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DESCRIPTIONS OF NINE NEW SPECIES OF MELANOTRICHUS  
REUTER FROM NORTH AMERICA (HEMIPTERA, MIRIDAE).\*

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For some time the writer has noticed in the genus *Orthotylus* Fieb., that the *flavosparsus* group of species present characters worthy of generic recognition, namely: dorsum bearing two types of pubescence, simple hairs intermixed with recumbent, scale-like pubescence; left genital clasper represented by a simple curved hook, not bifurcate into two nearly equal parts as in typical *Orthotylus*. The genus *Orthotylus* Fieb. (type *nassatus* Fab.) is characterized by bearing only simple pubescence, while the left genital clasper is bifurcate near base, thus divided into two prominent arms (see figures 83-87, Hemiptera Connecticut, 1923). These two groups of species differ more widely than many recognized genera in the family Miridae, hence the writer proposes to recognize them as valid genera.

Reuter (1875) erected the subgenus *Melanotrichus* to include *flavosparsus* Sahlb. and certain other species, for which Kirkaldy (1904) designated *flavosparsus* Sahlb. as type. *Trichorhinus* Fieber (1858), type *ericctorum* Fall., is not congeneric with *flavosparsus* Sahlb. *Pachylops* Fieber (1861), type *chloropterus* Fieber, not Kirsch.=*bicolor* D. & S., now appears to be synonymous with *Hypsitylus* Fieber (1861). I therefore use *Melanotrichus* Reuter as the correct generic name to use for this group of species.

Besides the new species here described, the genus *Melanotrichus* Reuter includes the following species from the Nearctic region: *althacae* Hussey, *catulus* Van D., *coagulatus* Uhler, *concolor* Kirsch., *ferox* Van D., *flavosparsus* Sahlb., *inconspicuus* Uhler, *mistus* Knigt., *tibialis* Van D., *viridicatus* Uhler, and probably *senectus* Van D.

Iowa.

***Melanotrichus viridicatus* (Uhler).**

*Orthotylus viridicatus* Uhler, Hemip. Colo., p. 48, 1895.

The writer found the type of *viridicatus* Uhler in the U. S. National Museum collection, bearing the characteristic label in Uhler's hand writing. The locality label reads "Colo. 158" and below that is another slip bearing the number "76." No doubt this number was for reference purposes when the species from Colorado were being sorted out for naming by Uhler. The type is a female specimen with broken antennae, but the color characters and pubescence enable me to locate the species among the material I have for study.

Mr. Van Duzee has given a redescription of *viridicatus* Uhler in his monograph of the genus *Orthotylus* (Univ. Calif. Publ., Div. Ent. Tech. Bul., i, p. 241, 1916). In describing the male genitalia he states: "Dextral hook of the male genitalia long protruding, terete, its end rounded and not at all narrowed." Such would seem to fit the description of *althacae* Hussey better than any species I have seen. I have taken a good series of *althacae* Hussey, Aug. 11, 1925, Fort Garland, Colorado, on a plant of the hollyhock family; also have found it abundant on *Althae* sp., Sept. 1925, at Ames, Iowa.

For comparison with other species here described, I give the following redescription of *viridicatus* (Uhler).

\*—Contribution from the Department of Zoology and Entomology, Iowa State College, Ames,

♂. Length 3.7 mm., width 1.3 mm. Head: width .74., vertex .37 mm. Rostrum, length 1.06 mm., reaching to middle of hind coxae. Antennae: segment I, length .38 mm.; II, 1.3 mm., distinctly greater than width of pronotum at base; III, 1.03 mm.; IV, .35 mm.; black pubescent, greenish yellow, last two segments more fuscous. Pronotum: length .53 mm., width at base 1.02 mm.

Color deep blue-green, head, calli and scutellum yellowish green; membrane uniformly blackish, veins pale to greenish, cubitus fuscous except apically where it becomes pale. Dorsum clothed with prone, black, scale-like deciduous pubescence, and intermixed with fine, long, erect pale hairs; venter pale pubescent, legs and antennae black pubescent. Distinguished from related forms by structure of right genital clasper which is ligulate, somewhat broader apically, the apical third curved inward to median line, its apex abruptly acute, darker colored, and pointing cephalad, but not as a long spine like *incurvus*.

♀. Length 3.9 mm., width 1.5 mm. Head: width .78 mm., vertex .43 mm. Antennae: segment I, length .33 mm.; II, 1 mm. Pronotum: length .56 mm., width at base 1.05 mm. More robust than the male but very similar in pubescence and coloration.

*Plesiotypes*: ♂ Aug. 12, 1925, Wolf Creek Pass, alt. 9,000 ft. Colorado (H. H. Knight); ♀ July 20-25, 1920, Yellowstone National Park, Wyoming (A. A. Nichol). Other specimens are at hand labeled "Colo." bearing C. F. Baker lot numbers.

