

# CARPENTERWORM MOTHS AND CERAMBYCID HARDWOOD BORERS CAUGHT IN LIGHT TRAPS

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## ABSTRACT

A portable, battery-operated light trap was used in hardwood stands in Mississippi. Ten species of hardwood borers were captured with carpenterworm moths being taken in the greatest numbers. Many cerambycid borers were also captured.

**Key Words:** Light trap, forest insects, carpenterworm, cerambycidae.

There are few reports on the attraction to light of insects that bore in hardwood trees. Munro and Fox (1934), and Rivas (1964) had little success in capturing carpenterworm moths, *Prionoxystus robiniae* Peck. However, we used a portable light trap that caught large numbers of carpenterworm moths and also adults of other hardwood borers.

**Design.** In designing the trap, several desirable features were incorporated. These were small size and weight, a trouble-free independent power source, an automatic switch to turn the light on at night and off in daylight, incandescent light, and low initial and maintenance costs.

The trap consisted of an 18 × 18 × 20 in. wooden frame covered with screen wire and equipped with a drawer for removing the trapped insects. A receptacle with a 25-watt, 12-volt incandescent light bulb was attached between three metal flanges mounted over a sheet metal funnel which extended through the top of the trap (Fig. 1).

Electrical power was supplied by an ordinary 72 Amp/hr 12-volt automobile storage battery. A transistorized amplifier controlled by a cadmium sulfide light cell automatically turned the power on at dusk and off at dawn.

**Operation.** Two of the above described portable light traps were placed in hardwood stands infested with various species of borers. One stand contained mainly Nuttall oaks (*Quercus nuttallii* Palmer) and the other mostly overcup oaks (*Quercus lyrata* Walt.). The trap sites were sufficiently free from undergrowth so that they could be seen from some distance in all directions.

A fully charged battery provided three nights of operation before recharging. Two of the three batteries required replacing after approximately 7 and 9 months of operation. The traps were relatively trouble free; only an occasional light bulb and one photo cell had to be replaced. The traps were checked daily from April to September of 1966 and 1968 to collect captured borers.

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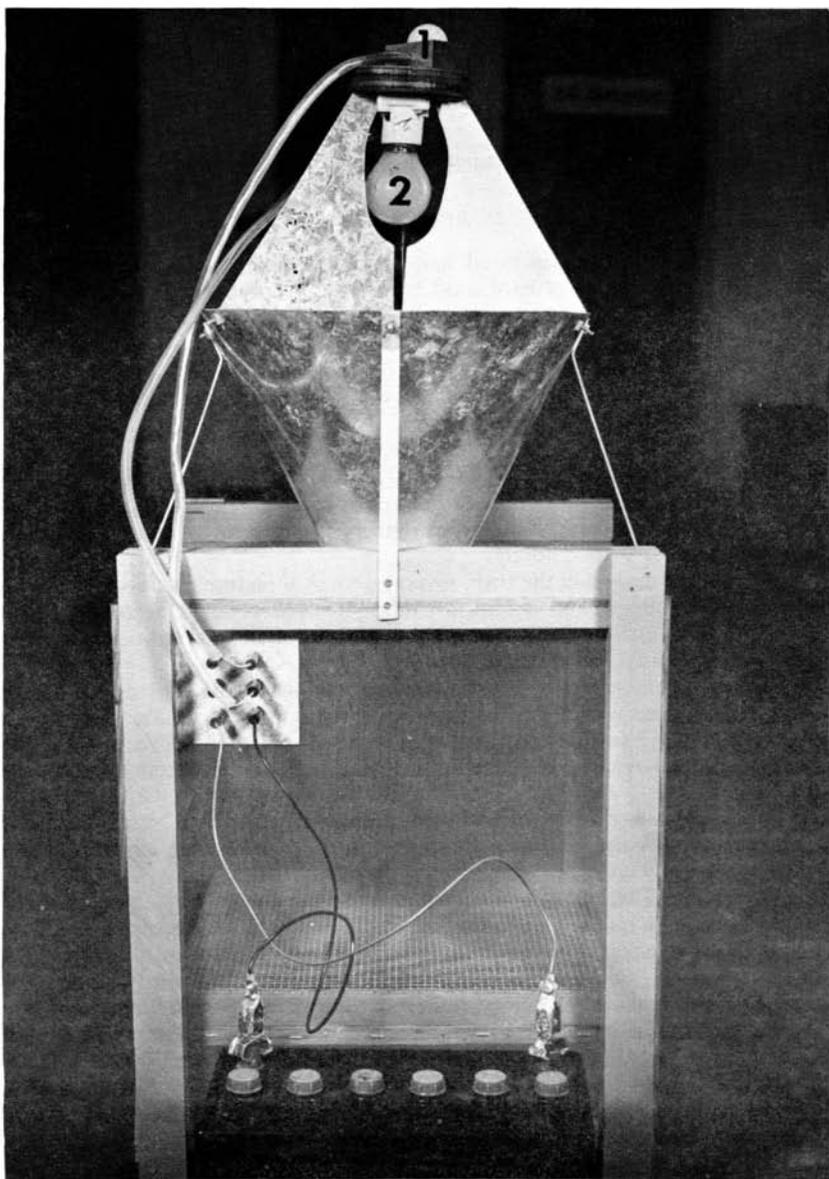


