

A NEW NEOTROPICAL SPECIES OF *MOSILLUS* (DIPTERA: EPHYDRIDAE)

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ABSTRACT

Mosillus stegmaieri n. sp. is described from Florida and a key and illustrations including characters of the male genitalia are furnished to distinguish the three American species.

Two species of the genus *Mosillus* Latreille (*Gymnopa* Fallén) are currently known to occur in the Western Hemisphere, *M. tibialis* Cresson which is widespread in North America and south into the Neotropical Region, and *M. bidentatus* (Cresson) which occurs in the West as far east as Manitoba and New Mexico. The purpose of this paper is to describe a new species which has been confused with the Neotropical population of *M. tibialis*, and to give a key and illustrations facilitating recognition.

KEY TO THE AMERICAN SPECIES OF *Mosillus*

1. Face with whitish pollen only in antennal fovea; parafacies each with two small white pollinose spots at eye margin at level of antenna; fifth tergum of abdomen with distomedian area rugulose to scabrose but without dense microsetae *bidentatus* (Cresson)
Face with extensive areas of whitish pollen; parafacies each with long angulate area of whitish pollen near eye margin; fifth tergum of abdomen with elongate oval median area with dense microsetae 2
2. Wing with yellowish to smoky tinge; whitish pollinose area of parafacies more truncate below, scarcely extending below lower eye margin; male surstylus angulate between the bristly and microsetose portions of the margin, inner clasper bilobed distally *tibialis* Cresson
Wing whitish; whitish pollinose area of parafacies more acutely angulate below, extending more than half the distance from lower eye margin to oral margin; male surstylus without distinct angle between bristly and microsetose portions of margin, inner clasper a simple rounded lobe distally *stegmaieri*, n. sp.

Mosillus stegmaieri Wirth, new species

(Fig. 2, 5, 8, 9, 12)

Male, female.—Wing length 2.20-2.34 mm. (av. 2.26).

Shining black, in some lights with greenish or violet reflections; wing whitish, costa yellowish; halter whitish. Antenna brown, third segment reddish brown; tibiae pale brown, hind tibia dark brown in midportion, all with dense silvery-white pollen on outer surface; tarsi yellowish brown, four distal tarsomeres on fore leg and two distal tarsomeres on mid and hind legs dark brown.

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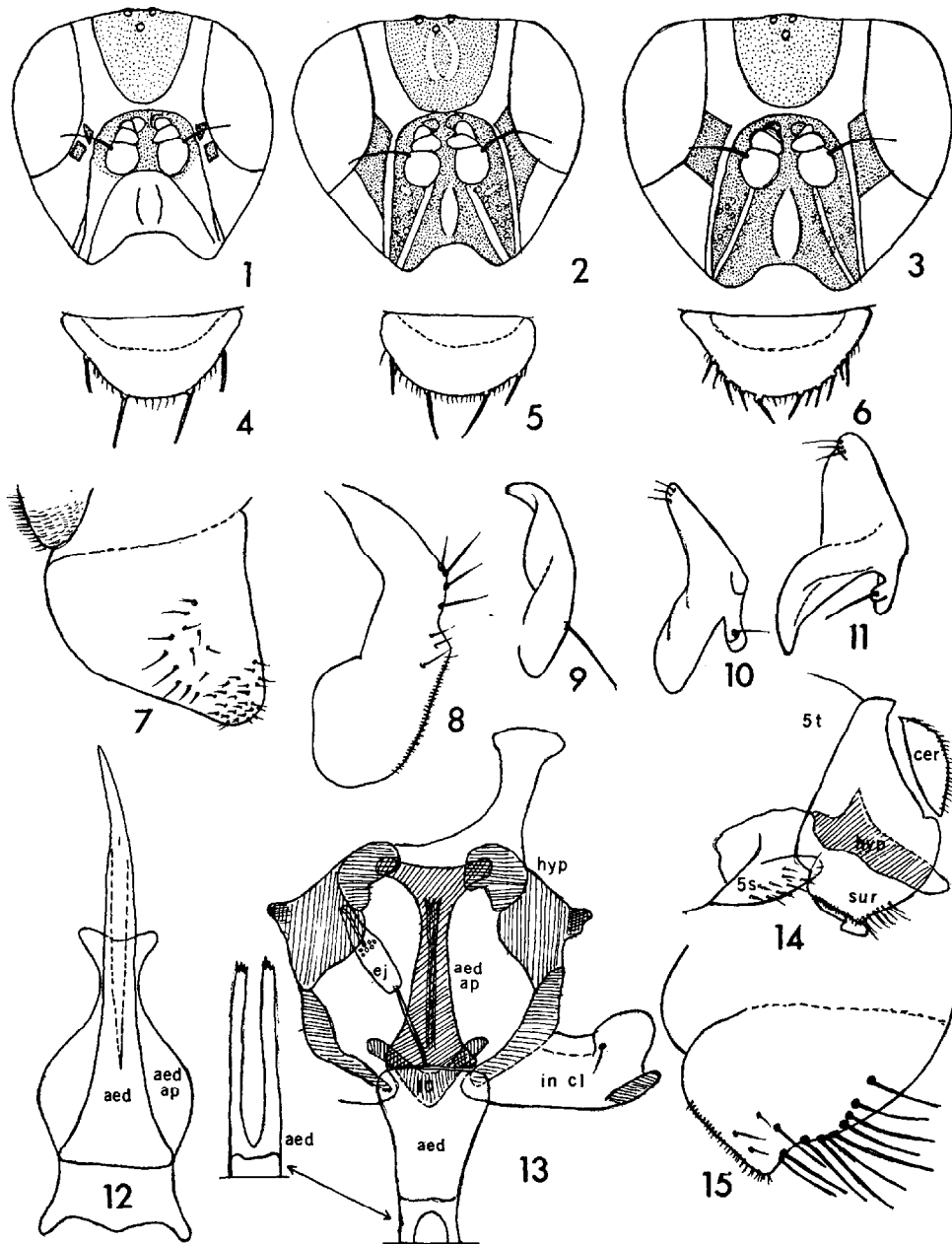


