**THE NEARCTIC SPECIES OF *IPHITRACHELUS* WALKER
(HYMENOPTERA, PROCTOTRUPOIDEA, PLATYGASTRIDAE),
WITH A KEY TO WORLD SPECIES**

LUBOMIR MASNER

Biosystematics Research Institute, Agriculture Canada, Ottawa

Abstract

Can. Ent. 108: 1065–1068 (1976)

The three species of *Iphitrachelus* in America north of Mexico are reviewed. *I. canadensis* n. sp. is described from Ontario, Quebec, and Newfoundland. A key to all known species is given. The world distribution of *Iphitrachelus* is discussed.

Iphitrachelus Walker (tribe Iphitrachelini) is the only genus of Inostemmatinae with tetramerous tarsi. It is also peculiar on account of its pectinate spur on the fore tibia (Fig. 3), the high insertion of antennae, and a deep scrobe (Fig. 6) (Masner 1957). *Iphitrachelus* in the New World was confused by Ashmead (1893) with *Allotropa* Foerster (Muesebeck 1939). The first Nearctic species of *Iphitrachelus* was described by Jackson (1966), based on a single female specimen. Three Nearctic species are recognized in the material mentioned below. Two of them, namely *I. lar* Walker and *I. foutsii* Jackson, have a surprisingly wide distribution (see below), whereas *I. canadensis* n. sp. is probably restricted to the northern Nearctic. The Palearctic *I. gracilis* Masner has not yet been recorded from the Nearctic region where it seems to be replaced by *I. canadensis*.

A total of 88 specimens representing four known and several undescribed species of this extremely rare genus of Inostemmatinae were examined: 80 specimens in the Canadian National Collection, Ottawa; 3 specimens in the Hungarian National Museum, Budapest; 3 specimens in the Museum d'Histoire Naturelle, Genève; and 1 specimen each in the Bishop Museum, Honolulu, and the Museum of Comparative Zoology, Cambridge. This indicates that *Iphitrachelus*, previously known only from the Palearctic (Masner 1957, 1958) and Nearctic (Jackson 1966) regions, also is represented by several species, most of which are undescribed, in the Neotropical (Mexico, Trinidad W.I., Panamá, Colombia, Ecuador, Peru, Brazil/Rio de Janeiro, Espírito Santo, Mato Grosso, Santa Catarina/Argentina), Oriental (Ceylon, Philippines), and Australian (New Caledonia, New Britain, New Guinea) regions. The genus is represented in the Ethiopian region by one undescribed species from the Congo (Lars Huggert, pers. comm.). All species are closely related to each other and can not be allocated to distinct species groups.

***Iphitrachelus lar* Walker**

Iphitrachelus lar Walker, 1835, Ent. Mag. 3: 273.

This is a rare but widely distributed species ranging from Ireland to the Russian Far East (Masner 1956, 1957, 1958; Kozlov 1971). Its apparent scarcity might be explained by its small size (under 1 mm), as well as by the fact that its biology and habits are unknown. The distributional data below are the first records of this species outside the Old World. The Nearctic individuals are perfectly identical with those of the Palearctic while the Neotropical specimens differ slightly (propodeal membrane rather foamy), but not beyond the expected range of geographic variation. I have seen also individuals from New Caledonia, New Britain, and Ceylon differing in minor details and representing perhaps geographic races of *I. lar*. However, these are not considered at this moment.

MATERIAL EXAMINED (all in CNC):

SWEDEN. 1♂ Bl. Listerby, Gö., 22 July 1963, A. Sundholm coll. (det. A. Sundholm); 1♀ Bl. Rödeby Gagnekulla, 7 Aug. 1954, A. Sundholm coll. (det. A. Sundholm).

CANADA. **Ontario:** 1♀ Grenadier Island (central part), St. Lawrence Islands National Park, 2 July 1975, pan trap, E. Sigler; 1♂ as above but taken 16 July 1975, in pan trap, E. Sigler; 1♀ as above but taken by

sweeping 22 July 1975, L. Masner; 1 ♂ Crow Lake near Marmora, 11 Aug. 1959, by sweeping, L. K. Smith; 1 ♂ as above but taken 25 Aug. 1959; 1 ♀ as above but taken 20 Aug. 1975, by sweeping, L. Masner; 3 ♀ ♀ Innisville, 16 July & 29 Aug. 1963, Malaise trap, W. R. Mason; 1 ♀ Rondeau Provincial Park, 19 June 1962, S. M. Clark; 1 ♀ as above but taken 29 June 1962; 1 ♀ as above but taken 10 July 1962; 1 ♀ Aylmer West, 18 Aug. 1972, Malaise trap, W. R. Mason; 1 ♀ as above but taken 13–17 July 1972; 2 ♂ ♂ Dresden, 15 July 1962, S. M. Clark; 1 ♀, 1 ♂ as above but taken 2 July 1962.

