

THE GARDEN FLEAHOPPER GENUS *HALTICUS*
(HEMIPTERA: MIRIDAE): RESURRECTION OF
AN OLD NAME AND KEY TO SPECIES OF
THE WESTERN HEMISPHERE

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Abstract.—The plant bug *Halticus canus* (Distant), known from Guatemala, Mexico, and Nicaragua, is resurrected from the synonymy of the garden flea hopper, *H. bractatus* (Say). Male genitalia for both species are illustrated, and a key is provided to separate the four species of *Halticus* known from the western Hemisphere: *H. apterus* (F.), *H. bractatus*, *H. canus*, and *H. intermedius* (Uhler). A record of *H. bractatus* from Hawaii is new for the state.

Halticus bractatus (Say), an important crop pest, has been the subject of numerous economic investigations. Ashmead's (1887) observation of *bractatus* (as *Rhinacloa citri* Ashmead) attacking orange trees in Florida is the first record documenting damage by this species. Chittenden (1902) apparently coined the common name "garden flea hopper" because of its preference for many truck or garden crops and for its ability to hop. Beyer (1921) summarized most of the literature relating to this pest (as *Halticus citri*), reviewed distribution and synonymies, described the immature stages, and listed 41 host plants. *Halticus bractatus* prefers plants in the family Fabaceae such as alfalfa, beans, and clovers, but it will readily feed on many others, including barley, corn, oats, wheat, eggplant, potato, tobacco, and cotton. The flea hopper occurs throughout much of North (eastern and midwestern United States), Central, and South America (Carvalho 1958), and the West Indies (Maldonado, 1969; Alayo, 1974).

While identifying a collection of Neotropical Miridae from Mexico, I discovered a species of *Halticus* that appeared similar to but larger than *bractatus*, the only species of the genus known from this region. Perusal of the literature revealed that six names have been placed in synonymy under *bractatus*; one of these names is here considered to represent a distinct species.

Herein, I resurrect the name *canus* Distant for a species occurring in southern Mexico and Central America, compare *canus* to *bractatus*, illustrate male genitalia of both species, and provide a revised key to separate the four species of *Halticus* now recognized from the Western hemisphere.

Halticus canus (Distant)

Figs. 4-6

Calocoris canus Distant, 1893: 430.

Calocoris canus: Van Duzee, 1907: 30.

Halticus canus was synonymized under *bractatus* without any specific comment or comparison (Van Duzee, 1907). Van Duzee apparently based this synonymy solely on the overall similarity of *bractatus* to Distant's figures of *canus*.

I have reviewed the original descriptions of *bractatus* and the six taxa considered as junior synonyms: *Halticus spegazzinii* Berg, 1884¹; *Rhinacloa citri* Ashmead, 1887; *Halticus minutus* Uhler, 1889; *Halticus uhleri* Giard, 1982; *Calocoris canus* Distant, 1893; and *Halticus nigricornis* Reuter, 1908. Based on the descriptions (size and color), distribution, and my knowledge of the species, I have concluded that *canus* is distinct from *bractatus*.

Although I have not seen the male lectotype of *canus* designated by Carvalho and Dolling (1976), I have examined two brachypterous females in the USNM (det. as *Calocoris canus* Distant) that were part of the "Biologia" material; they agree in all respects with Distant's description and figures.

Description.—Macropterous male ($n = 10$): Length, 2.64–3.12 mm; width, 0.84–0.86 mm. *Head*: Width, 0.62–0.64 mm; vertex, 0.26–0.30 mm. *Rostrum*: Length, 0.80–0.86 mm, reaching mesocoxae. *Antenna*: Segment I, 0.26–0.28 mm; II, 1.12–1.20 mm; III, 0.70–0.78 mm; IV, 0.40–0.48 mm. *Pronotum*: Length, 0.40–0.48 mm; basal width, 0.86–0.92 mm. *Genitalia*: Left paramere (Fig. 4); aedeagus (Fig. 5); right paramere (Fig. 6).