### ***Melanotrichus incurvus* n. sp.**

Allied to *viridicatus* Uhler, but smaller, second antennal segment shorter, not equal to width of pronotum at base; right genital clasper with the apical one-third recurved inwardly, slender and acuminate.

♂. Length 3.2 mm., width 1.2 mm. Head: width .68 mm., vertex .37 mm. Rostrum, length .99 mm., nearly attaining posterior margins of hind coxae. Antennae: segment I, length .32 mm.; II, .84 mm.; III, .61 mm.; IV, .26 mm. Pronotum: length .47 mm., width at base .95 mm.

Coloration and pubescence nearly as in *viridicatus*; yellowish green to blue green; membrane uniformly blackish, veins pale to greenish, cubitus fuscous, pale to whitish apically. Dorsum clothed with prone, black, scale-like deciduous pubescence, and intermixed with fine, long, erect pale to yellowish hairs; venter pale pubescent, legs and antennae black pubescent. Genitalia distinctive, right clasper ligulate, apical one-third recurved inwardly, slender and acuminate; dorsal margin of genital segment expanded posteriorly into a thin chitinous plate, about as wide as long, directed obliquely distad toward the left side, while a slender spine-like process arises at the base of this plate on the right side and points directly distad, above but in the same plane with the basal third of right genital clasper.

♀. Length 3.3 mm., width 1.3 mm. Head: width .71 mm., vertex .38 mm. Antennae: segment I, length .26 mm.; II, .77 mm.; III, .59 mm.; IV, .25 mm. Pronotum: length .53 mm., width at base 1.03 mm. Very similar to the male in pubescence and coloration, but membrane more whitish on middle, bordering apex of cuneus, and on basal half of larger areole.

*Holotype*: ♂ June 12, 1900, Fort Collins, Colorado; author's collection.

*Allotype*: ♀ June 7, topotypic.

*Paratypes*: 2♂ 2♀, "Colo." 2♀ Aug. 1, 1914, Hermit Rim road, Grand Canyon, Arizona (J. C. Bradley). ♀ July 12, 1919, Jemez Springs, alt. 6,400 ft., New Mexico (J. Woodgate). ♀ June-Aug., 1907, Cheyenne, Wyoming (Fanny T. Hartman).

### **Melanotrichus chelifer** n. sp.

Allied to *incurvus*, antennal segment II not or scarcely equal to basal width of pronotum; differs in the shorter rostrum and in structure of the right genital clasper which is bifurcate or cheliform on apex.

♂. Length 3.4 mm., width 1.2 mm. Head: width .71 mm., vertex .33 mm. Rostrum, length .77 mm., scarcely attaining hind margins of middle coxae. Antennae: segment I, length .29 mm.; II, .98 mm.; III, broken. Pronotum: length .53 mm., width at base 1.03 mm.

Pubescence and coloration very similar to *incurvus*. Genital claspers distinctive, apical half of right clasper bifurcate, very much resembling the chela of a crayfish.

♀. Length 3.4 mm., width 1.3 mm. Head: width .70 mm., vertex .37 mm. Antennae: segment I, length .26 mm.; II, .84 mm. Pronotum: length .50 mm., width at base .93 mm. Very similar to the male in coloration and pubescence; membrane paler, fuscous along cubitus and in a ray-like cloud behind the areoles.

*Holotype*: ♂ July 12, 1917, Mesilla Park, New Mexico (H. H. Knight); author's collection.

*Allotype*: ♀, taken with the type.

*Paratypes*: 18♂ ♀, taken with the types. ARIZONA—♂ "Ariz. 2123" (Baker). COLORADO—♂ June 19, 1898, Fort Collins (E. D. Ball). SOUTH DAKOTA—♂ June 1, 1921, Capa; ♂ June 23, 1923, Philip (H. C. Severin).

### **Melanotrichus breviostris** n. sp.

Allied to *chelifer* but larger and darker green in color; differs in the shorter rostrum, while length of second antennal segment (♂) is greater than basal width of pronotum.

♂. Length 4.5 mm., width 1.5 mm. Head: width .77 mm., vertex .38 mm. Rostrum, length .83 mm., only attaining hind margin of sternum. Antennae: segment I, length .37 mm.; II, 1.27 mm.; III, 1.11 mm.; IV, .34 mm.; dark green to fuscous. Pronotum: length 1.18 mm.

Color dark blue-green; membrane dark fuscous, paler on basal half of larger areole and spot bordering apex of cuneus, veins green, cubitus fuscous except under apex of larger areole where it is pale. Pubescence similar to that of *chelifer*. Genitalia very similar to *chelifer*, scarcely to be separated on that basis, although the dorsal claw of the bifurcate portion curves more strongly upward.

