

The position of the genus *Rhamnura* Enderlein among the Braconidae (Hymenoptera)

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ABSTRACT. — The position of the Afrotropical genus *Rhamnura* Enderlein, 1905, is discussed. The discovery of two tibial spurs on the fore leg places the genus apart from all other Ichneumonoidea. A new tribe is erected for the genus *Rhamnura* (Rhamnurini trib. nov.) and the tribe is retained in the subfamily Braconinae, because of the synapomorphous character-states shared with the Braconinae. The type-species, *Rhamnura capillicauda* Enderlein, 1905, is fully illustrated and redescribed.

INTRODUCTION

During the examination of the type-species of the genus *Rhamnura* Enderlein, 1905, I was very surprised to find two spurs at the apex of the fore tibia (fig. 10), a feature hitherto unknown in the Ichneumonoidea. At first I presumed it to be a teratological feature, but examination of other specimens convinced me that it was a genuine character-state of the genus. The possession of one fore tibial spur is very wide spread in the Hymenoptera, and it is considered to be the apomorphous character-state, because the oldest fossils of Hymenoptera belong to superfamilies which have two spurs on the fore tibia. The only known group of parasitic Hymenoptera with two fore tibial spurs are the Ceraphronoidea. Among the Symphyta (the oldest group of Hymenoptera) it occurs in the superfamilies Xyeloidea, Megalodontoidea and Tenthredinoidea. The superfamily Orussoidea (parasitic Symphyta) sometimes have a trace of a second spur on the fore tibia, but usually only one spur is visible at a magnification of 80 ×.

The position of the genus *Rhamnura* with such an aberrant character-state is problematic; however, the possession of two spurs on the fore tibia must be considered a plesiomorphous character-state, unless it has evolved secondarily. Since apomorphous character-states tend to cluster, it is unlikely that the double spurs on the fore tibia in *Rhamnura* developed secondarily, considering its position within the Braconinae. The clustering of apomorphous character-states is likely because morphological change is an answer to a change in the environment and it is unlikely that only one character will be involved in this change. To find the position of *Rhamnura* in the phylogenetic system one has to search for synapomorphous character-states. *Rhamnura* shares with the subfamily Braconinae of the Braconidae many more synapomorphies than with any other subfamily: the reduction of the posterior propleural flange, and of the prepectal carina, the presence of a hypoclypeal depression, the absence of dorsope and laterope, the maxillary and labial palp with 5, and 3 segments, respectively, the partly flattened 1st tergite, the narrow scutellar sulcus, and the reduction of the occipital carina. With the tribe Braconini it shares additionally the total absence of the occipital carina, the very short vein M + CU and strongly reclivous short vein cu-a of hind wing, and the position of the spiracles in the nota of the 2nd and 3rd metasomal tergites. The shape of the clypeus, scapus, venation of fore wing (veins 1-SR and cu-a), position of spiracles of propodeum, and sculpture of 2nd tergite indicate a further relationship with part of the Braconini. Because of this evidence there can be little doubt that the genus *Rhamnura* should be included in the subfamily Braconinae. However, *Rhamnura* forms within the Braconini a separate group, because the labrum is almost flat, the outer tibial spurs are (virtually) glabrous (at 80 ×, fig. 10), and the length of the ovipositor sheath is 3.5-6.5 times length of body (but according to Fahringer (1928: 174) 2.5 times occurs). In the other Braconini the labrum is more or less concave, the outer tibial spurs are more or less setose, and the ovipositor sheath is shorter than 3.5 times length of body, except in the genus *Euurobracon* Ashmead, 1900. Considering the isolated position of the genus *Rhamnura* within the Braconinae I consider it justified to erect the new tribe Rhamnurini.

