

**THE PINEAPPLE WEEVIL**  
**(*METAMASIVUS RITCHIEI* MARSHALL; COLEOPTERA; CURCULIONIDAE)**

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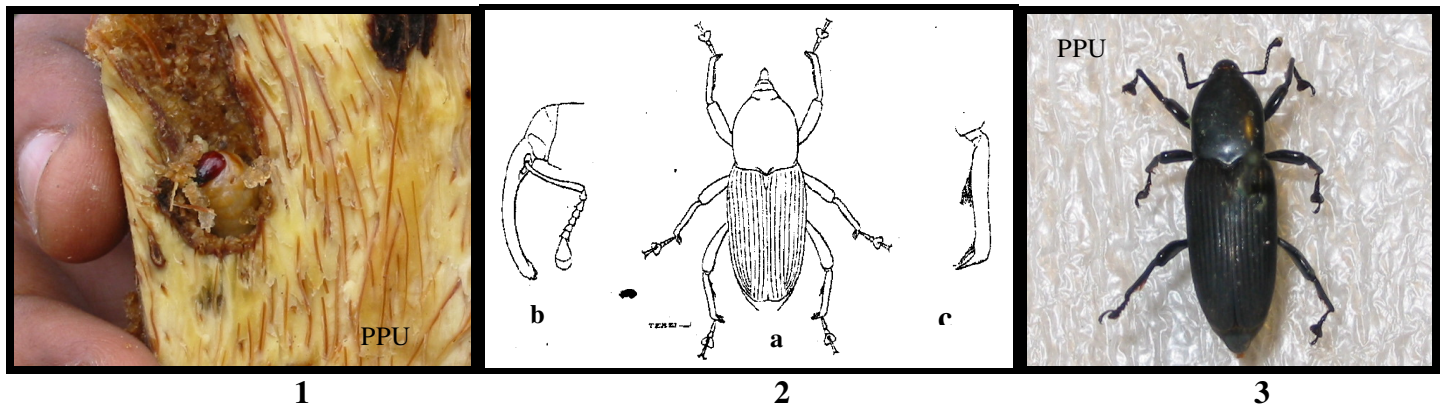
**INTRODUCTION:** In 2003, the Entomology Unit, Bodles Research Station, received samples of pineapple fruits and stalk infested /damaged by a beetle larva. After several field visits and literature research, it was determined that the problem was caused by an insect called the pineapple weevil, *Metamasius ritchiei* Marshall (Coleoptera; Curculionidae; Calandrinae).

**DISTRIBUTION:** *M. ritchiei* was first reported in 1916 from Above Rocks (St. Catherine), Jamaica. A survey conducted in 1956/57 determined that the pest was also present in the parishes of St. Andrew, St. Catherine and Portland. The survey also determined clearly defined areas of infestation:

1. A belt stretching from Cavaliers in St. Andrew through Above Rocks to Glengoffe in St. Catherine
2. A section stretching from Mount James in St. Andrew to Balcarres in Portland
3. A focus of infestation in the Guys Hill area, which is about ten miles from the main infested zone, Cavaliers to Glengoffe.

The samples submitted in 2003 to Bodles were from Lawrence Tavern (St. Catherine) an area located within the above-defined zone, a few miles from Above Rocks. At least 12 other species within the genus *Metamasius*, occurs in the neotropical region in countries such as the United States (Florida state), Mexico, Panama, Venezuela, Costa Rica and Honduras.

**DESCRIPTION:** The eggs are oval, dull, white, and semi-transparent. The larvae are white except the head, which is light brown in colour; legless and grows to a size of 2.5 cm. The adult pineapple weevil is uniform black in colour, without scales or hairs. The length excluding the snout is 19.5-20.5 mm and 7.7-7.5 mm wide. The prothorax and the venter are very shiny. The elytra are broadest at the shoulders and gradually get narrow behind. The coxae have a small tuft of reddish hairs.