Fig. 1-15, *Mosillus* spp. 1-3, face view of head, whitish pollinose areas stippled: 1, *bidentatus*; 2, *stegmaieri*; 3, *tibialis*. 4-6, dorsal view of scutellum: 4, *bidentatus*; 5, *stegmaieri*; 6, *tibialis*. 7, 8, 15, male surstylus: 7, *bidentatus*; 8, *stegmaieri*; 15, *tibialis*. 9, 10, 11, inner clasper (lateral process of hypandrium): 9, *stegmaieri*; 10 and 11, different views of *bidentatus*. 12, ventral view of aedeagus and aedeagal apodeme of *stegmaieri*. 13, ventral view of male genitalia of *tibialis*, left inner clasper removed, and tip of aedeagus shown separately at left. 14, lateral view of tip of male abdomen of *tibialis*.

Abbreviations: aed.—aedeagus; aed. ap.—aedeagal apodeme; cer.—cercus; ej.—ejaculatory apodeme; hyp.—hypandrium; in cl.—inner clasper; st.—sternum; sur.—surstylus; t.—tergum.

Head: Frons 0.47 as wide as breadth of head; combined frons and vertex slightly broader than long; orbital margin with row of fine setae; mesofrons with scattered fine setae of same length as on orbits, with coarse whitish scalelike pollen except a pair of bare crescentic submedian stripes below anterior ocellus. Face (Fig. 2) densely whitish pollinose, except facial tubercle, two small lateral spots below antennae, scattered dots at bases of facial setae, and a narrow line bordering parafacies shining black; parafacies with a single whitish pollinose patch with oblique upper margin at level of antenna base, and extending ventrally in an acute angle along parafacial suture for over half the distance from lower eye margin to oral margin.

Thorax: Mesonotum and scutellum with coarse whitish pollinosity, with tiny blackish dots at bases of the short, fine semi-appressed setose vestiture. Scutellum (Fig. 5) only slightly convex, margin with four stout bristles arising from small round tubercles, the laterals and apicals nearly equidistant, their lengths about as great as distance between their bases. Mesopleuron with large posterior area before wing base with coarse whitish scabrose pollinosity. Fore femur with anteroventral armature of 7-8 stout spines on distal half. Wing with second costal section 1.88-2.24 (av. 2.08) as long as third; distal section of fourth vein 1.70-1.95 (av. 1.78) as long as next to last section.

Abdomen: Polished black with very sparse vestiture of fine, appressed setae; second tergum with anterior band of coarse gray microsetae extending to about one-half its width and up to one-fifth the length of tergum in midportion; fifth tergum with an oval median longitudinal area of dense gray microsetae extending its entire length. Male genitalia with surstylus (Fig. 8) bearing a scattered line of long bristles proximally on hind margin, followed anteriorly by a marginal row of very fine microsetae, the margin with only a slight angulation between these areas. Inner clasper (Fig. 9) or lateral process of hypandrium in form of a simple lobe with simple rounded apex and bearing a single long hair on anterior margin. Aedeagal apodeme (Fig. 12) broadly vase-shaped in ventral view; aedeagus tapering distally in a long slender blade cleft about two-thirds way to base, the distal portion filamentous.

