

Two Unusual Delphacid Leafhoppers from Kauai (Homoptera)

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The two species of endemic Hawaiian leafhoppers reported upon here were part of a collection of miscellaneous insects made while searching for endemic mealybugs in the native forest areas of Kauai during August of 1959. This field work was made possible through a grant of funds from the McNerny Foundation of Honolulu, and I wish to express my sincere appreciation to the foundation for their support of this research. The figures of the species described below as new were drawn by Mrs. Dorothy Rainwater of the Bishop P. Bishop Museum, to whom I am indebted for her talented assistance. The genitalia drawings were done by me.

Nesothoë magnacornis, new species (figs. 1, A-C; 2, A-B).

Male. Head, prothorax and mesonotum pale flavotestaceous. Tegmina maculate (fig. 1, C), with conspicuous dark setigerous granules on veins. Tegminal maculations confined largely to areas between veins, veins white; maculations mostly dark brown, but each tegmen with two conspicuously darker spots, one on the commissural margin about midway between base and apex, and one near the apical margin usually confined within the hindmost of the two elongate median anal cells; pale areas of tegmina semitransparent, usually a pale milky white due to presence of a film of wax over the tegmina. Face and antennae (fig. 1, B) mostly pale brown; a broad pale band across front and genae extending from lower margin of eyes to upper margin of clypeus; lower margin of basal segment of antennae and sensoria of second segment pale. Legs largely pale with conspicuous diagonal black bands, 2 on each tibia, 1 on basal segment of each tarsus. Tips of tibial spines, calcar teeth and tarsal claws black. Venter of abdomen mostly pale, ventral surface of genital capsule black.

Front with a single unforked median carina; minimum width of vertex between eyes about 0.3 mm.; width of head across eyes about 0.9 mm. Antennae (fig. 1, A, B) unusually large; basal segment about 0.33 mm. long by 0.30 mm. maximum width, strongly flattened; 2nd segment about 0.53 mm. long by 0.26 mm. maximum width, subcylindrical, but with a flat, flange-like lower margin. Calcar of hind tibia with about 9 teeth.

Pygophore with a pair of anal spines but without lateral spines or accessory spine-like processes behind genital styles. Anal style small, pale; genital style

