

**A NEW SPECIES, NOMENCLATURAL NOTES, AND
NEW RECORDS FOR HAWAIIAN ORSILLINAE
(HEMIPTERA: HETEROPTERA: LYGAEIDAE)¹**

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Abstract. *Neseis neochinai* is described from Maui. Previously published gender changes in *Neseis* species and subspecies names are listed. New records within the Hawaiian Islands are reported for *Nesoclimacias lanaiensis* and *Glyptonysius amicola*.

Dr W.C. Gagné has collected a new species of *Neseis* Kirkaldy on Maui, a sister species of *N. chinai* Usinger, described from Molokai. In addition to describing the new *Neseis*, I here report on previously published gender corrections of some names in the genus to bring them to the attention of Hawaiian readers and on new records that extend the island ranges of *Nesoclimacias* Kirkaldy and *Glyptonysius* Usinger.

Allopatric populations and subspecies. The proper systematic treatment of the allopatric series of closely related populations that are not uncommon in archipelagos and mountain ranges is problematical. Often they are placed as subspecies to indicate their close relationship. Usinger (1942, 1945), for example, recognized 5 species of *Neseis* divided into 2 to 7 allopatric subspecies each. However, use of the polytypic species concept (subspecies category) indicates that the author assumes a lack of genetically controlled reproductive isolation among the allopatric populations. If even a few pairs of populations had been tested, inferences might be made concerning untested populations, but intrinsic reproductive isolation has not been tested in any pair of allopatric populations of Hawaiian Orsillinae. Treatment of these populations as full species implies, of course, that the populations are reproductively isolated.

Reproductive isolation might be tested in the field by release of large numbers of one population in the range of another and monitoring of the mixed populations for several generations. However, agricultural officials might object, and worse, a unique gene pool could be permanently altered. Although the results of such a field test would be interesting, free-choice mating experiments could also be made with laboratory colonies of allopatric populations (see Ueshima 1963, 1964; Usinger 1966; Leonard 1966 for successful examples).

In a general study of lygaeid chromosomes, Ueshima & Ashlock (1980) covered 46 species and subspecies of Hawaiian Orsillinae. Of these, 10 were of mostly named

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subspecies populations of 2 species of *Neseis* that live on *Pipturus* trees. All have the same chromosome complement, but the chromosomes vary in size. Those of populations of *N. hiloensis* (Perkins) vary with the same magnitude from population to population as do other full species of *Neseis*, while those of populations of *N. nitida* (B.-White) are essentially identical. Perhaps, then, "subspecies" of *N. hiloensis* should be treated as full species, while those of *N. nitida* should retain their subspecies status. However, the same study contained many examples of clearly distinct species with identical chromosome complements. The evidence is inconclusive.

Treatment of the sister form described below cannot be based on any knowledge of reproductive isolation, for there is no such knowledge. But because the new form and *Neseis chinai* are entirely allopatric populations that can be completely distinguished, and subspecies are often ignored in the enumeration of faunas, I have decided to describe the new form as a full species. All measurements are in millimetres.

***Neseis* (*Trachynysius*) *neochinai* Ashlock, new species**

Fig. 1

Head with vertex nearly flat, shining, moderately granulose, nearly glabrous, with a few white hairs anteriorly, length 0.75, width 1.00, antecular length 0.27, eye length 0.33, eye width 0.23, interocular space 0.53; buccula widest anteriorly, gradually narrowing to a point near level of middle of eye without abrupt change in width; labium attaining middle of mid coxae, 1st segment just attaining base of head, segment lengths from base 0.45, 0.40, 0.37, 0.32; antenna with 1st segment exceeding clypeus by about $\frac{1}{3}$ its length, segment lengths from base 0.27, 0.53, 0.52, 0.53. *Pronotum* nearly glabrous, with fine appressed pale pubescence anterior of callosities and laterally on anterior lobe, densely punctate anterior to callosities, moderately punctate on posterior lobe, punctures contiguous to separated by $2\times$ the diameter of a puncture; lateral margins lightly sinuate; length 0.83, width 1.37. *Scutellum* nearly glabrous with a few appressed fine hairs basally; Y-shaped carina somewhat obscured but not tumose; densely punctate lateral to stem of Y-shaped carina, with punctures contiguous to separated by diameter of a puncture; length 0.57, width 0.75. *Hemelytron* exceeding abdomen; clavus and corium shining, glabrous, with a few hairs projecting laterally at base of corium; claval suture punctate on both clavus and corium for full length; corium punctate lateral to vein R+M to level of apex of scutellum, costal margin paralleling vein R+M about to level of apex of scutellum; vein R+M visible, vein Cu barely discernible; length of claval commissure 0.52; length of corium 1.73, extending to posterior margin of abdominal segment VI; membrane complete, veins transparent, basal length to level of corial apex 0.98, apical length from corial apex 1.10.

