-inch diameter lower opening (inside dimensions), equipped with a lid (1) and a base (b) of copper screening (50 mesh per inch) soldered to  $\frac{3}{8}$ -inch high metal rims that fit snugly over the lantern globe. The base (Fig. 1, b) of the cage has three metal legs ( $\frac{1}{8}$  inch in diameter) soldered to its rim equidistant from each other which raise the cage  $\frac{1}{2}$  inch above the tray (t); this allows for better circulation of air through the cage. A 4-inch diameter rack (Fig. 1, r) of copper screening (14 mesh per inch) rests on the lower shoulder of the globe and supports the food. A piece of copper screening (13 inches long by  $3\frac{1}{2}$  inches wide), pleated crosswise and shaped to form an 8-pointed column (Fig. 1, s), is placed on the rack of copper screening (r). It (Fig. 1, s) serves as a support on which the mature larvæ spin their cocoons and pupate. The cocoons, containing pupæ, are easily removed from this support without injury.

A variety of foods (Haydak 1936 and 1941; Good, Morrison & Mankiewicz 1953; Smith 1937; and Waterhouse 1959) have been used to nourish *G. mellonella*. At this Institute, stock cultures have been very successfully reared on a diet prepared as follows: to Pablum<sup>1</sup> (420

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<sup>1</sup>Mead Johnson of Canada Ltd., Belleville, Ontario.

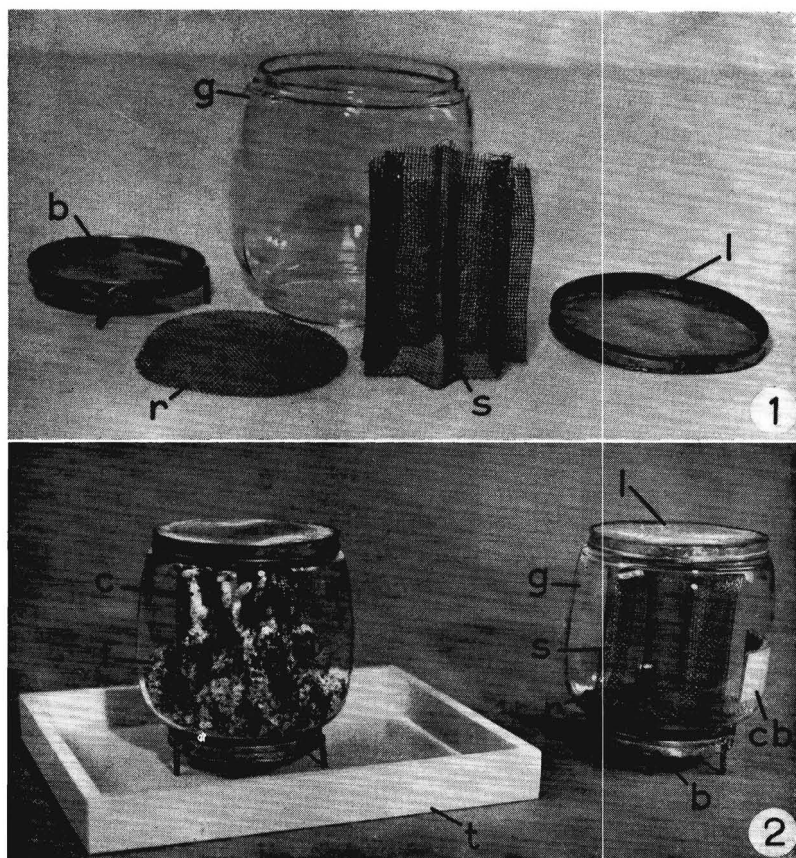


Fig. 1, An unassembled lantern-globe cage for the rearing of *G. mellonella*, showing its component parts. Fig. 2, An assembled lantern-globe cage (right) before the addition of food, and a similar cage (left) containing food (f) and pupated wax moths (c) on the support of copper screening. Abbreviations: b, base; c, wax moth cocoons; cb, corrugated cardboard; f, food; g, lantern globe; l, lid; r, rack; s, support; t, tray.

gm.) and ground brood comb (20 gm.) are added white honey (150 ml.), glycerine (150 ml.), and tap water (30 ml.) which have previously been thoroughly mixed together in a Waring Blender. The resultant food has a consistency of damp sawdust.

One newly emerged female and two male wax moths are put in each lantern-globe cage. Usually, within 24 hours eggs are laid between the wall of the cage and a piece of corrugated cardboard (approximately

1 by 3 inches) (Fig. 2, cb), previously attached to the inner wall of the cage by cellulose tape to facilitate oviposition. After the female has finished depositing her eggs, the adult moths are removed from the cage, the rack (Fig. 2, r) and support (s) of copper screening are placed in the cage, and food (f) is put on the rack between the pleats of the support.

When reared at a temperature of  $82 \pm 1^\circ$  F. and a relative humidity of  $37 \pm 3$  per cent, the eggs hatch in 8 to 10 days and the larvæ immediately crawl to the food. The first instar larvæ do not escape from the cage, as long as the food touches the corrugated cardboard (Fig. 2, cb) on which the eggs are laid. When all the eggs have hatched, the cardboard strip (cb) is removed from the cage. More food is added through the upper opening of the cage as required.

The mesh in the copper screening rack (Fig. 1, r) is small enough to adequately support the food and larvæ, yet large enough to allow the frass to fall through it onto the base (b) of the cage, from which it can be readily removed without disturbing the larvæ. Because some of the fine particles of the frass continuously fall through the mesh of the base (b), the cages are placed on trays (Fig. 2, t).

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