Figure 1. Complete light trap showing location of (1) photoconductive cell, and (2) incandescent light bulb.

Table 1. Hardwood borers captured in light traps in the Delta Experimental Forest, Stoneville, Mississippi.

Borer species	Number captured		Period captured
	1966	1968	
<i>Prionoxystus robiniae</i> (Peck)	57	34	May 5-July 10
<i>Stenodontes dasystemus</i> (Say)	61	29	June 6-Aug. 6
<i>Orthosoma brunneum</i> (Forst.)	18	12	July 1-Aug. 8
<i>Enaphalodes rufulus</i> (Hald.)	18	5	June 29-July 30
<i>Enaphalodes atomarius</i> (Drury)	3	0	June 21-Aug. 5
<i>Dorcaschema wildii</i> Uhler	16	18	June 20-July 26
<i>Goes tigrinus</i> (Deg.)	10	10	May 22-June 25
<i>Goes pulverulentus</i> (Hald.)	4	1	June 2-July 8
<i>Saperda calcarata</i> Say	3	0	May 29-June 9
<i>Saperda tridentata</i> Oliv.	3	0	Apr. 28-May 24

**Attraction of Borers.** Ten species of hardwood borers were caught in two light traps (Table 1). Carpenterworm moths were taken in greater numbers than any other borer. Although more male carpenterworm moths develop than females,<sup>3</sup> 78 per cent of the captured moths were females. Apparently, the female moths either were more active at night or were more attracted to the light than the males.

The remaining nine species of insects caught in the traps were all cerambycid borers (Table 1). Adults of these long horned beetles are rarely observed in nature due to their secretive and nocturnal habits. *Stenodontes dasystemus* and *Orthosoma brunneum*, the second and fourth most numerous borers captured, have never been observed in similar stands by the authors. Thus, were it not for their being attracted to the traps, their presence would not have been detected. Also caught were *Enaphalodes rufulus*, *Dorcaschema wildii*, and *Goes tigrinus*. These are all serious pests of hardwoods in Mississippi. Small numbers of four other species were trapped.

*Stenodontes dasystemus* and *Orthosoma brunneum* were caught largely in the Nuttall oak stand, while *Enaphalodes rufulus* and *Goes tigrinus* were taken mostly from the overcup oak stand. The other species including carpenterworm moths were divided about equally between the two sites.

Several other borers, including *Goes pulcher*, *Goes debilis*, *Dorcaschema alternatum*, and *Paranthrene palmii*, were known to occur in the vicinity of the trap sites, but none were captured. Apparently these species were not attracted to the light or the trap design was not suitable.

<sup>3</sup> Unpublished data on file at the Southern Hardwoods Laboratory, Stoneville, Mississippi.

Little is known about the habits of most hardwood borers; therefore, collection data obtained from light traps could provide useful information such as species present, distribution, period of adult flight, and abundance.

## LITERATURE CITED

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