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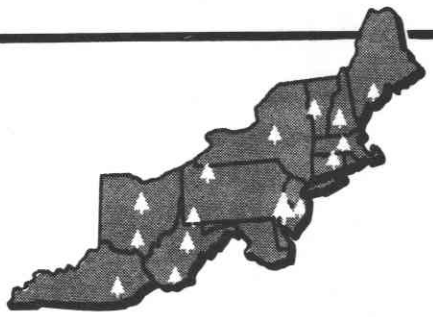

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BAIT BUCKET TRAPPING FOR RED OAK BORERS (Coleoptera: Cerambycidae)

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Abstract. Forty baits were tested in buckets to attract the red oak borer, *Enaphalodes rufulus* (Haldeman). Only six beetles were caught. A low beetle population and above normal rainfall may have reduced the catch. However, many other cerambycids were trapped.

Fermenting bait traps yield many species of insects not commonly collected by other methods (Champlain and Kirk 1926) and have proved especially good for attracting cerambycids (Champlain and Knull 1932). However, the above authors did not report capturing red oak borers, *Enaphalodes rufulus* (Haldeman). This cerambycid is a serious pest of living oak, *Quercus* spp., and causes millions of dollars worth of damage annually—primarily in the form of degraded lumber sawed from infested trees. Hay (1969) reported that red oak borers emerge in odd-numbered years.

Previous bait trapping studies in even years, not conducted in forest situations, and in which only brown sugar or molasses and water were used for bait, were unsuccessful in capturing red oak borers. Therefore, I decided to test many kinds of substances for baits in a forest during an odd-numbered year (1979) to learn if red oak borers could be attracted and trapped.

MATERIALS AND METHODS

The traps or buckets used were ten 14-liter black plastic buckets, twenty 5-liter red plastic buckets, and ten 4-liter sheet metal buckets.

Forty different baits were tested: honeys: clover, cranberry, orange blossom, avocado, eucalyptus, tupelo, alfalfa, buckwheat, linden, sourwood, and safflower; fresh fruits. . . . . apples, cantaloup, watermelon, bananas, pears, and peaches; canned juices: orange, pineapple, grapefruit, grape, apple and Hawaiian

Punch;[1] soft drinks: Vernors ginger ale, Pepsi, Mr. Pibb, Barrelhead root beer, and Mellow yellow; food flavorings: coconut, red raspberry, rum, vanilla, anise, and almond; others: molasses, blackberry wine, beer, maple syrup, malt extract, and fresh, black oak wood chips and brown sugar.

About 250 ml of a liquid bait, 20 ml of a food flavoring, 1 lb of crushed fruit, or about 1 liter of fresh black oak chips and 1 lb of brown sugar were added to about 3 liters of water in a bucket. One lb of sucrose was added to each bucket except for those containing honey, molasses, or maple syrup. Baker's yeast was sprinkled into each bucket to start fermentation.

The buckets were hung on nails driven into live black *(Quercus velutina)* and scarlet *(Q. coccinea)* oaks growing along forest roads in Vinton County, Ohio. The buckets were spaced 15 m or more apart along about 5 km of roads. The buckets were checked daily except for weekends and a large tea strainer was used to remove trapped insects. Trapping dates were June 18 to August 17.

RESULTS AND DISCUSSION

Only two "wild" red oak borers, 1 male and 1 female, were trapped in 8 weeks and these were captured the last week in June and first week of July. The female was caught with tupelo honey and the male with molasses bait. Four artificially reared red oak borers that escaped from a cage being used in a pheromone study were captured, the same night they escaped, in a bucket with molasses bait.

Many species of cerambycids were caught (see listing), some in large numbers. Since the primary purpose of the study was to trap red oak borers, exact numbers of other species caught were not recorded but representative species were kept and recorded.

The best baits for cerambycids were malt extract, watermelon, and bananas. The soft drinks and food flavorings, with the exception of rum, were very poor.

Two possible reasons for the poor red oak borer catch were a very low population of beetles and above normal rainfall in Southern Ohio during July and August. The two wild and four escaped artificially reared beetles were caught during the only dry period of the season. Had not so much moisture been available to the beetles they might have been attracted to the liquid baits in the buckets. Either the beetles were not strongly attracted to any of the baits tested or bait buckets are not good traps for red oak borers.

LITERATURE CITED

Champlain, A.B., and H.B. Kirk.
1926. **Bait pan insects. Entomol.** News 37:288-291.

Champlain, A.B., and J.N. Knull.
1932. **Fermenting baits for trapping elateridae and cerambycidae (Coleop.). Entomol.** News 43:253-257.

Hay, C. John.
1969. **The life history of a red oak borer and its behavior in red, black, and scarlet oak.** Proc. North Cent. Branch Entomol. Soc. 24:125-127.

Species Trapped in Study

Anoplodera proxima (Say)
Asemum striatum (L.)
Cyrtophorus verrucosus (Olivier)
Derancistrus taslei (Buquet)
Distenia undata (Fab.)
**Eburia quadrigeminata* (Say)
Elaphidionoides incertus (Newman)
Elaphidionoides parallelus (Newman)
**Elaphidionoides villosus* (Fab.)
Enderces picipes (Fab.)
Graphisurus fasciatus (Degeer)
**Leptura emarginata* (Fab.)
**Leptura vittata* (Germar)
Neoclytus acuminatus (Fab.)
Neoclytus scutellaris (Olivier)
**Orthosoma brunneum* (Forster)
Parandra brunnea (Fab.)
Purpuricenus axillaris (Haldeman)
Purpuricenus humeralis (Fab.)
**Strangalina luteicornis* (Fab.)
Tylonotus bimaculatus (Haldeman)
**Typocerus velutinus* (Olivier)
**Xylotrechus colonus* (Fab.)

*25 or more specimens trapped

[1] Mention of a particular product or trade name does not imply endorsement by the U.S. Department of Agriculture or the Forest Service.

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