

THE CASSAVA SHOOT FLY, NEOSILBA PEREZI
(ROMERO AND RUPPEL) (DIPTERA: LONCHAEIDAE)¹

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INTRODUCTION: Neosilba perezii (Romero and Ruppel) is a pest of Manihot esculenta Crantz, which is known as cassava, manioc, and yuca (not yucca). This lonchaeid was described originally in the genus Silba (Romero and Ruppel, 1973) but is now placed in the genus Neosilba based on the work of McAlpine (1962). It was reported first in the United States at Miami, Florida, in 1973 (DPI) when larvae were found feeding in the terminal shoots of cassava. It was well established and probably had been introduced into Florida (source unknown) in the 1960's when many Cubans settled in the Miami area and began planting cassava.

The laterally branching roots of cassava are a staple food of many Latin Americans, and this plant is grown extensively throughout much of the West Indies, Central, and South America. It requires less care than most other crops, less fertilizer, less fungicides, less insecticides. At present there are 400-500 acres of cassava (fig. 1) grown commercially in southern Florida, and this can be expected to continue to increase gradually.

ECONOMIC IMPORTANCE: N. perezii larvae puncture and tunnel through the growing terminal eventually killing it. The damage is easily seen, as a brown gummy exudate covers the injured terminal (fig. 2). This damage results in increased branching (fig. 3) and may stunt the plants. However, yield does not appear to be significantly affected in Florida plantings. In field plots in southern Florida where damage was simulated, no loss in yield was found (Boza, 1977). Thus, although N. perezii has been the most important insect pest of commercial plantings of cassava in Florida, no control measure seems warranted. In this connection it is interesting to note that the ello sphinx, Erinnyis ello (Linnaeus), which occurs fairly commonly in Florida and readily attacks foliage of papaya (Carica papaya Linnaeus), poinsettia (Euphorbia pulcherrima Willdenow), and other species of Euphorbia, has caused complete defoliation of commercial plantings of cassava in Colombia (Winder, 1976).

The unusually low temperatures of the 1976-1977 winter appeared to have eliminated N. perezii in southern Florida, but small infestations became evident in late summer of 1977. There is a good possibility that this insect was eliminated on the Florida mainland by the cold weather but managed to survive on dooryard plantings in the frostfree Florida Keys, from which it reinvaded the mainland.

DESCRIPTION: N. perezii is a small fly (fig. 4) 1/2-2/3 the size of a house fly. It closely resembles Neosilba batesii Curran, the type species of the genus described from Guatemala, but according to Romero and Ruppel (1973) it is distinguished from it as follows: "General color shining black, batesii is black with a light bluish-green tinge; frontal lunule with 7 setulae on each side, batesii lacks these; perezii has 3 oral setulae, batesii only 1 or 2; perezii has 3 anterodorsal and 4 posterior bristles on mesopleuron, batesii 4 and 5, respectively; perezii calypter has 6 black hair-like bristles, batesii 5 large and thick ones." Male N. perezii is 4.7-6.2mm in length and is mostly shiny black throughout except the dark-brown antennae, with basal portion of arista light brown, and frontal lunule brown; scutellum dark brown, pollinose, each side with 3 and apex with 2 setulae between the long, strong apical scutellar bristles; legs brownish black.

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Antennae longer than face; 3rd segment about 4.5 times as long as wide; arista plumose, plumosity at widest about twice as long as the basal arista, and with apices bent toward main stem. Palpi wide, flat, almost as long as proboscis. Mesonotum shiny black with bristles. Wings brownish hyaline, base pale yellow; veins yellow on basal half of wing, some of them wholly yellowish. Calyptrae and their fringes pale yellowish white. Halteres dark brown. Genitalia as shown in fig. 5a and 5b. Female resembling male in color and other general characters except as follows: shorter length, 4.4-5.9mm; ovipositor (fig. 6a and 6b) narrow, more than 5 times as long as broad, sparsely ciliated, and sword shaped (from Romero and Ruppel, 1973).

DISTRIBUTION: United States, Puerto Rico, probably many other islands in the Caribbean.

HOSTS: Reported only from Manihot esculenta Crantz.

REFERENCES:

Boza, John A. 1977. A cassava shoot fly, Neosilba perezii Romero and Ruppel: Notes on the biology and effect on cassava yield. M. S. Thesis, University of Florida, Gainesville. p. i-vii, 1-28.

McAlpine, James F. 1962. The evolution of Lonchaeidae (Diptera). Ph. D. Thesis, University of Illinois, Urbana. 233 p., 234 fig. Available on demand from University Microfilms, Inc., Ann Arbor, Michigan.

Romero S., J. I., and R. S. Ruppel. 1973. A new species of Silba (Diptera, Lonchaeidae) from Puerto Rico. J. Agric., University of Puerto Rico 49:165-8.

Winder, J. A. 1976. Ecology and control of Erinnyis ello and E. alope, important insects in the new world. Pest Articles & News Summaries 22:449-66.



Fig. 1. Commercial field of cassava



Fig. 2. Cassava terminal injured by feeding of Neosilba perezii larvae



Fig. 3. Branching from injured cassava terminal



Fig. 4. Neosilba perezii, adult male

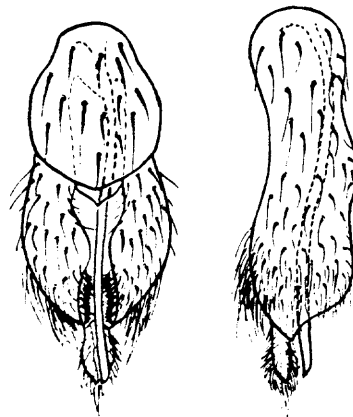


Fig. 5. Neosilba perezii, male genitalia: a, ventral; b, lateral

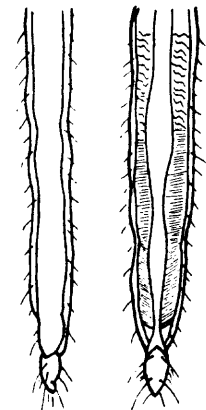


Fig. 6. Neosilba perezii female ovipositor: a, lateral; b, ventral