

OECANTHUS JAMAICENSIS, N. SP.: A *CECROPIA*-
INHABITING CRICKET (ORTHOPTERA: GRILLIDAE)¹

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ABSTRACT

Oecanthus jamaicensis n. sp. is known only from Jamaica where it occurs almost exclusively on *Cecropia peltata* L. Its closest relative is *O. exclamationis* Davis of the United States and S Mexico. Its song is a continuous or irregularly broken trill of 66 pulses/sec. at 25° C.

The only tree cricket previously reported from the Greater Antilles is *Oecanthus allardi* Walker and Gurney (1960), which occurs on a variety of plants in weedy fields and dry, open woods. In November 1968 I found a second species to be common in Jamaica on *Cecropia peltata* L., a fast-growing pioneer tree in areas of wet limestone forest or lower montane rain forest (Asprey and Robbins 1953). The tree crickets were confined to the leaves at the top of the slender, vertical trunk and were difficult to collect; however, their frequent occurrence was attested by the characteristic nocturnal calling songs of the males.

Oecanthus jamaicensis, new species

Jamaican tree cricket

O. jamaicensis resembles *O. exclamationis* Davis but has postocular black marks. The males have more teeth in the stridulatory file and a slower wing-stroke rate during calling.

Holotype: Male, 3 mi e of Worthy Park, St. Catharine Parish, Jamaica, 1600 ft, 28 Nov. 1968, T. J. Walker, Coll. #3, on *Cecropia peltata* L. U. S. National Museum. Pale green except for a ventral longitudinal black line on each of the first and second antennal segments, a thin dorsal longitudinal black line extending posteriorly from each eye (Fig. 1A), and a few dark flecks on the femora and proximal portions of the tibiae. Each first antennal segment with ventral ivory swelling. Sensory area on terminal segment of maxillary palpus one-half length of segment. Stridulatory file 1.09 mm, with 31 teeth. Metanotal gland (Fig. 1B) like that of *O. exclamationis* (Fig. 2 and 7, Walker and Gurney 1967) except the setae attached to the median anterior margin of the main cavity are in a few widely separated bundles rather than a wide compact brush, and a thick seta (or setal bundle) extends downward, across the mouth of each lateral anterior cavity. Cerci filiform.

¹This research was supported by PHS Research Grant No. FR 7052-03 from NIH to the University of Florida. Florida Agriculture Experiment Stations Journal Series No. 3348. I thank the Clarke family of Worth Park Estates, Jamaica, for their generous hospitality and Dr. J. E. Lloyd for assistance in the field and with the manuscript.

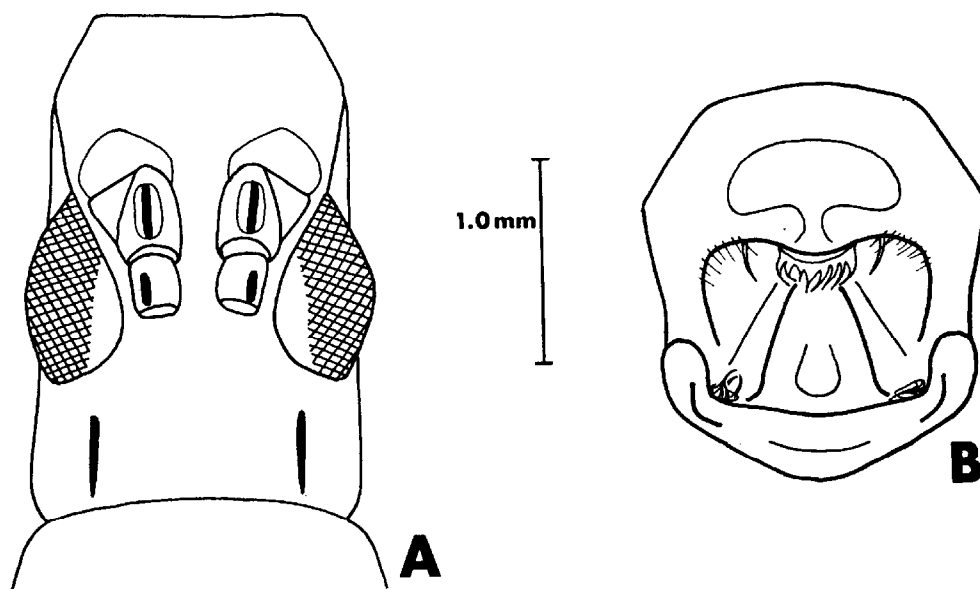


Fig. 1. Holotype of *O. jamaicensis*. A. Dorsum of head showing antennal and postocular black marks. B. Metanotal gland. (Drawings by P. C. Drummond).