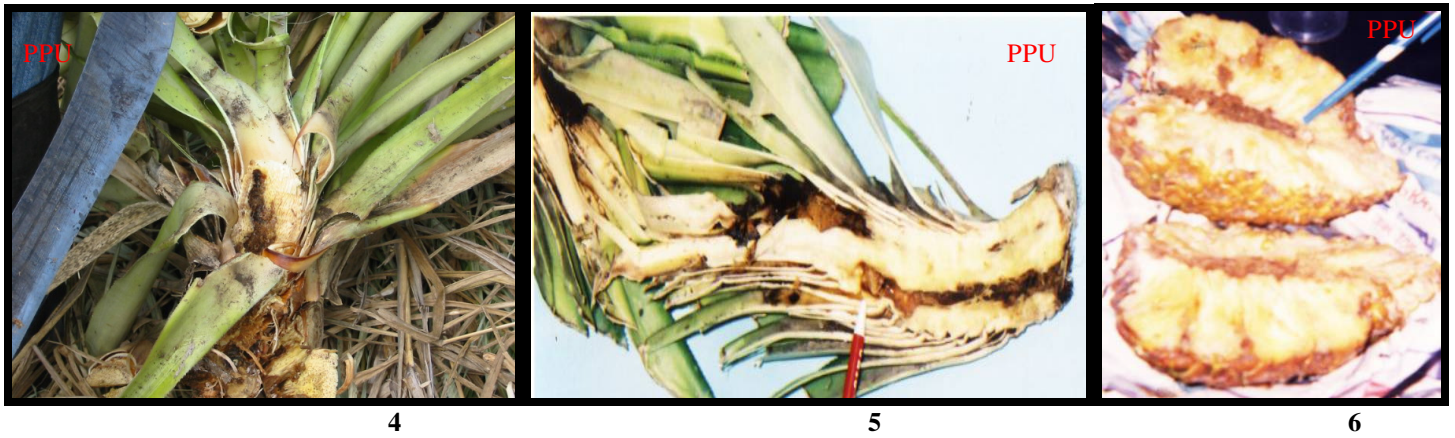


**Figure 1-3: *Metamasius ritchiei* Mshl.; 1. Larvae; 2, Drawing of adult (a. Dorsal view b. Side view c. hind tibia); 3. Adult weevil**

**DAMAGE SYMPTOMS:** In the 1956/57 survey it was reported that the larvae of the pest tunnelled into the fruit –stalk and/or fruit, weakening the stalk and creating a gelatinous ooze at the point of entry or injury at the point of entry of the fruit (Figures 2 & 3). Severely infested fields showed yellowing of the plants. Advanced stalk infestations resulted in breaking of the stalk and falling over of the fruit, as the stalk was unable to bear the weight of the fruit. The fruit was then considered unfit for human consumption.

**BIOLOGY AND ECOLOGY:** Gowdey (A Government Entomologist) studied the lifecycle of *M. ritchiei* in 1922. The lifecycle is completed in 12 – 15 weeks (3 – 4 months). The eggs are oviposited singly in shallow excavations made usually in the fruit stalk at the junction of the stalk and fruit of the pineapple. The larvae hatch in eight to ten days and tunnel upward in the rootstock or fruit stalk or in the fruit itself. The larval stage lasts 8 – 10 weeks. The pupa is formed at the extremity of the tunnel lasting 18 – 24 days. The adults are poor fliers and require a great deal of protection from the direct rays of the sun. It prefers a very humid environment as it shows a preference for the recesses of dense vegetation.

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**Fig. 4-6:** Damage caused by larvae of *M. ritchiei* to pineapple; **4**, Exterior of plant stalk; **5** Interior of plant stalk; **6**, Interior of fruit

In the 1956/57 survey it was observed that infestation was generally found in fields where cultural practices were poor and where the plants were covered with weeds, bush or heavily shaded by overhanging trees. No infestation was found on newly established pineapple plants even when adjoined to heavily infested beds. The pest showed a distinct preference for fields, which were left to produce a ratoon crop and the greater number of times the field had been ratooned, increased the likelihood of it being infested.

One specimen of the weevil was found in the rotted pseudostem of banana in Cavaliers, where it was considered to be only resting. Growers in the Above Rocks area suggested the weevil also attacked arrowroot. This claim was never authenticated after the inspection of many arrowroot samples. Other species of *Metamasius* have been recorded in other countries as pests of bromeliads, sugarcanes and banana. These and other plants in the local infested areas need to be examined as possible alternative host.

#### INTEGRATED PEST MANAGEMENT STRATEGIES

1. Keep pineapple fields free of weeds.
2. Remove excess shade from fields or do not plant under shaded areas.
3. Replant field after two crop cycles.
4. Burn all material unfit for planting
5. Select only un-infested planting material for establishing new fields.
6. Treat all selected planting materials with Malathion or Diazinon dip.
7. Stagger planting to ensure an annual crop.
8. Rotate pineapple with non-host crops.
9. Restrict the movement of infested planting materials to areas only within the above-defined zone.

#### REFERENCES:

- GOWDEY, C.C., 1922. The principal Agricultural Pests in Jamaica. Dept. of Agriculture Jamaica, Entomological Bulletin, No. 2, 68.
- MARSHALL, G.A.K., 1916. A New weevil attacking pineapples in Jamaica. Bulletin of Entomological Research, Vol VII, pt. 2, 197-8.
- REID, A.L., 1960. The distribution and ecology of the pineapple weevil (*Metamasius ritchiei*). In: Investigations 1956-1957, Bulletin no. 57. Ministry of Agriculture and lands, Jamaica, Govt. Printer, 14-18.

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