U.S.A. **Missouri:** 1 ♀ Williamsville, 25 July–15 Aug. 1969, Malaise trap, T. J. Becker. **Georgia:** 1 ♀ Forsyth, 11 July 1970, Malaise trap, F. T. Naumann; 1 ♀ as above but taken 9 Oct. 1970.

MEXICO. **Veracruz:** 1 ♂ Puente Nacional, 18 Aug. 1960, H. Howden.

BRAZIL. **Mato Grosso:** 17 ♀ ♂ Sinop, October 1974 & November 1975, Malaise trap, M. Alvarenga; 1 ♂

FIGS. 1–6. 1–3, *Iphitrachelus lar* Walker (♀ from Dresden, Ont.): 1, propodeum and scutellum (480 X); 2, tergites I and II (540 X); 3, spur of fore tibia (1500 X). 4–6, *I. canadensis* n. sp. (♀ paratype from Crow Lake, Ont.): 4, propodeum and scutellum (480 X); 5, tergites I and II (540 X); 6, head in frontal view (750 X). (All specimens SEM, gold coated, 20 kv.)

Vila Vera, 12°46' S., 55°30' W., 500 m, October 1973, M. Alvarenga. **Santa Catarina:** 1♂ Nova Teutonia, May 1972, Fritz Plaumann.

ARGENTINA. Prov. Salta: 1♂ Embarcación, 2–6 Feb. 1950, R. Golbach (Hungarian National Museum, Budapest).

Iphitrachelus foutsii Jackson

Iphitrachelus foutsii Jackson, 1966, Proc. ent. Soc. Wash. 68: 265–267.

Described originally from a single female from Maryland, it has turned out to be a very widely spread but rare species. So far as is known it is confined to the Western Hemisphere. There is a closely related undescribed species in Trinidad, W.I., and Brazil differing from *foutsii* mainly in having the two foamy scales on tergite 1 confluent.

The three males in our material represent the first known males of *I. foutsii*. They differ from the female only in having the antennae 10-segmented, with flagellomeres very much like those in males of *I. lar*. However, the upper apical membrane of the scape is not developed.

MATERIAL EXAMINED (all in CNC):

U.S.A. **Missouri:** 1♀ Williamsville, 25 July–15 Aug. 1969, Malaise trap, T. J. Becker; 1♂ as above but caught 9–18 July 1969. **Tennessee:** 1♀ Natchez Trace State Park, 20–30 June 1972, Malaise trap, G. Heinrich. **South Carolina:** 1♀ McClellanville, 21–28 Sept. 1972, Malaise trap, R. B. Dominick.

COLOMBIA. **Antioquia:** 1♂ 7°5' N., 76°30' W., 1800 m, 22 April 1973, montane rain forest, J. Helava.

ECUADOR. **Esmeraldas:** 1♂ 11 km SE. S. Lorenzo, La Chiquita, 5 m, 3–10 June 1975, S. & J. Peck.

BRAZIL. **Espirito Santo:** 1♂ Linhares, September 1972, Malaise trap, M. Alvarenga. **Rio de Janeiro:** 1♂ Silva Jardim, August 1974, Malaise trap, F. M. Oliveira.

Iphitrachelus canadensis n. sp.

Female holotype on card point, well preserved (Canadian National Collection, Ottawa, No. 13952); Crow Lake near Marmora, Ont., 25 Aug. 1959, L. K. Smith, by sweeping forest undergrowth.

Length 0.8 mm. Dark chestnut brown, petiole reddish brown, antennae and legs including coxae uniformly dirty yellow; foamy membranes on propodeum, metasternum and petiole whitish; wings almost clear.

Head transverse, almost twice as wide as long, strongly reticulate except for clypeal declivity which is smooth and very shiny (Fig. 6). Lateral ocelli very close to inner orbits, distant from them by less than their own diameter, i.e. very far from the median ocellus. Scape with reticulation similar to that of frons, lower lamella rather wide, narrower than maximum width of scape (3:5), upper apical lamella reduced to an almost inconspicuous strip. Antennal segments 2–4 subequal, elongate, with proportionate lengths 5:7:6, segments 5–7 minuscule, triangular, slightly longer than wide, clava distinctly sausage-like, elongate, 3.7 times as long as wide. All antennal segments including scape and clava with scattered erect bristles.

Mesosoma with similar but somewhat finer reticulation as on head; however, parts of mesosoma without sculpture, smooth and highly shiny, notably anterolateral parts of pronotum, notauli, scutellar pit, mesopleura (including declivity), mesosternum, and metapleurae. Notauli distinctly dilated posteriorly and separated here by mere point of mesoscutum. Propodeal membrane thick, foamy, not transparent but appearing bubbly reticulate in both dorsal (Fig. 4) and, particularly, lateral aspects. Fore wings broadly rounded and not truncate at apices.

