

The species of *Metamasius* in Florida (Coleoptera: Curculionidae)¹

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INTRODUCTION: The weevil genus *Metamasius* Horn is composed of approximately 100 Neotropical species, one of which naturally occurs in South Florida. These medium-sized, often brightly colored weevils generally breed in palms, orchids, bananas and plantains, sugarcane, and bromeliads, including pineapples. Recently 2 exotic species with pest potential have become established in South Florida. *Metamasius callizona* (Chevrolat) is here reported for the first time from the United States. This circular summarizes biological and distributional information about these 3 species and will facilitate their identification.

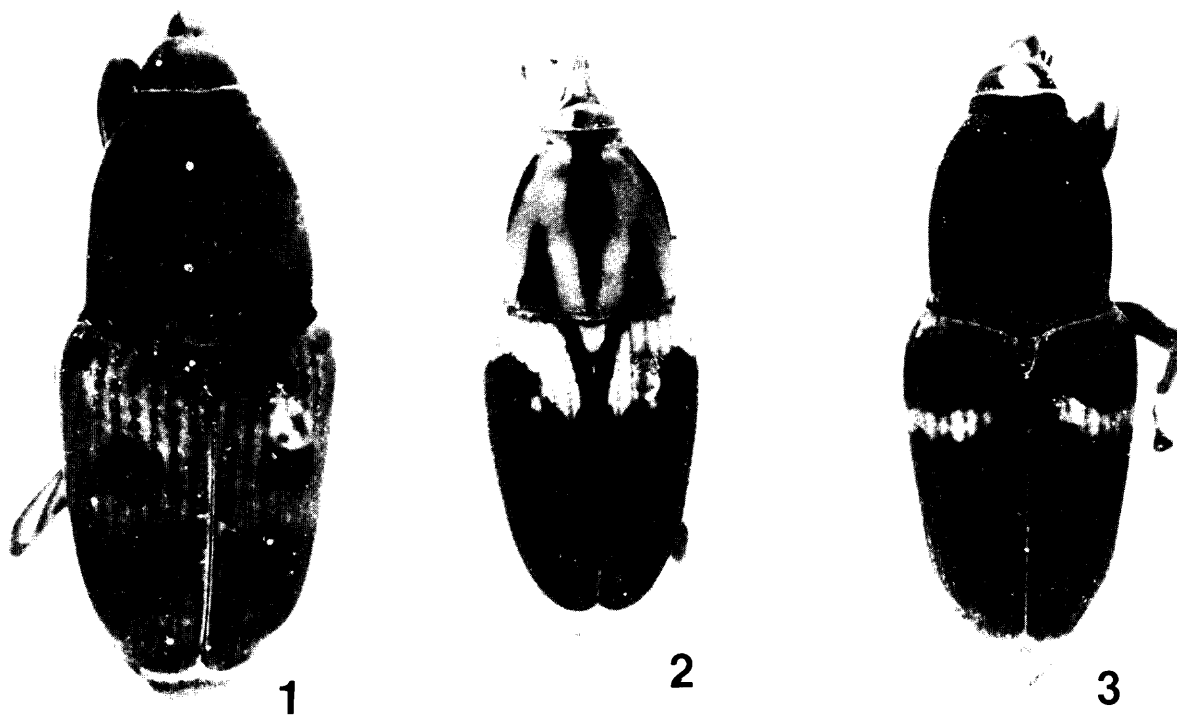


Fig. 1-3. 1) *Metamasius mosieri* Barber, dorsal view (length, 6-9 mm); 2) *M. hemipterus* (Linnaeus), dorsal view (length, 9-14 mm); 3) *M. callizona* Chevrolat, dorsal view (length, 11-16 mm). (DPI Photographs by Jeffrey W. Lotz).

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Fig. 4-5. 4) *Metamasius callizona*, lateral view; 5) larval damage by *M. callizona* to *Tillandsia* sp. (DPI Photographs by Jeffrey W. Lotz).

HISTORY: *Metamasius mosieri* Barber was described from 5 specimens collected in Cuba and Florida (Barber 1920). Vaurie (1966) saw only 7 specimens when she revised the genus. It remains a rarely collected insect with only 5 specimens in the Florida State Collection of Arthropods.

Metamasius hemipterus (L.), described from the Lesser Antilles and ranging through much of Central and South America and the Antilles, was first reported to be established in South Florida by Woodruff (1985), from a single infestation discovered in October 1984 on the grounds of the Agricultural Research and Education Center in Homestead. The original infestation was eradicated and extensive surveys in the area were negative. However, several additional specimens were collected in Dade County in the September, November, and December of 1985 and May of 1986. Many hundreds have been collected in the Homestead area during the past year using banana stems as bait (J. Peña, pers. comm.).