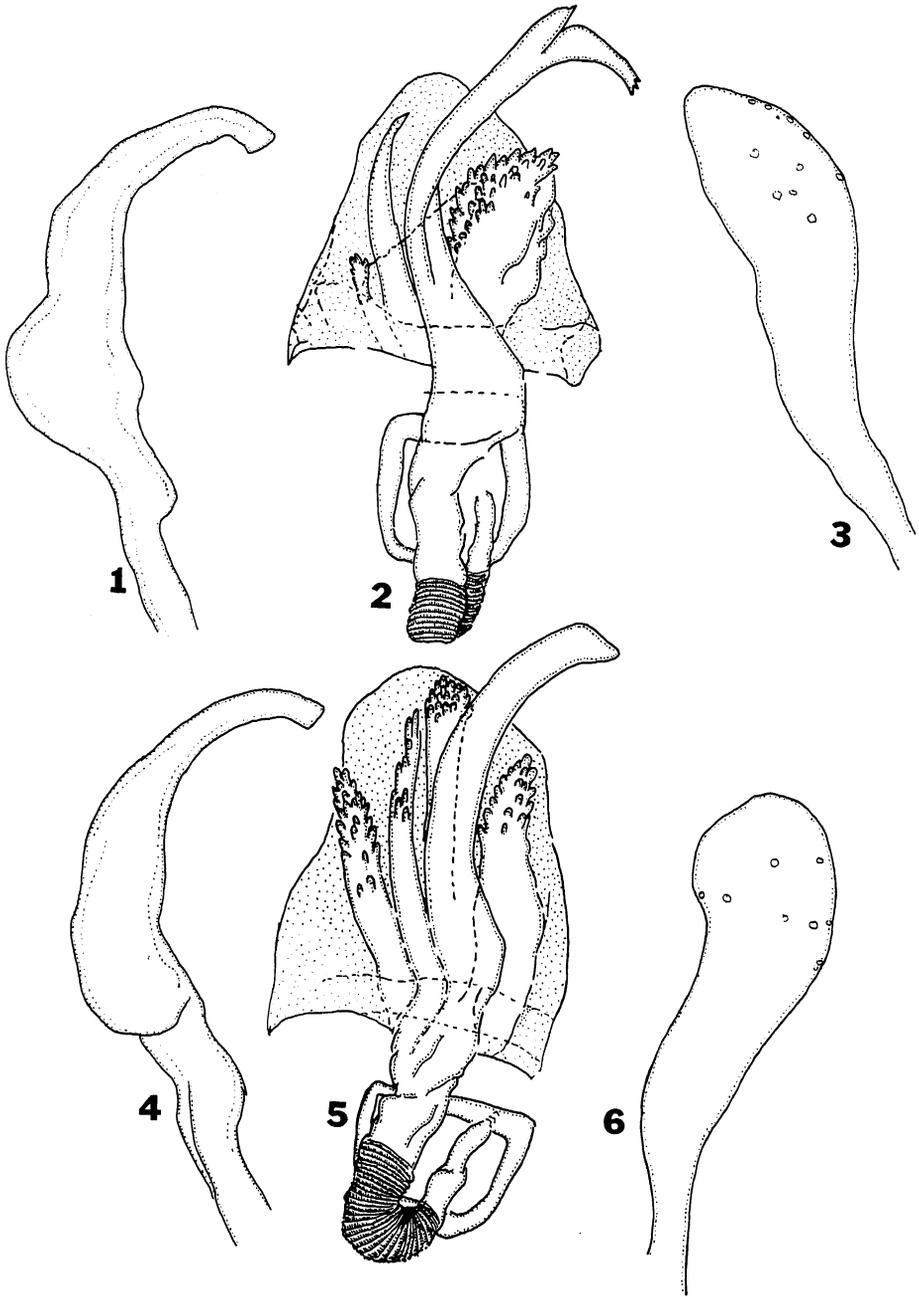
Macropterous female ($n = 2$): Length, 2.76–3.08 mm; width, 1.08 mm. *Head*: Width, 0.58–0.60 mm; vertex, 0.30 mm. *Rostrum*: Length 0.86 mm. *Antenna*: Segment I, 0.24 mm; II, 0.92–0.98 mm; III, 0.70–0.78 mm; IV, 0.42–0.48 mm. *Pronotum*: Length, 0.50 mm; basal width, 0.96–0.98 mm.

Overall coloration shiny black, with narrow inner margin of eyes yellow and apex of cuneus white; membrane translucent black or brown, veins black; venter shiny black; antennal segment I yellowish brown; segment II variably colored, from entirely yellowish brown to black; segments III and IV darker brown with base of III pale yellowish to yellowish brown; pro- and mesofemora yellowish brown with bases black; metafemur entirely black except for narrow yellow apex; tibiae uniformly yellowish brown, base of metatibia usually black; tarsi yellowish brown except for blackish apex of 3rd segment; claws black. Dorsum clothed with long, semierect, brown simple setae, intermixed on hemelytra with patches of silvery, silky or scalelike setae.

Brachypterous female ($n = 10$): Length to apex of abdomen, 1.68–1.96 mm; length to apex of hemelytra, 1.52–1.68 mm; width, 1.12–1.16 mm. *Head*: Width, 0.58–0.60 mm; vertex, 0.30 mm. *Rostrum*: Length, 0.90–0.92 mm. *Antenna*: Segment I, 0.22–0.24 mm; II, 0.86–0.92 mm; III, 0.68–0.70 mm; IV, 0.42–0.44 mm. *Pronotum*: Length, 0.38–0.40 mm; basal width, 0.74–0.80 mm.