Tergite 1 with pair of reniform foamy scales confluent anteriorly and narrowly separated from here to the end (Fig. 5). Sternite 1 with small foamy membrane. Tergite 2 with 2 longitudinal keels anteriorly and two shallow depressions anterolaterally. Laterotergites of tergite 2 very wide, not appressed to sternite 2 which is, therefore, concealed from the sides but visible from below.

Male allotype on card point, well preserved (Canadian National Collection, Ottawa, No. 13952); same data as holotype. Differing from female only in antennal characters. Antennae 10-segmented, segments 2–10 very similar to those in *I. lar* but segment 4 distinctly shorter and stouter and segment 6 with apical neck-like constriction longer than in *I. lar*.

MATERIAL EXAMINED (paratypes in CNC No. 13952):

CANADA. **Newfoundland:** 1 ♀ South Branch, 24–31 July 1974, Malaise trap, G. Heinrich. **Quebec:** 1 ♂ Old Chelsea, 30 Aug. 1961, J. R. Vockeroth, by sweeping. **Ontario:** 1 ♀ Ottawa, Mer Bleue, 29 July 1975, L. Masner, by sweeping; 3 ♀ & 4 ♂ Crow Lake, Marmora area, 18–25 Aug. 1959, L. K. Smith, by sweeping; 1 ♀, 1 ♂ Innisville, 29 & 14 Aug. 1963, Malaise trap, W. R. Mason.

REMARKS. *I. canadensis* shares some characters with *I. gracilis* and some with *I. lar*. Metasomatic and mesosomatic characters bring *canadensis* very close to *gracilis* as does the position of the ocelli; however, the shapes of the antennal clava in the female and the flagellomeres in the male are very similar to those in *I. lar*.

Key to World Species of *Iphitrachelus* Walker (♀ ♂)

- (1) Tergite 1 with a pair of foamy scales which may be well separated or more or less confluent (Fig. 5); upper apical lamella of scape not developed or nearly absent 2
 - Tergite 1 without foamy structure (Fig. 2); upper apical lamella of scape well developed; lateral ocelli almost as far from inner orbits as from median ocellus; propodeal membrane semitransparent, not foamy; laterotergites of tergite 2 very narrow, well adpressed to sternite 2 which is partly visible in lateral view; female antennal clava slender, sausage-like; Holarctic and Neotropical *I. lar* Walker
- (2) Lateral ocelli only slightly closer to inner orbits than to median ocellus; foamy scales on tergite 1 widely separated, not contiguous; laterotergite of tergite 2 at lowest point level with ventral surface of sternite 2; Nearctic and Neotropical *I. foutsii* Jackson
 - Lateral ocelli almost touching inner orbits, separated from them by less than a diameter, very far from median ocellus; foamy scales of tergite 1 confluent at least basally; laterotergites of tergite 2 very wide, not adpressed to sternite 2, protruding below level of the sternite ... 3
- (3) Female clava slender, sausage-like, 3.7 times as long as wide; male antennal segments 7 and 8 without apical constrictions; foamy scales of tergite 1 distinctly separated from one another below the basal point (Fig. 5); Nearctic *I. canadensis* n. sp.
 - Female clava broad, massive, only 2.2 times as long as wide; male antennal segments 7 and 8 with distinct neck-like constrictions apically; foamy scales on tergite 1 almost completely confluent; Palearctic *I. gracilis* Masner

Acknowledgment

Thanks are due to Mr. G. A. P. Gibson, Biosystematics Research Institute, Ottawa, for the scanning electron microscope photographs.

References

- Ashmead, W. H. 1893. A monograph of the North American Proctotrypidae. *Bull. U.S. nat. Mus.* 45.
- Jackson, D. L. 1966. A Nearctic species of *Iphitrachelus*, with a key to the known species. *Proc. ent. Soc. Wash.* 68: 265–268.
- Kozlov, M. A. 1971. Proctotrupoids (Hymenoptera, Proctotrupoidea) of the USSR. *Horae Soc. ent. U. Soviet.* 54: 3–67. (In Russian.)
- Masner, L. 1956. First preliminary report on the occurrence of genera of the group Proctotrupoidea (Hym.) in CSR. (First part family Scelionidae.) *Acta Faun. Ent. Mus. nat. Pragae* 1: 99–126.
- . 1957. Remarks to the genus *Iphitrachelus* Walker, 1835 (Hym. Scelionidae). *Acta Soc. ent. Cechosl.* 54: 1–8.
- . 1958. Zusätzliche Bemerkungen zur Gattung *Iphitrachelus* Walk. (Hym., Scelionoidea). *Mitt. schweiz. ent. ges.* 31: 52–56.
- Muesebeck, C. F. W. 1939. A new mealybug parasite (Hym.: Scelionidae). *Can. Ent.* 71: 158–160.

(Received 9 September 1975)