The Genus Nesophryne Kirkaldy, with Description of a New Species
(Homoptera: Cicadellidae)\(^1\)

By RYOJI NAMBA

UNIVERSITY OF HAWAII, COLLEGE OF AGRICULTURE
AGRICULTURAL EXPERIMENT STATION, HONOLULU, T. H.

Kirkaldy, 1910, Fauna Hawaïensis, 2: 556.

Type species: Nesophryne filicicola Kirkaldy = N. kaiamamao (Kirkaldy).

The genus Nesophryne, which is endemic to Hawaii, was established in 1907 with N. filicicola as sole species. In 1910 Kirkaldy transferred Bythoscopus kaiamamao Kirkaldy and B. kukanaroa Kirkaldy into this genus and in the same paper described a new species, Nesophryne microlepiae. Osborn (1935: 8) recognized the above four species as belonging to this genus. Zimmerman (1948: 33, 35) considered N. filicicola and N. microlepiae as synonyms of N. kaiamamao. I have seen the types of N. filicicola and N. microlepiae and agree with Zimmerman that they are conspecific with N. kaiamamao.

Herein three species are recognized in this genus, of which one is described as new. The two previously described species are redescribed with consideration of male genitalia and intraspecific color variation. In previous papers there is no indication of study of male genitalia on the specific level, although genital characters have been known to be very useful in cicadellid taxonomy.

This genus can be separated from the other cicadellid genera in Hawaii by its relatively stout appearance, the transversely striolate pronotum, and absence of antennal ledges.

A total of 127 specimens were examined during the course of this study.

Key to the Species of Nesophryne

1. Crown relatively narrow, the distance from ocellus to hind margin of crown being as long as or longer than distance from inner margin of eye to median line of crown. .............................................. kaiamamao (Kirkaldy)
   Crown broader, the distance from ocellus to hind margin of crown being shorter than distance from inner margin of eye to median line of crown .............................................. 2

2. Lateral margin of gena strongly sinuated below eye (Fig. 2A); inner margin of eye next to base of antenna with slight indentation (Fig. 2A); third apical cell twice as long as wide .............................................. kukanaroa (Kirkaldy)
   Lateral margin of gena only slightly sinuated below eye (Fig. 1A); inner margin of eye without indentation; third apical cell about as long as wide .............................................. alticola n. sp.

\(^1\) Approved by the Director of the Hawaii Agricultural Experiment Station as Technical Paper No. 326.
Nesophryne kaiamamao (Kirkaldy)

This species can be separated from the others by the narrower crown as stated in the key and the male genitalia, i.e., the style from lateral view in normal position extends beyond the connective posteriorly by about one-half the length of the connective and the aedeagal length which is definitely longer than the connective (Fig. 3C).

Head and body coloration sometimes wholly brownish yellow or reddish brown. Lorum, clypellus, and transverse band from eye to eye over ocelli usually black, remainder yellow. Pronotum yellow with black irregular markings. Tegmina hyaline with veins and vernicate markings black; with milky white spots next to commissure caudad to tip of second claval vein, between first and second claval veins, and middle of inner antecapital cell. Pygofer roundly pointed at apex, more pointed than in other two species. Aedeagal shaft bifurcate, from lateral view curved postero-dorsally. Aedeagus with prominent dorsal apodeme; preatrium very short or wanting; gonopore at apex of shaft; anterior wall of shaft extended past gonopore to form lanceolate recurrent process. Connective Y-shaped. Style with two lobes at apex, ventral lobe with very short setae on its dorsum (Figs. 3B, 3C).


Nesophryne alticola new species

The members of this species are the stoutest in the genus. This species can be separated from the others by the slight sinuation of the lateral margin of the gena (Figs. 1A and 2A), by the quadrate appearance of the pygofer from lateral view, and by the absence of indentation of the inner eye margin next to the base of the antenna.