♀. Length 3.7 mm., width 1.5 mm. Head: width .77 mm., vertex .415 mm. Antennae: segment I, length .29 mm.; II, 1 mm.; III, .85 mm.; IV, .32 mm. More robust and hemelytra shorter than in the male, but pubescence and coloration very similar.

*Holotype*: ♂ Sept. 9, 1925, Bear River City, Utah (G. F. Knowlton); author's collection.

*Allotype*: same data as type.

*Paratype*: ♂, taken with the types.

**Melanotrichus nicholi** n. sp.

Allied to *chelifer* and *brevirostris*, but distinguished by the longer rostrum, paler color, and very distinct genital characters.

♂. Length 4 mm., width 1.4 mm. Head: width .77 mm., vertex .355 mm. Rostrum, length 1.18 mm., attaining posterior margins of hind coxae. Antennae: segment I, length .29 mm.; II, 1.23 mm.; III, .96 mm.; IV, broken. Pronotum: length .66 mm., width at base 1.15 mm.

Pubescence very similar to that of *chelifer*, but coloration more of a pale green; membrane fuscous, veins green. Genital structures distinctive; right clasper extending straight behind, at middle or a trifle beyond there arises a vertical spine which in height about equals thickness of clasper, just behind this the apical portion of clasper tapers gradually to an acuminate point, the apex of which is curved sharply mesad; above the base of right clasper the segment wall projects posteriorly as a thin, chitinous, slightly upcurved prong.

♀. Length 3.8 mm., width 1.5 mm. Head: width .83 mm., vertex .44 mm. Antennae: segment I, length .35 mm.; II, 1.27 mm.; III, .98 mm.; IV, .40 mm. Pronotum: length .62 mm., width at base 1.21 mm. More robust than the male but very similar in pubescence and coloration. Membrane fuscous, veins distinctly green, scarcely paler apically, the larger areole more greenish than fuscous.

*Holotype*: ♂ May 17, 1926, Tempe, Arizona (A. A. Nichol); author's collection.

*Allotype*: same data as the type.

Named in honor of the collector, Mr. Andrew A. Nichol, whose interest and skill in collecting has revealed a large number of new Hemiptera from Arizona.

**Melanotrichus atricornis** n. sp.

Allied to *inconspicuus* Uhler, but distinguished by the black antennae and genital claspers; differs from *tibialis* Van D. in the green tibiae and genital claspers.

♂. Length 3.9 mm., width 1.25 mm. Head: width .78 mm., vertex .43 mm.; ridge at base of vertex and the frons set with prominent black bristles; frons prominent above base of tylus, shape of head much as in *Ilnacora*. Rostrum, length .89 mm., scarcely attaining hind margins of intermediate coxae, greenish, apical segment black. Antennae: segment I, length .43 mm.; II, 1.36 mm.; III, 1.15 mm.; IV, .41 mm.; black, sometimes brownish black apically. Pronotum: length .5 mm., width at base .98 mm.; disk nearly flat, basal margin transverse, but rounding to basal angles.

General coloration pale bluish-green, antennae and apex of rostrum black; tarsi fuscous apically, claws black. Membrane uniformly fuscous, veins pale to green. Dorsum clothed with prominent black, bristle-like hairs, intermixed with prostrate, black, elongate scale-like pubescence; ventral surface of body with pale pubescence, femora bearing black hairs, tibial spines and pubescence black. Genital claspers distinctive; left clasper ligulate, curved along the ventral segment wall, slightly broader apically, incurved, dorsal margin terminating in a

small claw-like hook; right clasper folded upon itself before middle, a flattened process arising on inner margin of middle, projecting posteriorly and bearing five or six small teeth on its distal margin, apical one-third of clasper acuminate, bearing several small teeth on its inner margin.

♀. Length 3.9 mm., width 1.5 mm. Head: width .84 mm., vertex .5 mm. Antennae: segment I, length .41 mm.; II, 1.18 mm.; III, .86 mm.; IV, .42 mm. Pronotum: length .52 mm., width at base 1.05 mm.

Very similar to the male in pubescence and coloration. In some specimens the membrane is abbreviated, not or scarcely covering apex of abdomen.

*Holotype*: ♂ May 28, 1926, Lillooet, British Columbia (J. McDunnough); Canadian National collection.

*Allotype*: ♀, taken with the type; author's collection.

*Paratypes*: 13 ♂ ♀, taken with the types on sage brush (*Artemisia* sp.).

### **Melanotrichus wileyae** n. sp.

Allied to *coagulatus* Uhler, but larger, second antennal segment much longer, dorsum more thickly and evenly clothed with silvery scale-like pubescence and intermixed with pale simple pubescence.

