

*NEOCONOCEPHALUS MAXILLOSUS*: A CARIBBEAN  
CONEHEAD IN SOUTH FLORIDA  
(ORTHOPTERA: TETTIGONIIDAE)<sup>1</sup>

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ABSTRACT

*Neoconocephalus maxillosus* (Fabricius) occurs throughout the West Indies, Central America, and northern South America. We here report it from agricultural areas of south Florida, its first known occurrence in the United States.

*Neoconocephalus* includes more species than any other New World genus of coneheaded katydids (Copiphorinae). Of the 14 species now known to occur in the United States, 11 were recognized by Rehn and Hebard in their 1915 revision of the Nearctic species. Two others were recently described as new by Walker, Whitesell, and Alexander (1973) and Walker and Whitesell (1977). In this paper we authenticate the 14th, *N. maxillosus* (Fabricius), a common Caribbean species.

We first encountered *N. maxillosus* on 10 September 1969, at 2300 h, 5 km north of Homestead, on Fla. Highway 27. We heard numerous specimens that we thought were *Neoconocephalus retusus* (Scudder), a species known in Florida no farther south than Polk and Osceola Counties. We tape recorded and collected 1 green male. On 28 November 1969, in the same area, one of us (JJW) heard the same song and, while searching for a calling male, collected a brown female.

Species of *Neoconocephalus* are generally easy to identify by the ventral aspect of the cone (fastigium) and by song. The cones of the specimens we had collected and the song we had taped were distinct from those of other south Florida coneheads (Fig. 1) and resembled, but did not match, *N. retusus*. Compared to *retusus*, the cones were less broadly rounded and their sides slanted inward more noticeably. The song, taped at 24°C, had a slower wingstroke rate (134/sec) than usual for *retusus* at that temperature (ca. 164/sec). Three other features of the south Florida specimens proved that they were not *retusus*: (1) The ovipositor was 27.0 mm long, approximately equal in length to the hind femur (of the female). In *retusus* (n=16 Fla. specimens), the ovipositor is longer than 30 mm and much longer than the hind femur. (2) The tegmina extended 14 mm (male) and 18 mm (female) beyond the hind femur. In *retusus* (n=70 Fla. specimens), the tegmina exceed the hind femur by less than 11 mm. (3) From the tip of the cone to the tip of the tegmina our specimens measured 53 mm (male)

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and 60 mm (female). Maxima for the sexes in *retusus* (n=54 and 15 Fla. specimens) are 49 and 55 mm respectively.

One of us (TJW) had begun a study of Jamaican crickets and katydids in 1968, and we continued it together in June 1970. In Jamaica we found a *Neoconocephalus* that we could not distinguish, by song or morphology, from the one we had found in south Florida. Subsequently, TJW discovered the same species in Puerto Rico and St. Croix and concluded that it was also the same as one he had studied in Trinidad in 1966 (unpublished).

Determining the correct species name is difficult because there are more than 70 available names for Neotropical *Neoconocephalus* spp., few useful original descriptions, and no adequate revisions (the last, inadequate, ones being Redtenbacher 1891, and Karny 1912). Hebard (1927b, p. 134-5) identified specimens of this species from Jamaica as *N. maxillosus*, and we agree with his determination. Hebard (1927a,b) reported that *maxillosus* occurs in central and southern Mexico, Costa Rica, Panama, Columbia, British Guiana, and Amazonian Brazil.

#### DISCUSSION

The 5 species of *Neoconocephalus* occurring in south Florida can be identified by the shape and length of the cone (Fig. 1).

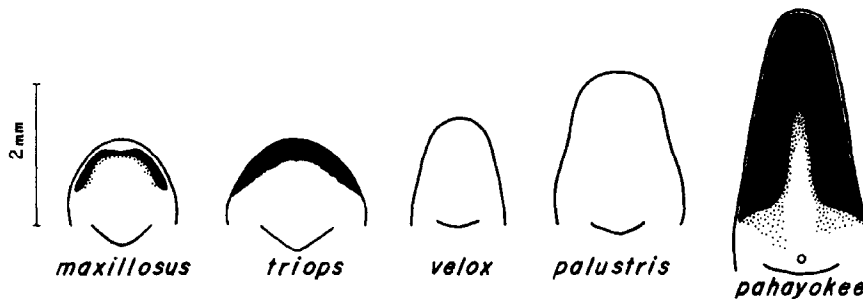


Fig. 1. Ventral views of cones of south Florida *Neoconocephalus*.

The specimens of *maxillosus* we captured were evidently part of an established population rather than waifs from Cuba. We heard numerous specimens north of Homestead on 2 occasions, but in 23 consecutive monthly 1-evening field trips on the Florida Keys we heard none (March 1970-January 1972).

How long *N. maxillosus* has been in south Florida is not known. For 2 reasons we think it arrived during the past 80 years as a natural or man-assisted introduction: (1) it occurs in weedy agricultural areas, a habitat that scarcely existed in south peninsular Florida until the railroad reached Miami in 1896 and brought consumers and overland transportation to the area; (2) early orthopterists, including J. A. G. Rehn, Morgan Hebard, and W. T. Davis, collected extensively in the Miami area and southward during the first 15 years of this century and failed to collect *maxillosus*.

The 2 specimens of *maxillosus* are in the Florida State Collection of Arthropods. The tape recording is No. 207-1 in the Department of Entomology and Nematology Tape Library, University of Florida.

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