Distribution.—New Jersey, south through the West Indies to Venezuela and Ecuador, Mexico.

Types.—Holotype male, allotype female, Miami, Dade Co., Florida, 14 April 1967, C. E. Stegmaier, swept from grasses on seashore (Type no. 70438, USNM). Paratypes, 21 ♂, 18 ♀, as follows: FLORIDA: Biscayne Bay, Mrs. A. T. Slosson, 2 ♂ (Amer. Mus. Nat. Hist.). Bradenton, March, M. C. Van Duzee, 2 ♀. Fort Myers, 24 Apr. 1960, A. L. Melander, 1 ♂. Long Key, 19 Apr. 1923, Matecumba, 1 Feb. 1933, A. L. Melander, 1 ♂. Miami, same data as type, 5 ♂. Placida, 11 Apr. 1952, J. R. Vockeroth 3 ♂ (Cam. Nat. Coll.). Punta Gorda, 16 Nov. 1911, 2 ♂, 2 ♀. St. Petersburg, 24 Feb. 1924, E. T. Cresson, Jr., 1 ♂, 6 ♀; 26 March 1932, A. L. Melander, 1 ♂; 21 Dec. 1964, C. B. Bennett, in Steiner trap, 2 ♀. NEW JERSEY: Wildwood, 18 July 1908, E. T. Cresson, Jr., 8 ♂, 3 ♀. BAHAMAS, W. I.: Andros Town, Andros Island, 7-13 Mar. 1966, O. L. Cartwright, 1 ♀. BARBUDA, W. I.: Cocoa Point, 28 Apr. 1958, J. F. G. Clarke, 1 ♀. BERMUDA: St. George, 3 Feb. 1934, A. L. Melander, 1 ♀. ECUADOR: Pal-

mar, Guayas, 10 Oct. 1954, R. Levi-Castillo, 1 ♂. MEXICO: Mazatlan, Sinaloa, 22 July 1954, Cazier, Gertsch, and Bradts, 1 ♀. Progreso, Yucatan, 11 Dec. 1907, 1 male; 7 Aug. 1964, J. C. and D. Pallister, 1 ♂ (AMNH). San Blas, Nayarit, 20 July 1951, P. D. Hurd, 2 ♂. VENEZUELA: Tacarigua, 1 March 1945, M. Villegas-O., 1 ♀.

Discussion.—This species is named in honor of the collector, Carl E. Stegmaier, Jr. of Hialeah, Florida, in recognition of his important contributions to the biology of Florida Diptera. Paratypes are deposited in the Academy of Natural Sciences in Philadelphia, the Florida State Collection of Arthropods, Gainesville, and the U. S. National Museum in Washington, D. C.

Mosillus stegmaieri is very closely related to *M. tibialis* Cresson, but can be distinguished from it by the more acutely angulate and more extensive whitish pollinose marking on the parafacies, the more definite whitish pollinose area on the posterior margin of the mesopleuron, the presence of only two pairs of well-developed marginal scutellars, the whitish wings, the less angulate surstylus, the simple rounded apex of the inner clasper and the more convexly swollen aedeagal apodeme, and longer, more pointed hyaline distal prolongation of the aedeagus.

Mosillus tibialis Cresson
(Fig. 3, 6, 13-15)

Mosillus tibialis Cresson, 1916, Entomol. News 27: 149 (male, female; New Jersey).

Gymnopa tibialis (Cresson); Cresson, 1922, Trans. Amer. Entomol. Soc. 47: 329 (redescribed; distribution); Cole, 1923, Proc. California Acad. Sci. (4) 12: 478 (Baja California); Cresson, 1942, Trans. Amer. Entomol. Soc. 68: 106 (distribution); Cresson, 1946, Trans. Amer. Entomol. Soc. 71: 136 (Neotropical distribution).

Male, female.—Wing length 2.44-2.62 mm (av. 2.51).

Differing from *M. stegmaieri* n. sp. in the following: its larger size; wing with more yellowish to smoky tinge. Pollen of frons brassy, not as dense, without the bare crescent-shaped marks below anterior ocellus. Median tubercle of face not as prominent, the whitish pollinose mark on parafacies (Fig. 3) much shorter and not as acutely angulate below, extending very little below level of lower eye margin. Scutellum (Fig. 6) with about three pairs of slightly smaller marginal hairs arising from distinct tubercles in addition to the stronger apical and lateral pairs. Sca-brose posterior area of mesopleuron not so prominent. Male genitalia (Fig. 13, 14) with surstylus (Fig. 15) distinctly angulate between the posteroventral area of long bristles and the anteroventral row of fine microsetae along margin. Inner clasper expanded distally in a broadly rounded anterior lobe bearing a subapical bristle, and a stronger, more acute posterodistal process. Aedeagus shorter and broader than in *M. stegmaieri*, basal portion more strongly sclerotized to nearly half of total length, distal portion cleft into two hyaline blades, each with apical serrations.