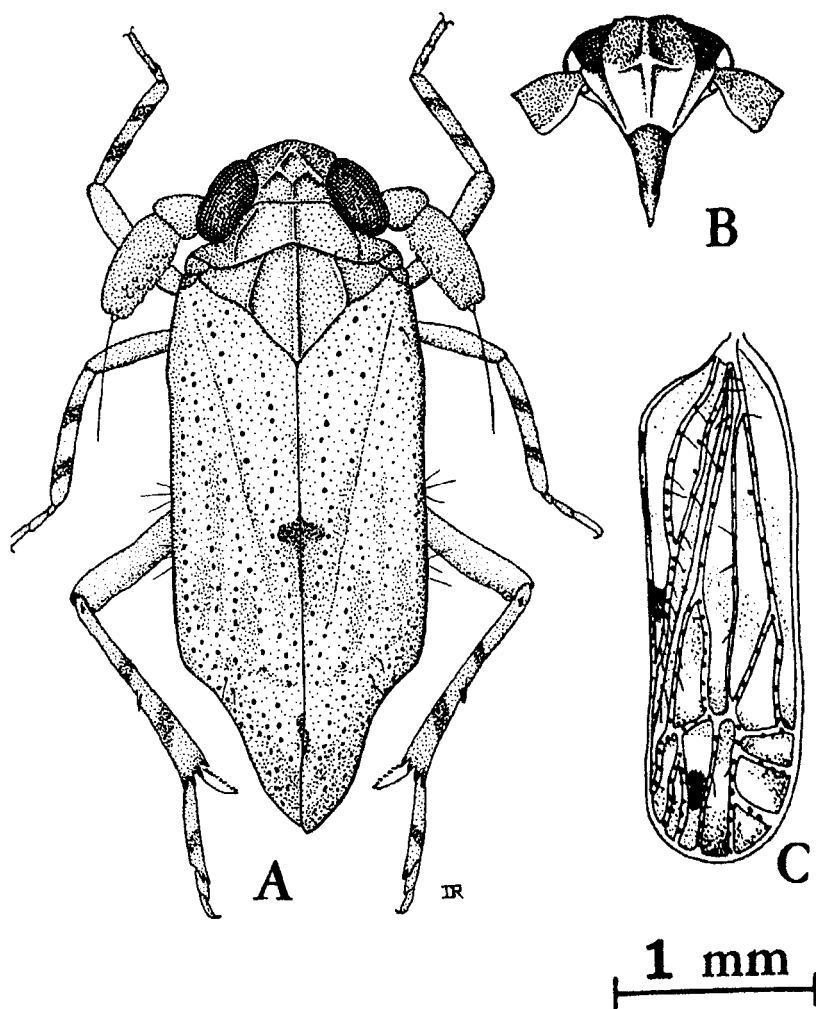


FIGURE 1. *Nesotboë magnicornis* n.sp.: A, dorsal aspect; B, frontal view of face; C, tegmen.

as figured (fig. 2, B); aedeagus (fig. 2, A) elongate, slender, terminating in a pair of slender elongate lateral processes and a somewhat shorter median dorsal process.

Body form robust; length to tips of tegmina 3.4 mm.; width across tegmina about 1.3 mm., width across posterior margin of pronotum 1.0 mm.; tegmina constricted before apices as figured.

Female. Similar to male, slightly larger; length to tips of tegmina about 4.0 mm. Anal style small, single; pale areas of body flavous to pale flavotestaceous.

Described from 20 adult specimens, 3 males and 17 females: Milolii Trail near Kokee, Kauai, 3,000 ft., August 30, 1959 (J. W. Beardsley), on *Claoxylon sandwicense* Mueller of Argau. Holotype male, allotype female, and 14 paratypes in Bernice P. Bishop Museum, Honolulu; 4 paratypes in collection of Experiment Station, HSPA, Honolulu.

This species is immediately separable from all other known Hawaiian *Nesothot* by the extreme development of the antennae. The structure of the male genitalia and other features are similar to other broad, robust species of the genus (see Zimmerman, 1948).

Nesothot magnicornis is the first delphacid to be reported from *Claoxylon* in Hawaii, and the observed presence of nymphs as well as adults indicates that the species is definitely attached to that host. Although *C. sandwicense* was encountered at several spots in the vicinity of Kokee, the leafhoppers were found only in the one area.

Dictyophorodelphax zwaluwenburgi Beardsley

Dictyophorodelphax zwaluwenburgi Beardsley, 1956. PROC. HAW. ENT. SOC. 16 (1):21.

This species was described from a unique female taken sweeping vegetation, and therefore not definitely associated with its host. I was able to revisit the type locality in 1959, and secured a series of 26 adult specimens and a few nymphs, all within an area of about 3 acres where the host plant, *Euphorbia celastroides* Boissier, was fairly plentiful. Although this native *Euphorbia* was encountered at other localities around Kokee, the *Dictyophorodelphax* was found only at this one spot.

On the basis of this additional material it is now possible to present a brief description and figures of the male genitalia of this species.

Male. Similar to female in size, coloration, and development of the cephalic horn; tegmina slightly smaller, each about 1.8 mm. long by 0.7 mm. wide.

Aedeagus as figured (fig. 2, D), outer surface of distal lobe with a conspicuous patch of small teeth in the area before the apex, apex bare; a short, truncate process present basad of the outer lobe, its outermost corner bearing a few denticles slightly smaller than those on the outer lobe. Genital style as figured (fig. 2, C).

