

The Great Lakes Entomologist

Volume 2
Numbers 1/2 -- Spring/Summer 1969 *Numbers*
1/2 -- Spring/Summer 1969

Article 9

June 2017

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Recommended Citation

Tigner, Timothy C. 2017. "Three New Species and a Key for the Genus *Callidora* (Hymenoptera: Ichneumonidae)," *The Great Lakes Entomologist*, vol 2 (1)
Available at: <https://scholar.valpo.edu/tgle/vol2/iss1/9>

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THREE NEW SPECIES AND A KEY FOR THE GENUS *CALLIDORA* (HYMENOPTERA: ICHNEUMONIDAE)

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The genus *Callidora* (subfamily Porizontinae) has traditionally contained a single European species, *Callidora albovincta* (Holmgren). Townes (1969) redefined the genus and included a second species (*Campoplex analis* Gravenhorst). At the same time he referred to three undescribed species, two from North America and one from the Philippines. Descriptions of these three are presented here together with a key to all five species now in *Callidora*.

Several relationships within this genus are noteworthy. The two North American species, *tegularis* and *surata*, are morphologically most alike. Quite distinct from these, but similar in body shape and propodeal sculpture is the European species *analis*. The remaining two, *albovincta* and *atrognatha*, have distinctive propodeal carinae in addition to a thorax which is more elongate in profile than that of the other species. Thus *Callidora* can be divided into two species groups which are easily distinguished on the basis of body shape and propodeal sculpture.

It should be noted that among the specimens of *albovincta* cited below, one is from Japan. Previously this species has been recorded only in Europe. This makes the apparent relationship between *albovincta* and *atrognatha* (the Philippine species) more understandable.

ARTIFICIAL KEY TO THE SPECIES OF *CALLIDORA*

1. Nervulus opposite basal vein; mandible black. 1. *atrognatha*
1. Nervulus distad of basal vein by at least its thickness; mandible yellow 2
2. Transverse carina at base of areola not swollen, distinctly separated from basal margin of propodeum; basal carina complete behind first lateral area. Female antenna with median white band. 2. *albovincta*
2. Transverse carina at base of areola swollen and situated at basal margin of propodeum or, if not swollen, then basal carina incomplete behind first lateral area. Female antenna brown to black. 3
3. Genal carina flared strongly outward from mandible; inside spur of hind tibia 0.8 to 0.9 as long as first segment of hind tarsus. 3. *analis*
3. Genal carina not flared outward from mandible; inside spur of hind tibia 0.5 to 0.75 as long as first segment of hind tarsus. 4
4. Flagellum with 31 to 33 segments; tegula strongly convex; propodeal spiracle usually adjacent to pleural carina; hind tibia without yellow stripe. 4. *tegularis*
4. Flagellum with 27 to 30 segments; tegula moderately convex; propodeal spiracle separated from pleural carina by a distance approximating spiracular diameter; hind tibia with median dorsal yellow stripe. 5. *surata*

1. *Callidora atrognatha*, new species

Front wing 4.5 to 5.5 mm. long. Flagellum with 34 to 36 segments. Propodeal carinae as in *albovincta* -- basal transverse carina complete behind first lateral area, removed from propodeal margin at base of areola (and not swollen) so that noticeable basal area is present.

Antenna, head, mandible, thorax, coxae, first trochanters, and petiole black; second trochanters brown to black. Tegula, labial palpus, and basal segment of maxillary palpus brown; terminal three segments of maxillary palpus yellow. Basal 0.75 or more of second abdominal tergite black, the rest of the abdomen unevenly orange to orange-brown. Front femur tawny to orange-brown, its tibia stramineous to tawny; first two tarsal segments stramineous to gray-brown, last three gray-brown to brown. Middle femur and tibia colored like those of front leg, usually slightly darker; middle tarsus brown. Hind femur and tibia orange-brown to ferruginous, tibia becoming dark brown apically and basally, darkest dorsally; hind tarsus brown to black.

Type: , Mt. St. Tomas, elev. 7200 ft., near Baguio, Philippines, Nov. 29,

1953, H., M., & D. Townes (Townes collection).

Paratypes: 3 ♀♀, Mt. St. Tomas, near Baguio, Philippines, elev. 6500 ft., April 3-4, 1953, H., M., & D. Townes (Townes collection).

2. *Callidora albovineta* (Homgren)

Limneria albovineta Holmgren, 1860. *Svenska Vetén. Akad. Handl.* (n.f.) 2 (8):56. Type: ♀, Sweden: Bahusia (Stockholm).

Callidora annellata Thomson, 1887. *Opuscula entomologica* 11:1136. Types: 1 ♂, 1 ♀, Sweden: Palsjö in Skåne, and Germany: Munich (Lund?).