Color. Head black except clypeus medially, antenniferous tubercle, narrow margin around eye widening anteriorly, and buccula pale yellowish brown; antenna pale yellowish brown, with light brown ring at middle of segment I, basally and subapically on segments II and III, and basally and apically on segment IV; labium pale yellowish brown, darker on apical $\frac{2}{3}$ of segment IV. *Pronotum* light yellowish brown, anterior lobe with callosities and anterior area black, leaving a narrow collar and longitudinal midline pale, posterior lobe with punctures brown to dark brown, with a longitudinal brown spot at humeral angle and medially on posterior margin, ventrally with prosternal collar, all acetabulae, posterior lobe of propleuron except punctures, posterior margins of meso- and metathorax, and scent gland auricle pale, remaining parts dark brown to black. *Scutellum* black, laterally and apically pale. Legs pale yellowish brown with brown spots, hind femur with a dorsally incomplete subapical brown ring. *Hemelytron*

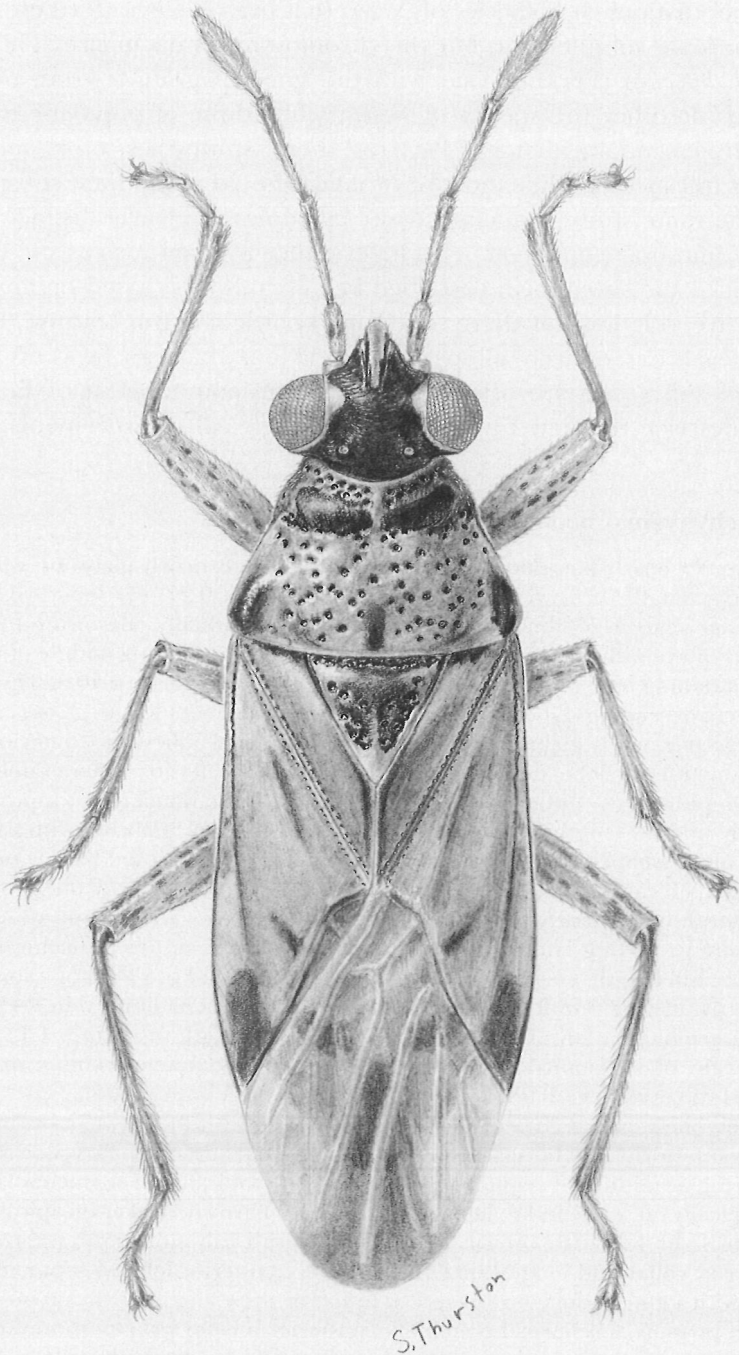


FIG. 1. *Neseis neochinai*.

semitransparent, pale; clavus narrowly darkened at claval commissure; corium slightly darkened on middle of vein Cu and on apical $\frac{2}{3}$ of branch M of vein R+M, with a conspicuous brown spot at apex of corium; membrane transparent, with a broad brownish area extending from between apex of corial veins R and M to apex of membrane.