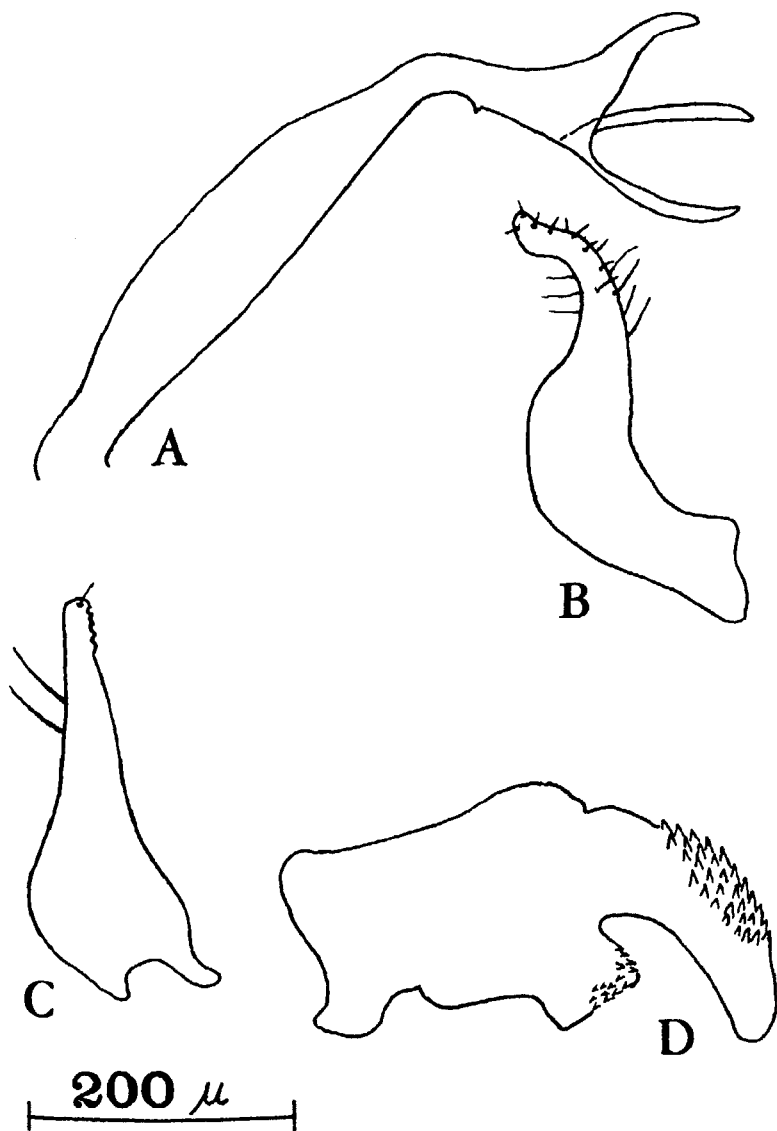


FIGURE 2. A, aedeagus of *Nesothoë magnacornis* n.sp.; B, right genital style of *N. magnacornis*; C, left genital style of *Dictyophorodelphax zwaluwenburgi* Beardsley; D, aedeagus of *D. zwaluwenburgi*.

Based on 3 male specimens: along highway, 2 miles south of Kokee, Kauai, Aug. 29, 1959 (J. W. Beardsley), swept from *Euphorbia celastroides*. Allotype male, 2 paratype males, and 18 topotype females in B. P. Bishop Museum, Honolulu; 5 topotype females in collection of Experiment Station, HSPA, Honolulu.

The specimens which comprise the series studied show some variation in the degree of downward bending of the cephalic horn, and in most of these the horn is somewhat more deflexed than in the female holotype. In those individuals in which the horn is most strongly deflexed, the degree of bending approaches that exhibited by the least strongly deflexed specimens of *D. praedicta* Bridwell from Maui. However, *D. zwaluwenburgi* may be separated easily from the latter species by its much darker coloration, narrower tegmina, and the conspicuously different aedeagus of the male (see Zimmerman, 1948, pp. 167-170). *D. usingeri* Swezey from Lanai is also similar, but has a shorter cephalic horn and wider tegmina than does *D. zwaluwenburgi*. The male of *D. usingeri* is apparently unknown.

Although the dark granules on the veins of the tegmina of *D. zwaluwenburgi* were described originally as being non-setigerous, each granule usually supports a dark seta in most of the specimens at hand. The setae apparently had been rubbed off the granules in the holotype specimen.

REFERENCES

- BEARDSLEY, J. W. 1956. A New *Dictysphoradelphax* from Kauai (Homoptera: Delphacidae). *Trans. Haw. Ent. Soc.* 10(1):21-23.
SWEZEY, O. H. 1954. Forest Entomology in Hawaii. BERNICE P. BISHOP MUSEUM SPECIAL PUBLICATION 43, ix + 266 pp., figs.
ZIMMERMAN, J. C. 1948. INSECTS OF HAWAII vol. 4, HOMOPTERA: AUCHENORHYNCHA, viii + 266 pp., figs. University of Hawaii Press, Honolulu.