Specimens examined: 1 ♀, Hothiojii, Tokyo, Japan, July 3, 1930, Kaku Sato (Townes collection). 1 ♀, Ljungby, Sweden, Aug. 18, 1958, elev. 150 m., D. Townes (Townes collection). 1 ♀, Blankenburg, Thuringia, E. Germany, date and collector unknown (Townes collection). 1 ♀, "Mähren," (Moravia, Czechoslovakia?), date and collector unknown (Townes collection). 1 ♂ and 1 ♀, Croix-Valmer, Var, France, Aug., 23, 1961, J. F. Aubert (Townes collection). 1 ♂, Scheffau, Tirol, Austria, elev. 800m., July 26, 1958, D. Townes (Townes collection). 1 ♂, Thuringia, E. Germany, date unknown, O. Schmiedeknecht (Townes collection).

3. *Callidora analis* (Gravenhorst)

Campoplex analis Gravenhorst, 1829. *Ichneumonologia europaea* 3:583. Type: ♀, no locality given (Berlin).

Specimens examined: 2 ♀♀, Vecāki, Latvia, June 24, 1957, E. Ozols (Townes collection). 1 ♀, Upper Bavaria, near Andechs, W. Germany, June 17, 1959, Haeselbarth (Townes collection).

4. *Callidora tegularis*, new species

Front wing 4.5 to 6.0 mm. long. Flagellum with 31 to 33 segments. Basal transverse carina of propodeum greatly swollen at base of areola and situated at basal margin of propodeum. Tegula strongly, unevenly convex so that outer half of hind margin C-shaped when seen from behind. Propodeal spiracle usually adjacent to pleural carina. Propodeum in profile evenly shallowly convex to slightly angulate.

Antenna, head, thorax, coxae, and petiole black. Tegula, mandibles, and palpi yellow. Postpetiole and tergites 2-4 as seen from above usually black with wide apical orange bands, sometimes only tergites 2 and 3 with orange bands, or sometimes bands on more than three segments. Tergite 3 usually as least half orange with a semicircular black patch basally. Tergites 3-7 usually orange laterally, sometimes blackish. Front leg beyond coxa stramineous, the first three tarsal segments slightly darker apically and the last two segments gray-brown. First middle trochanter stramineous to rufous, second trochanter yellowish-white to tan; middle femur stramineous to rufous, its tibia stramineous dorsally, grading to tawny beneath; middle tarsus colored as that of front leg. First hind trochanter from black dorsally and brown beneath to completely black, second hind trochanter yellowish-white to tan; hind femur tawny to rufous, its tibia similar, but becoming gray-brown to black toward apex and

base, darkest dorsally; hind tarsus gray-brown to brown.

Type: ♀, Ann Arbor, Mich., June 16-17, 1960, H. & M. Townes (Townes collection).

Paratypes: 5 ♂♂, Ann Arbor, Mich., May 28, 31, 1959, June 5, 28, 1961, June 5, 1968, H. & M. Townes (Townes collection). 4 ♂♂, Washtenaw Co., Mich., June 2, 3, 3, 11, 1967, R. W. Carlson (Carlson collection). 2 ♀♀, Spring Brook, Pa., June 8, 1945, H. K. Townes (Townes collection). 2 ♀♀, Ann Arbor, Mich., June 1, 9, 1959, H. & M. Townes (Townes collection). 4 ♀♀, Washtenaw Co., Mich., June 2, 7, 7, 10, 1967, R. W. Carlson (Carlson collection). 2 ♀♀, Ann Arbor, Mich., June 10, 1967, H. & M. Townes (Bain collection).

5. *Callidora surata*, new species

Front wing 4.0 to 6.0 mm. long. Flagellum with 27 to 30 segments. Basal transverse carina of propodeum greatly swollen at base of areola and situated at basal margin of propodeum. Tegula moderately evenly convex so that hind margin smoothly shallowly curved when seen from behind. Propodeal spiracle separated from pleural carina by a distance approximating spiracular diameter. Propodeum in profile moderately convex and slightly angulate. Face with small tubercle just below and between antennal sockets, connected to them by faint carinae (present occasionally in *tegularis* also, but seldom as prominent).

Coloration like that of *tegularis* with the following exceptions: Hind tibia gray-brown to black with obvious to obscure median dorsal yellow stripe. Abdomen as seen from above black, usually with narrow apical orange bands on tergites 2 and 3; postpetiole with narrow yellow line on apical margin; tergite 3 usually more than half black.

Type: ♀, Glenwood, Alberta, June 19, 1938, R. W. Salt (Townes collection).

Paratypes: 2 ♀♀, Harold, S. D., June 2, 1944, H. C. Severin (Townes collection). 1 ♀, Douglas, Wyo., June 13, 1943, collector unknown (Townes collection). 1 ♀, St. Antonio, Tex., April 4, 1947, H. & M. Townes (Townes collection). 1 ♂, Coalhurst, Alberta, May 30, 1938, R. W. Salt (Townes collection).

ACKNOWLEDGMENTS

The kind advice and careful supervision of Prof. Henry Townes have made this paper possible. Most of the specimens examined were his also. Additional specimens were provided by Dr. Robert Carlson and by Mr. John Bain.

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