Metamasius callizona (Chevrolat) was described from Mexico and ranges from Mexico south through Guatemala and western Panama (Vaurie 1966). The first Florida specimen of this species was collected at a bromeliad nursery in Ft. Lauderdale on 15-XI-1989. The nursery was treated and no other specimens were found. Within two months, continued surveying produced specimens of *M. callizona* from scattered localities in central and northern Broward County and southern Palm Beach County and it appears to be established. Weevils have been collected from native bromeliads in both residential and natural areas.

IDENTIFICATION: Although *Metamasius* is taxonomically difficult because of the large number of species, the 3 species found in Florida are distinguished easily by size, color pattern, and to some extent by host. The native Florida species, *Metamasius mosieri* Barber, is the smallest of the 3 (6-9 mm long). It is red and black with 2 black spots on the elytra (fig. 1).

Metamasius hemipterus (9-14 mm long) exhibits extreme variation in its red or yellow and black color pattern, ranging from that illustrated (fig. 2) to entirely black. Vaurie (1966) treated certain color variations as 3 subspecies. Woodruff (1985) considered that the Homestead specimens matched the subspecies *M. h. sericeus* (Olivier) most closely. We agree with that assessment.

Metamasius callizona (11-16 mm long) is black except for a transverse band of yellow or orange just before the midpoint of the elytra (fig. 3-4).

BIOLOGY: The biology of *Metamasius mosieri* is the least known of the 3 species. Barber (1920) wrote: "One of the specimens was beaten from a fern growth near the crown of a cabbage palmetto, and another was found high in an oak tree. The multitude of Orchids, Bromeliads, and other epiphytic plants on the branches of the hammock trees offers a difficult problem in the determination of the breeding habits of this beautiful little species, and all our attempts were futile with the possible exception that the old dead basal core of one of the large Bromeliads (probably *Tillandsia utriculata*) was found displaying such exit hole and larval gallery as should be expected for this species . . ." There is a specimen in the FSCA bred from a bromeliad, which unfortunately was not identified. It was also intercepted in Gainesville in a shipment of native bromeliads destined for Canada.

Metamasius hemipterus has been recorded from many hosts (see Woodruff 1985), but is primarily a pest of bananas and sugarcane. J. Peña reported (pers. comm.) that it has been found in every banana growing area around Homestead.

Vaurie (1966) recorded *Metamasius callizona* from bromeliads, pineapple plants, and "banana debris". In Florida, it has been collected from *Tillandsia fasciculata* Sw. and *T. utriculata* L. Adults, larvae, and pupae often are present in the same plant. Larval damage is restricted mainly to the base of the plant, although sometimes it extends up the inflorescence.

At Easterlin County Park in Broward County a heavy infestation in February was marked by numerous seemingly healthy plants littering the ground. Closer inspection revealed extensive damage to the base of the plants (fig. 5), so that they had broken away from the tree branches. The life cycle seems to be fairly rapid, as pupae have been found in extensively mined but still green and apparently healthy plants. Obviously distressed plants rarely yield anything except empty pupal cases.

All of the species apparently pupate in the host, constructing a fibrous cell similar to that of the "giant palm weevil" (*Rhynchophorus cruentatus* (Fabricius)) (Woodruff 1967).

DISTRIBUTION: Florida records by county represented in the FSCA: *Metamasius mosieri*: Collier, Corkscrew Swamp; Glades, Fisheating Creek; Hendry, LaBelle; Sarasota, Laurel. *Metamasius hemipterus*: only in southern Dade County near Homestead. *Metamasius callizona*: Broward: Ft. Lauderdale, North Lauderdale, Oakland Park, Parkland, and Wilton Manors. Palm Beach: Boca Raton. Its distribution suggests that it was introduced and established long before the first specimen was discovered.

ECONOMIC IMPORTANCE: *Metamasius mosieri* is of no known economic importance and is apparently too uncommon in nature to impact the native bromeliad flora. *Metamasius callizona*, on the other hand, has already shown that it has pest potential in nurseries specializing in bromeliads, and could pose a threat to the native *Tillandsia* species in the state. Of special concern are the 2 threatened species of the genus in Florida, *T. flexuosa* Sw., which occurs within the current Florida range of *M. callizona*, and *T. pruinosa* Sw. (Ward 1981). Although *M. hemipterus* apparently prefers damaged or unhealthy hosts in which to oviposit there is no doubt that it has caused economic losses to bananas, pineapple, and sugarcane in the Caribbean (Woodruff 1985).

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