In females the head may be wholly yellow, yellow except for a transverse, arcuate brown band just below ocelli, or yellow except for ventral portions of clypeus and clypellus which are brown. In males the head dark brown except for a yellow arcuate band, which extends from that part of gena next to dorsal portion of lorum to below the ocellus, and two short yellow longitudinal strips, one on each side of median line of crown. Pronotum wholly yellow or yellow with irregular dark brown markings. Tegmina wholly stramineous or stramineous with brown vernicate markings; rugose; third apical cell about as long as wide. In darker specimens clavus with a distinct transverse milky white band caudad of second claval vein. Male genitalia resemble those of N. kaiamamao. Pygofer from lateral view appears quadrate, i.e., the broadly rounded apical margin appears perpendicular to the ventral margin; apical recurrent process present; gonopore, in natural position, facing more medianly than in N. kaiamamao (Figs. 1B, 1C).

Holotype ♂ and allotype ♀: Malamalama, Oahu, July 28, 1918, O. H. Swezey, ex Clermontia. Both deposited in the Hawaiian Sugar Planters’ Association Experiment Station collection.

KEY TO FIGURES

1. Nesophryne alticola n. sp. A. head, front view; B. male pygofer and plate, lateral view; C. male genitalia, lateral view.
2. Nesophryne kukanaroa (Kirkaldy). A. head, front view; B. male pygofer and plate, lateral view; C. male genitalia, lateral view.
3. Nesophryne kaiamamao (Kirkaldy). B. male pygofer and plate, lateral view; C. male genitalia, lateral view.
Paratypes 3 ♂ ♂ , 5 ♀ ♀ : OAHU.—3 ♂ ♂ , 2 ♀ ♀ Malamalama, July 28, 1918, O. H. Swezey, Timberlake; 1 ♀ Opaepae, April 10, 1921, O. H. Swezey; 1 ♀ Peahinaia Rdg., April 13, 1930, Meinecke. LANAI.—1 ♀ July 3, 1935, R. L. Usinger. Deposited in the Hawaiian Sugar Planters' Association Experiment Station collection (1 ♂ , 2 ♀ ♀), B. P. Bishop Museum (1 ♂ , 1 ♀ ), U. S. National Museum (1 ♀ ), and Hawaii Agricultural Experiment Station (1 ♂ , 1 ♀ ).

Nesophryne kukanaroa (Kirkaldy)

A salient diagnostic character of this species is the absence of the lanceolate recurrent process at the apex of the aedeagal shaft (Fig. 2C). This species appears more stout than N. kaiamamao but not as much as N. alticola. It can be separated from N. kaiamamao by its wider crown and from N. alticola by the abrupt and strong sinuation of the lateral margin of the gena and the length of the third apical cell, which is about twice as long as wide.

Head in some specimens, except for yellow transverse band between bases of antennae, completely dark brown or black. In addition, some specimens with crown yellow on posterior border. Some specimens with head yellow except for clypellus, lorum, and transverse band between ocelli which are brown; some wholly yellow except for tip of clypellus which is dark brown. Body in some specimens wholly black, in some wholly stramineous. Intergrading forms stramineous with varying amount of dark brown vermiculate markings. In some specimens tegmina with somewhat distinctive milky white band which extends from apex of scutellum to costal margin over fork of first sector, also with two milky white spots, one on each side of commissure near apex of clavus. In some, band absent but spots present, or both band and spots absent. Tegmina rugose or smooth. Pygofer somewhat quadrate but not as much as that of N. alticola. Aedeagal length subequal to connective length. Lanceolate recurrent process at apex of aedeagal shaft absent (Figs. 2B, 2C).

Specimens examined: 10 ♀ ♀ , 11 ♂ ♂ . KAUAI.—Alakai Swamp, Kalalau, Kumuwela, Nualolo, Olokele Canyon, Puu Ka Pele, Waialae Stream.

ACKNOWLEDGMENTS

I am grateful to Mr. R. H. Van Zwaluwenburg of the H. S. P. A. Experiment Station and Dr. J. L. Gressitt of the B. P. Bishop Museum for their generous loan of material and to Dr. W. E. China of the British Museum for his valuable information on the type of N. kukanaroa.

REFERENCES