The handling of the extremely long ovipositor during oviposition presents an unsolved problem (Townes, 1975), especially in those species with ovipositors longer than 1.5 times length of fore wing. The species with the longest known ovipositor also belongs to the Braconinae and has an ovipositor 14 times length of body. The long ovipositor may be used to reach deep-boring larvae of beetles (e.g., of Cerambycidae in *Euurobracon*) in decomposing organic matter. The tunnels made by the host larvae, e.g., in decaying wood, may guide the ovipositor. Unfortunately the biology of the genus *Rhamnura* is totally unknown. The extremely long ovipositor of *Euurobracon* seems to be an independent development, since *Euurobracon* has only one fore tibial spur, the labium is concave, the tibial spurs are distinctly setose, the clypeus has no dorsal carina, and the 2nd tergite possesses diverging grooves. For the terminology used in this paper, see Van Achterberg, 1979: 242-249.

Tribus Rhamnurini nov.

Diagnosis. — Labrum almost flat; mandibles medium-sized (fig. 9), their length about 1/3 of height of head; antennal sockets situated above middle level of eyes (fig. 9); face flat, but medially somewhat depressed; occipital carina completely absent; posterior propleural flange faintly indicated, but not distinctly differentiated (fig. 1); precoxal sulcus absent; pleural suture smooth; vein 1-SR of fore wing gradually merging in parastigma, its angle with vein C+SC+R sharp (fig. 13); vein cu-a of fore wing postfurcal; vein m-cu of fore wing antefurcal and posteriorly converging to 1-M; vein cu-a of hind wing strongly reclivous (fig. 4); vein M+CU of hind wing much shorter than vein 1-M; vein 1r-m of hind wing long (fig. 4); vein 1-M of hind wing not distinctly widened; fore tibia with 2 spurs (fig. 10); all outer spurs (virtually) glabrous; 1st tergite with flattened sides posteriorly, with a pair of posteriorly diverging grooves (fig. 14); 1st tergite movably joined to 2nd tergite; spiracles of 2nd and 3rd tergites in their nota; ovipositor sheath 2.5-6.5 times length of body; ovipositor straight, its apex normal, with a small dorsal notch and several ventral teeth (fig. 2).

Distribution. — Afrotropical and South Palaearctic, containing one genus: *Rhamnura* Enderlein.

Rhamnura Enderlein, 1905

Type-species: *Rhamnura capillicauda* Enderlein, 1905.

Diagnosis. — Length of body 15-24 mm; antennal segments 75-92; apex of antenna normal, without apical spine (fig. 7); inner aspect and base of scapus normal, ventrally slightly shorter than dorsally (fig. 8); eyes glabrous, slightly emarginated (fig. 9); metapleural flange absent, except for a minute protuberance; notauli absent; scutellar sulcus very narrow, smooth; propodeum without medial carina and areola; propodeal spiracle large, elliptical, and situated behind the middle of the propodeum (fig. 1); 2nd submarginal cell of fore wing parallel-sided; fore tibia without pegs; hind basitarsus with a distinct ventral row of setae; 1st tergite concave medio-basally, and without dorsal and dorso-lateral carinae; spiracles of 1st tergite elliptical, in front of middle of tergite, and not protruding (fig. 14); glymma absent; 2nd and 3rd tergites without antero-lateral grooves; hypopygium large, protruding beyond apex of metasoma, and truncate apically.