Very similar to macropterous forms in the shiny black dorsum and venter, narrow yellow band along inside of eyes, leg markings, and pubescence; differing in the shortened coleopteroid hemelytra lacking a cuneus and membrane, antennal segment I black or yellowish brown with apex black or strongly infuscated (macropterous female also with this color development on segment I), and antennal segment II usually entirely black.

¹ Lack of sufficient material precludes fully re-evaluating the status of *H. spegazzinii* described from South America. A preliminary investigation, however, suggests that it is different from the species included in my key.



Figs. 1-6. Male genitalia of *Halticus* spp. 1-3, *H. bractatus*. 1, Left paramere. 2, Aedeagus. 3, Right paramere. 4-6, *H. canus*. 4, Left paramere. 5, Aedeagus. 6, Right paramere.

Specimens examined. All in the National Museum of Natural History, Washington, D.C. (USNM). 2 brachypterous ♀, syntypes, Cerro-Zunil [Guatemala], 4–5000 ft., Champion coll.; 12 ♂, 18 brachypterous ♀, Yepocapa, Guatemala, 1948–49, no collector data; 1 brachypterous ♀, Huehuet'go, Guatemala, 3 Mar. 1949, H. T. Dalmat coll.; 4 brachypterous ♀, Cordoba, Mexico, Mar.–Apr. 1908, F. K. Knab coll.; 1 ♂, Hidalgo, Mexico, 316 km, 8 Mar. 1946, J. Caldwell coll.; 7 ♂, 12 brachypterous ♀, Veracruz, Mexico, 8 km north of Fortin, 1300 m, 21–22 Apr. 1978, T. J. Henry, J. C. Schaffner, and R. T. Schuh colls.; 8 ♂, 2 macropterous ♀, 5 brachypterous ♀, Veracruz, Mexico, 34 km north of Maolinco, 1280 m, 21–22 Apr. 1978, Henry, Schaffner, and Schuh colls.

Remarks.—*Halticus canus* can be separated from *bractatus* by the larger size and by the differently colored femora as given in the key. In *canus*, males and females have the pro- and mesofemora yellow with only the bases black; in males of *bractatus*, the pro- and mesofemora are entirely yellow, and in females they are black with only the apices yellow.

Male genitalia of *bractatus* (Figs. 1–3) also differ significantly from those of *canus* (Figs. 4–6). The left paramere of *canus* (Fig. 4) is less angulate in lateral aspect; the right paramere (Fig. 6) is more rounded; and the aedeagus (Fig. 5) has the primary spiculum straight and truncate apically, and the four secondary spiculi are slender with numerous shingle-like tubercles apically. In *bractatus*, the primary spiculum of the aedeagus (Fig. 2) is bifurcate apically, one secondary spiculum is acutely produced apically and lacks shingle-like tubercles, and the right secondary spiculum is broad and roughened laterally.

With the resurrection of *canus*, four species of *Halticus* are now recognized to occur in the Western Hemisphere. The genus can be keyed easily in such notable works as Blatchley (1926), Knight (1941), and Carvalho (1955). The following is a revised key to species.

KEY TO SPECIES OF *HALTICUS* FROM THE WESTERN HEMISPHERE

1. Hemelytra without silky or scalelike pubescence; Maine, Nova Scotia, Ontario and Palearctic *apterus* (Linnaeus)
- Hemelytra with distinct tufts of golden or silvery silky or scalelike pubescence 2
2. Robust species, length 3.0–3.8 mm, body width more than $\frac{1}{2}$ (.60) body length; only macropterous form known; Ontario south to Mississippi, west to Manitoba, Colorado, and California *intermedius* Uhler
- Slender species, length usually less than 3 mm; body width $\frac{1}{4}$ or less body length in macropterous form; brachypterous females common, length 2.00 mm or less 3
3. Larger species, length 2.60–3.12 mm; narrow pale-yellow band along inside margin of eye complete from base of vertex to antennal bases; pro- and mesofemora yellow with only bases black in both sexes; Guatemala, Mexico, and Nicaragua *canus* (Distant)

- Smaller species, length 2.30 mm or less; narrow pale-yellow band along inside margin of eye restricted to vertex; pro- and mesofemora entirely yellow in male, black with only apices yellow in female; North, Central, and South America, West Indies, and Hawaii [Volcano, Hawaii, 2 Nov. 1981, ex: artichoke, C. J. Davis coll. (USNM); NEW STATE RECORD] . . .
 *bractatus* (Say)

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