Research Note

EUMECOSOMYIA NUBILA *(WIDEMANN), A NEW OTITID IN PUERTO RICO, WITH NOTES ON THE HABITS OF THE DIPTERAN SPECIES COMPLEX OF CORN*[1,2]

As part of research directed to assess the role of maize genotype ancestry on insect resistance, we came across a complex of three dipterous species feeding concurrently on ear stigmas. One muscid, *Atherigona orientalis* Schiner and two otitids, *Euxesta stigmatias* Loew and *Eumecosomyia nubila* (Weidemann), were identified from adults collected from reared larval material. Previous published reports discuss the seriousness of *Euxesta stigmatias* as a pest of corn in Puerto Rico, but no other species have been reported.[3] The present note reports *Eumecosomyia nubila* as a new record for Puerto Rico,[4] and presents preliminary notes on the behavior of the three species and their damage.

Eumecosomyia nubila (Weid.) has been reported from Central and South America, including Cuba and Hispaniola in the Greater Antilles.[5] Very little is known about its biology.[6] Maize is its only known host plant. It has been reported feeding on corn ears, occasionally along with other *Euxesta* species[7] or as a scavenger inside *Diatraea* sp. tunnels.[8] We observed females ovipositing on new and mature stigmas. Whitish, elongate eggs were laid loosely or in packets of a few eggs. Adults are quite active and abundant in the corn field. Frequently two or more females were observed depositing eggs simultaneously on the same ear. Puparia of this species were usually found among the bracts.

Euxesta stigmatias puparia were never found inside the ears, supporting the observation that larvae leave the ear to pupate in soil material.[3] Perhaps related to this behavior, we observed larvae of all ages "jumping" frequently from the ears. This is accomplished by joining the cephalic

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[2] The authors thank the scientists and the staff of the Tropical Agriculture Research Station, USDA, Mayagüez, P.R., and the invaluable assistance of Dr. D. A. Nickle and the U.S. National Museum.

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and caudal body portions, forming a ring, and releasing the grip, allowing larvae to jump up to 30 cm.

Atherigona orientalis was originally reported in Puerto Rico in 1923 as *A. pulvinata* Grimshaw by Wolcott.[9] The species has been reported from throughout the world as a pest of a large variety of fruits and seeds, including wheat, sorghum, maize, kohlrabi, and many solanaceous fruits.[8,10,11,12] Several other authors consider this species saprophagous, consuming decaying material damaged by other agents.[9,13,14,15] The species is also known as a vector of bacterial diseases.[10] We consistently found puparia of this species to be located at the tip of the ear, inside masses of dried stigmas, usually in groups of 5 to 6 puparia adhered to each other.

Larvae of all three species were found feeding inside ears of Pioneer 304c, Venezuelan Hybrid and *Zea diploperennis* hybrid. There was no statistical difference in attack susceptibility of the varieties tested with 95% of all ears infested. Similar figures of attack rates have been previously reported for *E. stigmatias* on maize in Puerto Rico.[9] An unidentified chalcidid wasp was reared from collected material. Unfortunately its host fly larvae could not be precisely determined. There is no doubt of the importance of this fly complex as pests of corn in Puerto Rico. However, further research should be directed to determine their relative importance as primary or secondary pests, and their possible role as vectors of corn disease.

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