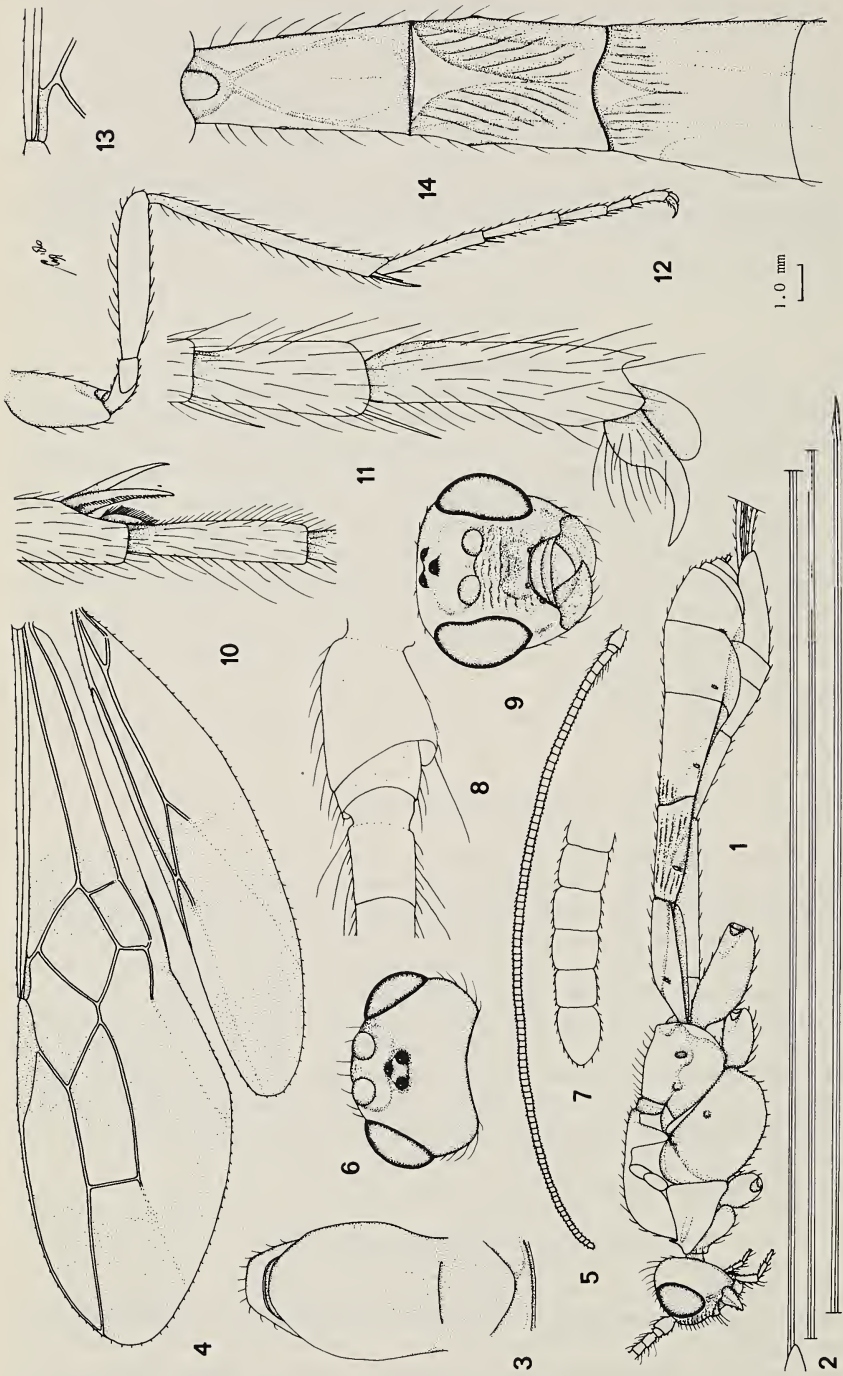
Includes 8 described species, keyed by Fahringer (1928: 167-170).

Rhamnura capillicauda Enderlein (figs. 1-14)

Enderlein, 1905: 196-197; Fahringer, 1928: 170-171; Shenefelt, 1978: 1719.

Redescribed from a ♀-paralectotype from Cameroons, Barombi Station. Length of body 22.3 mm, of fore wing 20.8 mm.