♂. Length 4.3 mm., width 1.5 mm. Head: width .89 mm., vertex .33 mm.; eyes larger and more prominent than in *coagulatus*. Rostrum, length 1.3 mm., just attaining posterior margins of mesocoxae. Antennae: segment I, length .35 mm.; II, 1.7 mm.; III, broken; pale, pale pubescent. Pronotum: length .58 mm., width at base 1.15 mm.

Dorsum thickly clothed with silvery scale-like pubescence and intermixed with pale simple pubescent hairs, a few dusky hairs appear on clavus and corium only; the silvery, scale-like pubescence also present on sides of thorax and venter; legs pale pubescent, spinules pale. General coloration pale to pale green, hemelytra more green; membrane pale, outer margin beyond cuneus dusky, veins green.

*Holotype*: ♂ Aug. 8, 1921, Salt Wash Creek, Emery County, Utah (Grace O. Wiley); author's collection.

### **Melanotrichus leviculus** n. sp.

Distinguished by the small size, uniformly greenish color and pale dusky membrane.

♀. Length 2.9 mm., width 1.15 mm. Head: width .65 mm., vertex .37 mm.; frons rather full and evenly rounded. Rostrum, length .86 mm., scarcely attaining posterior margins of hind coxae. Antennae: segment I, length .21 mm.; II, .71 mm.; III, .86 mm.; IV, .47 mm.; greenish yellow, last two segments dusky. Pronotum: length .36 mm., width at base .92 mm.

Color uniformly greenish or yellowish green, apex of rostrum and the claws black. Clothed with pale to dusky brown simple pubescence and rather sparsely intermixed on dorsum with fine, silvery, sericeous pubescence; tibial spines pale yellowish, concolorous with the tibiae. Membrane uniformly pale dusky, veins green, not or very little surpassing apex of abdomen.

♂. Length 2.9 mm., width 1 mm. Head: width .61 mm., vertex .32 mm. Antennae: segment I, length .21 mm.; II, .83 mm.; III, .71 mm.; IV, .31 mm. Pronotum: length .33 mm., width at base .80 mm. Very similar to the female in

pubescence and coloration, but hemelytra longer, base of cuneus about even with tip of abdomen. Genital claspers small but distinctive, left clasper forming a moon-shaped semicircle as viewed from behind, while right clasper is in the form of a simple hook.

*Holotype*: ♀, Sea Cliff, New York (O. Heidmann); Cornell University collection.

*Allotype*: topotypic. 2 ♀, taken with the types on *Suaeda maritima* which is doubtless the host plant.

**Melanotrichus mimus** n. sp.

Allied to *vigilax* Van D., but differs in the longer rostrum and blue-green areoles of the membrane.

♂. Length 3.6 mm., width 1.2 mm. Head: width .72 mm., vertex .20 mm.; eyes large and prominent, vertex distinctly concave, the poorly defined carina merely indicated by the posterior margin of the concave area. Rostrum, length .89 mm., attaining posterior margin of sternum. Antennae: segment I, length .29 mm., rather thick; II, 1.09 mm., cylindrical, not as thick as segment I; III, .89 mm.; IV, .24 mm.; dusky green, segment I more greenish. Pronotum: length .52 mm., width at base .95 mm.

Color green to bluish green; membrane pale dusky, veins and areoles blue-green. Dorsum clothed with simple, soft yellowish pubescence, and intermixed with much finer, appressed, sericeous silvery pubescence. Genital claspers small, left clasper a simple curved hook, gradually tapering from middle to an acuminate point. Right clasper somewhat thicker, curved, bluntly acuminate on apex.

♀. Length 3.4 mm., width 1.26 mm. Head: width .74 mm., vertex .355 mm. Rostrum, length .95 mm., reaching slightly behind posterior margin of sternum. Antennae: segment I, length .26 mm.; II, 1.06 mm.; III, .62 mm.; IV, broken. Pronotum: length .54 mm., width at base 1.11 mm. More robust than the male but very similar in coloration and pubescence.

*Holotype*: ♂ April 19, Tucson, Arizona (A. A. Nichol); author's collection.

*Allotype*: ♀ May 4, 1925, Santa Catalina Mts., alt. 2700 ft., Arizona (A. A. Nichol).

*Paratypes*: ♂, taken with the type 3 ♀, taken with the allotype.

**Melanotrichus albocostatus** (Van. D.).

A good series of this species has been examined, as follows: BRITISH COLUMBIA—♂ ♀ May 28, 1926, Lillooet (J. McDunnough), taken on "yellow crucifer." 2 ♂ June 4, 1921, Cranbrook (C. Garrett). NEVADA—♂ ♀ May 18, 1924, Pyramid Lake (E. R. Hall). COLORADO—2 ♂ June 17, 1918, Denver (L. O. Jackson).