Distribution.—Widespread and very common in saline areas in North

America from British Columbia to Quebec, and south to the Bahamas and Mexico.

Type.—Holotype male, Wildwood, New Jersey, 18 July 1908, E. T. Cresson, Jr. (Type no. 6103, Acad. Nat. Sci. Philadelphia).

New Neotropical Records.—BAHAMAS, W. I.: Turks and Caicos Islands, South Caicos Island, 11 Feb. 1953, E. B. Hayden and G. B. Rabb, 1 ♂. MEXICO: Chihuahua, Chihuahua, 12 Aug. 1951, on *Baccharis*, P. D. Hurd, 1 ♀. Milpa Alta, D. F., 8 Dec. 1953, R. Nettel-F., 1 ♂, 2 ♀. Mulege, Baja California, 14 May 1921, E. P. Van Duzee, 1 ♂. Oaxaca, L. O. Howard coll., 1 ♂. Texcoco, Mexico, 28 Nov. 1957, W. W. Gibson, 2 ♀. GUATEMALA: Coban, Alta Vera Paz, 14 May 1926, J. M. Aldrich, 1 ♀.

Discussion.—The type series of *M. tibialis* in the Philadelphia Academy collection was examined and found to include: Holotype and ten male and two female paratypes, *M. tibialis*; allotype and eight male and two female paratypes, *M. stegmaieri*.

Mosillus bidentatus (Cresson)

(Fig. 1, 4, 7, 10-11)

Gymnopa bidentata Cresson, 1926, Trans. Amer. Entomol. Soc. 52: 249 (male, female; Utah); Cresson, 1942, Trans. Amer. Entomol. Soc. 68: 106 (distribution).

Mosillus bidentatus (Cresson); Wirth, 1965, Cat. Dipt. N. Amer. p. 734 (combination).

Male, female.—Wing length 2.20-2.72 mm (av. 2.50).

More closely related to the Palearctic *M. subsultans* (Fabricius), and differing from *M. tibialis* and *M. stegmaieri* as follows: Wing creamy white, the veins yellowish; second costal section 2.06-2.26 (av. 2.20) times as long as third; last section of fourth vein 1.50-1.68 (av. 1.55) times as long as next to last. Mesofrons much smaller, roughened and furnished with sparse coarse brassy pollen. Face (Fig. 1) shining, without pollinose vestiture, pitted on sides, facial tubercle prominent; parafacies transversely wrinkled below, shining, with two whitish pollinose areas at eye margin at level of antenna; antennal fovea whitish pollinose. Mesonotum with three shining black narrow longitudinal lines in addition to the scattered black dots at the seta bases. Fore femur with 6-7 anteroventral spines. Scutellum (Fig. 4) with only the lateral and apical bristles developed and arising from small rounded tubercles. Mesopleuron rugulose posteriorly, but without whitish pollinosity. Abdominal vestiture of slightly stronger and more numerous setae; fifth tergum finely rugulose posteriorly in midportion, but without the definite oval patch of dense microsetae. Male genitalia with surstylus (Fig. 7) more elongate, in form of a rather trapezoidal lobe with anterolateral corner longer, rounded and provided with numerous fine setae. Inner clasper (Fig. 10, 11) with distal portion broadly rounded, a small thumblike anterior, sub-basal lobe bearing a sub-apical tubercle with a fine hair.

Distribution.—Western North America from British Columbia and Baja California east to Manitoba and New Mexico.

Type.—Holotype male, Saltair, Utah, July 1908, J. M. Aldrich (Type no. 6318, Acad. Nat. Sci. Philadelphia).

Discussion.—The Palaearctic *M. subsultana* (Fabricius) has the uniformly shining face with prominent tubercle like *M. bidentatus*, and the surstyli of the male genitalia are similar in shape and setose vestiture, but with even more prominent anterodistal elongation. In *M. subsultans*, moreover, the white pollinose area on the parafacies is a narrow line along the eye margin, the tibiae and fore tarsus are blackish, the mesofrons is not pollinose and the mesonotum and scutellum are uniformly shining black without pollinose vestiture. The fifth tergum is much broader and the median rugulose area is more extensive, the male inner claspers are deeply divided apically into two lobes of the type found in *M. tibialis*, but the anterior one is in the form of a convoluted wing and the posterior one is rugulose and angulate.

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