Head. — Antennal segments 92, length of 3rd segment 1.3 times 4th segment, length of 3rd and 4th segments 1.8 and 1.4 times their width, respectively, with some blackish long setae;



Figs. 1-14, *Rhammura capillicauda* Enderlein, paralectotype, ♀. 1, habitus, dorsal aspect; 2, ovipositor; 3, mesonotum, dorsal aspect; 4, wings; 5, head, dorsal aspect; 6, head, lateral aspect; 7, apex of antenna; 8, detail of scapus, outer lateral aspect; 9, head, frontal aspect; 10, fore tibial spurs; 11, inner hind claw; 12, hind leg; 13, detail of vein 1-SR of fore wing; 14, 1st-3rd metasomal tergites, dorsal aspect. 1, 2, 4, 5, 12: scale-line. 1 ×; 3: 1.7 ×; 6, 9, 13, 14: 2.0 ×; 7, 8, 11: 8.0 ×; 10: 4.0 ×.

penultimate segment of antenna 0.9 times its width (fig. 7); length of maxillary palp 0.9 times height of head; dorsal length of eye 1.4 times temple; temple subparallel posteriorly (fig. 6); POL : Ø ocellus : OOL = 5 : 6 : 14; frons shallowly concave, smooth; vertex sparsely punctulate, rather flat; face transversely rugose (fig. 9); anterior tentorial pits scarcely impressed; clypeus flat, but ventrally depressed, smooth, with only a medio-dorsal carina; apical margin of clypeus with long setae, and weakly concave (fig. 9); epistomal suture shallow; length of malar space 0.7 times basal width of mandible; malar suture shallow; mandible robust, twisted apically, with both teeth robust and 2nd tooth somewhat shorter than 1st.

Mesosoma. — Length of mesosoma 1.5 times its height; antescutal depression present because of a scale-shaped elevation of the pronotum (fig. 1); mesopleuron smooth; episternal scrobe small (fig. 1); metapleuron punctulate, with a pit antero-dorsally; mesoscutal lobes convex, smooth, except for some setose punctures; scutellum smooth (but superficially punctulate); side of scutellum smooth; medially metanotum without carina, rather flat and smooth; surface of propodeum punctulate.

Wings. — Fore wing: r : 3-SR : SR1 = 10 : 23 : 32; SR1 straight; 1-CU1 : 2-CU1 = 2 : 13; 2-SR : 3-SR : r-m = 15 : 23 : 11. Hind wing: 1r-m long, slightly curved anteriorly (fig. 4); 2-SC + R very short, subquadrate; SR straight basally and shortly sclerotized; 1-M not distinctly widened (fig. 4); marginal cell narrowed apically.

Legs. — Hind coxa punctulate; tarsal claws slender and widened basally, with long setae (fig. 11), without lobe; length of femur, tibia, and basitarsus of hind leg 5.5, 12.3 and 7.0 times their width, respectively; length of hind spurs 0.3 and 0.4 times hind basitarsus.

Metasoma. — Length of 1st tergite 1.7 times its apical width, its surface virtually smooth; 2nd tergite laterally somewhat depressed, medially with a weakly differentiated triangular area, bordered by a shallow depression and with some rugae (fig. 14); 3rd tergite largely smooth, except for some rugae anteriorly, beside the small medial area slightly depressed; rest of metasoma rather compressed and smooth; 2nd and 3rd tergites with sharp lateral crease; length of ovipositor sheath 3.7 times fore wing, slender and tapering apically.

Colour. — Brownish-yellow; apices of mandibles, antenna (but scapus ventrally brownish), hind femur and tibia, 4th-6th tergites, apex of 3rd tergite, and ovipositor sheath, black; 3rd tergite with a pair of submedial faint brownish patches; wing membrane dark brown, except for basal third of fore wing, a band below the parastigma (on both wings), a subapical patch of the fore wing, and basal half of hind wing which are yellow (fig. 4); parastigma and base of pterostigma, yellow; rest of pterostigma dark brown.

Lectotype in Instytut zoologii PAN, Warszawa, ♀, from Togo, Bismarckburg (not examined). Designated by Shenefelt, 1978: 1719. Figured and described in the present paper from a paralectotype in Zoologisches Museum der Humboldt-Universität zu Berlin (DDR): "Kamerun, Barombi-Stat., Preuss S.", "31 157", "Type", "*Rhamnura capillicauda* n. sp., ♀, det. Dr. Enderlein". Additional paralectotypes (3 ♀, 1 ♂) are in the Berlin Museum.

LITERATURE

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