Measurements. Holotype ♂, length 4.3. ♂: length 4.0–4.6, width 1.4–1.6. ♀: length 4.0–4.6, width 1.7–1.8.

Types. Holotype ♂ (BPBM 12,730), W MAUI: Kaulalewelewe-Pu'u Kukui trail, 1400 m, 18.II.1970, on *Tetraplasandra meiantra* var. *ramosior* (W.C. Gagné). Paratypes: 4♂, 1♀, same data; E MAUI: 4♂, 5♀, Ukulele Camp, 6000 ft [1829 m], 5.IV.1970, on *Cheirodendron trigynum* (Gagné); 8♂, Makawao Forest Reserve, Waiohiwi Gulch, 9000 ft [2804 m], 15.IV.1971, on *Cheirodendron* sp. (Gagné).

PARTIAL KEY TO THE GENUS *Neseis* (ADDITION TO USINGER 1942: 49)

29. Size large, 4.7–5.3; coloration not sexually dimorphic, distinctly tinged with red, clavus and corium without black markings, at most clavus brown only narrowly on commissure and corium brown only near apical angle . . . (Molokai) . . . **swezeyi**
 Size smaller, 4.0–4.6; coloration sexually dimorphic, ♀ with more extensive black markings on clavus and corium, but ♂ also having a distinct black spot at apical angle of corium 29'
- 29'. Callosities pale; apical part of membrane (measured on midline from level of corial apices) about equal to basal part . . . (Molokai) **chinai**
 Callosities black; apical part of membrane $\frac{1}{10}$ longer than basal part . . . (Maui) **neochinai**

Neseis (Trachynysius) neochinai is the Maui sister species of *N. (Tr.) chinai* Usinger from Molokai. The 2 may be most easily distinguished by the color of the callosities, as indicated in the key. Both species are sexually dimorphic, as noted by Ashlock (1966) for *N. chinai*. In general, the differences between the sexes may be seen by comparing Usinger's (1942: Pl. 5E) figure of a female *N. chinai* with the figure of the male holotype of *N. neochinai* included here (Fig. 1).

NAME CHANGES

Steyskal (1973) pointed out that the generic name *Neseis* is "a classical personal name and therefore according to the Code (Art. 30.a.i) is feminine." Since the name to that time was treated as masculine, several changes in ending of species and subspecies names were required. All of these changes have been published, but not in the Hawaiian literature. Steyskal himself corrected the following species and subspecies names in *Neseis*: *alternata*, *ampliata*, *approximata*, *brachyptera*, *consummata*, *crypta*, *fasciata*, *fulgida*, *intermedia*, *interoculata*, *jugata*, *nitida*, *pallida*, and *saundersiana*. Ueshima & Ashlock (1980) made the following corrections: *legnota* and *pallissata*. All other names in *Neseis* listed in Ashlock (1966) do not need emendation, and no other Hawaiian Lygaeidae as listed by Zimmerman (1948, 1951) requires name correction.

NEW RECORDS

Nesoclimacias lanaiensis (Kirkaldy). This species was described from Lanai, and Usinger & Ashlock (1959: 110) reported a single specimen from Molokai.

New records. MAUI: Kipahulu Val, camp 2, 1250 m, 13–18.VIII.1967 (N. Wilson); Palikea Gulch, 1190 m, 13.IV.1971, on *Freyinetia* (W.C. Gagné).

Glyptonysius amicola Ashlock. Described from several localities on Molokai, this species is very similar to *G. hylaeus* (Kirkaldy). Single male specimens of this species (or very close relatives) are reported here from 3 additional islands.

New records. LANAI: Awehi Gulch, 2500 ft [762 m], 6.VI.1971, on *Cheirodendron trigynum* (W.C. Gagné); W MAUI: Kaulalewelewe-Pu'u Kukui trail, 3000 ft [914 m], 26.X.1966 (P.D. Ashlock); HAWAII: Pu'u Waawaa, 21.VII.1971, on *Charpentiera* (S.L. Montgomery).

The Maui specimen has a darker coloration than is typical of *G. amicola*. These records establish the genus *Glyptonysius* on all of the main Hawaiian islands except Ni'ihau and Kaho'olawe.

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