Entomology Circular 351
March-April 1992

Fla. Dept. Agric. & Consumer Services
Division of Plant Industry

Bromeliad Pod Borer, *Epimorius testaceellus* (Lepidoptera: Pyralidae: Galleriinae)[1]

J. B. Heppner[2]

INTRODUCTION: The bromeliad pod borer, *Epimorius testaceellus* Ragonot, first described from Jamaica (Ragonot, 1887), was reared from the bromeliad, *Tillandsia fasciculata* Sw. (Bromeliaceae), in Florida by the author in 1974, and subsequently identified and reported on by Ferguson (1991). The larvae of this pyralid moth do considerable damage to the flower pods of infested bromeliads, although populations appear to be localized and not very common in southern Florida.

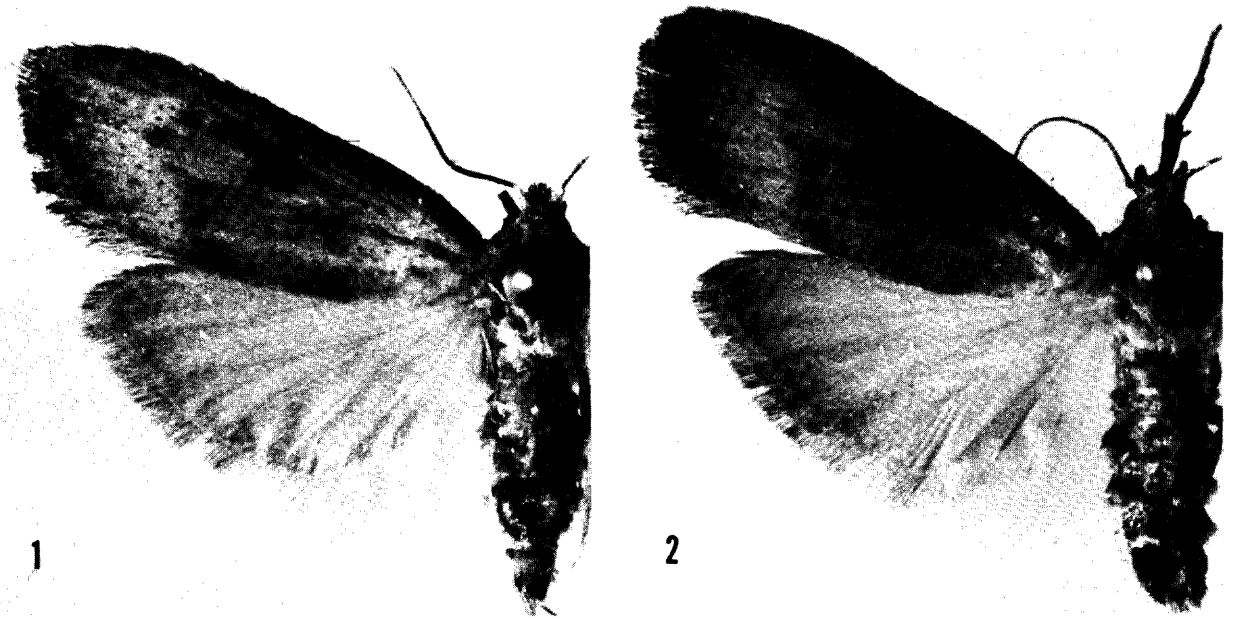

Fig. 1-2. Adults of *Epimorius testaceellus* Ragonot: 1. Male (FW = 9mm); 2. Female (FW = 11.5mm) (Palmdale, FL).

DIAGNOSIS: Adults of *E. testaceellus* are brown with highlights of tan shades on the forewings; hindwings are light tan. Males have slight amounts of red-brown scales on the forewing in fresh specimens. Wingspread ranges from 20mm in males to 26mm in females. Larvae are yellow, with an amber head capsule.

Among the bromeliad moth micro-fauna that has been reported from *T. fasciculata* in Florida, in addition to *E. testaceellus*, species which might be confused with it include the detritus-feeder, *Pyralis farinalis* (Linnaeus) (Pyralidae: Pyralinae); the stem and detritus-feeder, *Opogona sacchari* (Bojer) (Tineidae); the detritus-feeder, *Xylesthia pruniramiella* Clemens (Tineidae); a detritus-feeding Cosmopterigidae (probably *Pyroderces* sp.); a Tortricidae flower-feeder (sp. unknown); and a Noctuidae dead-leaf feeder (*Bleptina* sp.). However, there appear to be no moth larvae with feeding habits similar to *E. testaceellus* in these bromeliads.