Allotype: Female, Worthy Park, St. Catherine Parish, Jamaica, 1200 ft, 27 Nov. 1968, T. J. Walker, Coll. #2, on *Hibiscus tiliaceus* L. U. S. National Museum. Color and markings similar to holotype.

Measurements of holotype and allotype (mm): Length of body ♂ 13.0, ♀ 12.0; pronotal disk (length x caudal width) ♂ 2.5 x 1.8, ♀ 2.1 x—; length of tegmen ♂ 11.7, ♀ 12.5; greatest width of dorsal field of ♂ tegmen 4.0, of ♀ tegmina 2.2; length of hind femur ♂ 8.3; length of ovipositor 4.7.

Paratypes: 5 ♂, 6 juv. JAMAICA: 2 ♂, 3 juv., same data as allotype; 3 ♂, 3 juv., Hanover Parish, nr. Halfmoon Bay, 20 Nov. 1968, T. J. Walker, Coll. #1, on *C. peltata*. Files of two paratypes had 27 and 29 teeth in 1.05 and 1.03 mm.

Host Plants. *O. jamaicensis* was identified by song and then located at 11 sites: at 10 the host was *C. peltata*. The exception was at Worthy Park where a large roadside mahoe tree (*H. tiliaceus*) was host to a colony of *jamaicensis*. No tree crickets were on similar, near-by mahoe trees.

Oecanthus spp. eat a variety of foods, and the usual diet of *jamaicensis* cannot be assumed to be host tissues. The crop contents of a late juvenile from *C. peltata* were examined microscopically. More than 80% of the material was apparently cellular but not identifiable as to origin. Some of the remainder was plant vascular tissue. No cuticular or other fragments of arthropods were detected.

Distribution. Besides the above records of specimens from St. Catherine and Hanover Parishes, I have song records from 12 sites including ones in St. Thomas and Portland Parishes. I found *jamaicensis* in Jamaica where ever *C. peltata* was numerous. Since no specimens of *jamaicensis* had previously been collected even in Jamaica, its occurrence elsewhere in the Caribbean is problematical. However, Puerto Rico apparently can be excluded from its range since I failed to find or hear it there in 2

weeks of extensive field work. *C. peltata* occurs in Puerto Rico and in other wet areas of the West Indies and mainland tropical America.

Song. The calling song, resembling that of *O. exclamationis*, is a low-pitched trill continued for tens of seconds without pause or with momentary pauses at irregular intervals of a few or more seconds. Eight tape recordings were made at 21.0-25.3° C with a Nagra III recorder at 15 inches/sec. Audiospectrographic analyses showed the pulse rate to be approximately 52 per second at 21° C and 66 at 25° C. The frequency ranged from 2.6 to 2.9 kcps.

The only 2 males seen singing were on mahoe, and each had the head and pronotum through a 5-mm hole in a leaf. The body axis was perpendicular to the leaf and the tegmina were parallel to the adjacent underside of the leaf. On *C. peltata* singing males may use the bottoms of the slits between leaf lobes as singing sites somewhat similar to the holes in the mahoe leaves.

Discussion. *O. jamaicensis* probably breeds continuously. Juveniles of various sizes were seen on both *C. peltata* and *H. tiliaceus*. Eggs and pattern of oviposition are unknown, but a female was seen ovipositing on the underside of a leaf petiole of *H. tiliaceus*. In the field at night the crickets stayed on the leaves of the host even though the tree or branch was violently shaken. However, a captive male flew from a vial in daylight.

O. jamaicensis is more host specific than its closest mainland relatives—*O. exclamationis* of the United States and S Mexico and *O. leptogrammus* of S Texas, Mexico, and Central America (Walker 1962, 1967). The adaptive significance of the greater host specificity is unknown. Since in Jamaica no species of Oecanthinae occur on other plants in the same habitat, other hosts would seem open to exploitation.

Key. The key in Walker 1967 (p. 785-6) may be expanded to identify specimens of *jamaicensis* by inserting the following between couplet 11 and 12 and changing couplet 12 to 12A:

12. (11) Postocular black marks (West Indies) *jamaicensis*
12' No postocular black marks (mainland)12A

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