DISTRIBUTION: The species occurs over much the same distribution as the host: subtropical Florida and south into the West Indies and South America (Ferguson, 1991; Whalley, 1964). In addition to the rearings from the Fisheating Creek area, Palmdale, Glades Co., in May 1974 (JBH 74E5) and May 1975 (JBH 75E10), the author also reared the moth from larvae found at Matheson Hammock, Miami, Dade Co., in January 1974 (JBH 74A2), and near the Archbold Biological Station, 6 mi SE Lake Placid, Highlands Co., in May 1975 (JBH 75E8). A more recent record is from Miami, in March 1981 (E. Peña, collector). Earlier records from Division of Plant Industry files include a larva collected in March 1960, in Ft. Lauderdale, Broward Co. (J. M. Soowal, collector); and a pyralid flower pod borer, which may be this same species, collected in July 1964 in Ft. Lauderdale (D. McKean, collector).

1. Contribution No. 775, Bureau of Entomology

2. Taxonomic Entomologist, FDACS, Division of Plant Industry, P.O. Box 147100, Gainesville, FL 32614-7100.

Fig. 3-4. Hostplant damage from *Epimorius testaceellus*: 3. Mature bromeliad (*Tillandsia fasciculata*) with several inflorescences; 4. Larval damage on flower spikes (1 larva visible in opened flower pod) (Palmdale, FL).

HOSTS: Thus far, the only confirmed host of *E. testaceellus* is the large bromeliad, *T. fasciculata*. There is a DPI record of basal leaf damage to *Tillandsia valenzuelana* A. Richard, from Copeland, Collier Co., in January 1976 (V. W. Yingst, collector), but the moth species is not confirmed as being *E. testaceellus* and undoubtedly is another pyralid species. No economic damage has been reported, but a localized outbreak could cause extensive damage if moth populations built up to high enough numbers. The moth does not appear to be responsive to light traps, since few if any adult specimens have been collected in Florida other than through rearing from larvae.

BIOLOGY: Larval feeding by *E. testaceellus* involves excavations from feeding inside individual flower pods (or capsules) of the large flower spikes of the hostplant, *T. fasciculata*, a strictly epiphytic bromeliad (Langdon, 1981). Larval damage is evident by frass ejected from the flower capsule and discoloration of the infested flower spikes (Fig. 4). A large bromeliad will have 10 or more flower spikes in each inflorescence (Fig. 3), and each spike may have 2-3 larvae feeding on several of the individual flower pods (Fig. 4). Several flower pods are usually consumed by each larva.

Pupation is within the shell of an excavated flower pod, usually toward the apex of a flower inflorescence and near a spike base. A silken cocoon is spun against the flower capsule walls and an exit hole is partially chewed on an exterior wall near the pod base, leaving the adult to push a thin plant flap upon emergence. The head of the pupa is placed just beneath the exit hole of the flower capsule. Pupation lasts about 17 days during the winter and 6-14 days during May (n = 5). Adults emerge early evening, 7-8 PM. Adults are known thus far only for January-February and May, but since the hostplants in a given area have 3-4 flowering periods per year in south Florida, the moths also probably have 3-4 generations per year. In the Miami area probable adult activity is Feb, May, Aug, and Nov.

Bugbee (1975, 1976) reported on a new and relatively large orange Eurytomidae parasitoid, which he named *Eurytoma aerflora* Bugbee, and which was reared by the author from both the Palmdale and Miami rearings of *E. testaceellus*.

LITERATURE CITED:

Bugbee, R. E. 1975. A new species of the genus *Eurytoma* (Hymenoptera: Eurytomidae) from a pyralid occurring in the flower pods of *Tillandsia fasciculata*. *J. Georgia Ent. Soc.* (Athens), 10:91-93.

_____. 1976. Description of the male of *Eurytoma aerflora* Bugbee (Hym.: Eurytomidae). *J. Georgia Ent. Soc.* (Athens), 11:181-182.

Ferguson, D. C. 1991. Review of the genus *Epimorius* Zeller and first report of the occurrence of *E. testaceellus* Ragonot in the United States (Pyralidae: Galleriinae). *J. Lepid. Soc.* (Los Angeles), 45:117-123.

Langdon, K. R. 1981. The native Florida bromeliad or wild-pine, *Tillandsia fasciculata*. *Fla. Dept. Agric. Consumer Serv., Div. Plant Indus., Botany Circ.* (Gainesville), 15:1-2.

Ragonot, E. L. 1887. *Diagnoses of North American Phycitidae and Galleriidae*. Paris. 20 pp. [privately publ.]

Whalley, P. E. S. 1964. Catalogue of the Galleriinae (Lepidoptera, Pyralidae) with descriptions of new genera and species. *Acta Zool. Cracov.* (Krakow), 9:561-618, pl. 14-44.