

SYSTEMATICS, MORPHOLOGY AND PHYSIOLOGY

A New Genus of Entedoninae (Hymenoptera: Eulophidae) from Brazil

ALEX GUMOVSKY¹ AND ZDENEK BOUČEK²

¹*Schmalhausen Institute of Zoology, 15 Bogdan Khmelnytsky St., 01601 Kiev MSP, Ukraine
e-mail: alex@cenos.freenet.kiev.ua; o_gumovsky@hotmail.com*

²*The Natural History Museum, Cromwell Road, London SW7 5BD, UK, e-mail: z.boucek@nhm.ac.uk*

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Um Novo Gênero de Entedoninae (Hymenoptera: Eulophidae) no Brasil

RESUMO - *Podkova*, um novo gênero, descrito do Brasil, para acomodar sua espécie-tipo, *P. hirsuta* sp. n. O gênero têm uma aparência peculiar, e suas principais características são um corpo pequeno e compacto densamente piloso na porção dorsal da cabeça e mesosoma, incluindo a parte média do propódeo; cabeça com a carena frontal em forma de ferradura, delimitando a cavidade facial larga com as antenas curtas; e a forma da carena occipital estendendo-se posteriormente para baixo, ao longo das margens posteriores dos olhos. Por essas características *Podkova* assemelha-se ao gênero *Alachua* Schauff & Bouček, mas diferindo deste por possuir uma forte carena frontal e o prepecto fortemente sobrepassado pela margem anterior do mesosterno. Possíveis afinidades com outros gêneros de Entedoninae são discutidas.

PALAVRAS-CHAVE: Taxonomia, descrição, região neotropical

ABSTRACT - A new genus, *Podkova*, is described from Brazil to accommodate its type-species *P. hirsuta*, sp. n. The genus has a peculiar appearance, the main features of which are the small compact body with coarsely pilose dorsal parts of the head and mesosoma, including median part of propodeum, head with sharp frontal carina of horse-shoe shape, delimiting broad facial cavity with rather short antennae, and a sharp occipital carina stretching posteriorly down along hind margins of eyes. By these features, *Podkova* resembles the genus *Alachua* Schauff and Bouček, but differs distinctly by having strong frontal carina on the head and the prepectus hardly overlapped by the anterior margin of mesosternum. Possible affinities to some other entedonine genera are discussed.

KEY WORDS: Taxonomy, description, neotropical region

The Neotropical eulophid wasps of the Entedoninae are being intensively studied, using extensive new collections (across South America) as well as older material accumulated in collections. The new genus described here comes from a major collection acquired in the 1940s by The Natural History Museum, London (BMNH) from Fritz Plaumann, living then in Santa Catarina State in South Brazil (see obituaries in *Sphecos*). The collection was partly sorted in the early 1970s by one of us (ZB), but most new taxa remained undescribed.

The present new genus was already once mentioned in the published literature (Schauff 1991: 36) in a discussion about the phylogenetic relationships between *Alachua* Schauff & Bouček and other entedonine genera. Schauff stated then that this genus... "also has setae on the propodeum and vertex"... and "...the long carina behind the eye"... but it..."does not, however, have the prepectus interrupted by the mesepisternum, which would indicate that it is not related to *Horismenus*".

This new genus is being described as a part of the research into the phylogeny and evolution of the subfamily

Entedoninae conducted by one of us (AG) (see also Gautier *et al.* 2000).

Abbreviations: POL, distance between posterior ocelli; OOL, ocell-ocular distance.

Podkova Gumovsky & Bouček, new genus

Type Species: *Podkova hirsuta* Gumovsky and Bouček, n. sp.

Female. Body small, but robust (Figs. 1C,D, 2A-F), compact; dorsum of head, dorsal and ventral sides of mesosoma beset with long curved hairs; irregular engraved-reticulate sculpture on body reduced to a trace on the anterior part of mesoscutum.

Head moderately transverse, eyes densely hairy. Frontovortex convex (Fig. 2B), smooth, anteriorly and posteriorly delimited by sharp carinae: anteriorly by dorsal margin of the frontal carina, posteriorly by the occipital carina (weak in middle) extended on either side downwards along eye margins, nearly up to outer margins of oral fossa. Face encircled by the sharp frontal carina forming a ridged arch of "horse-shoe" shape. Face with distinct

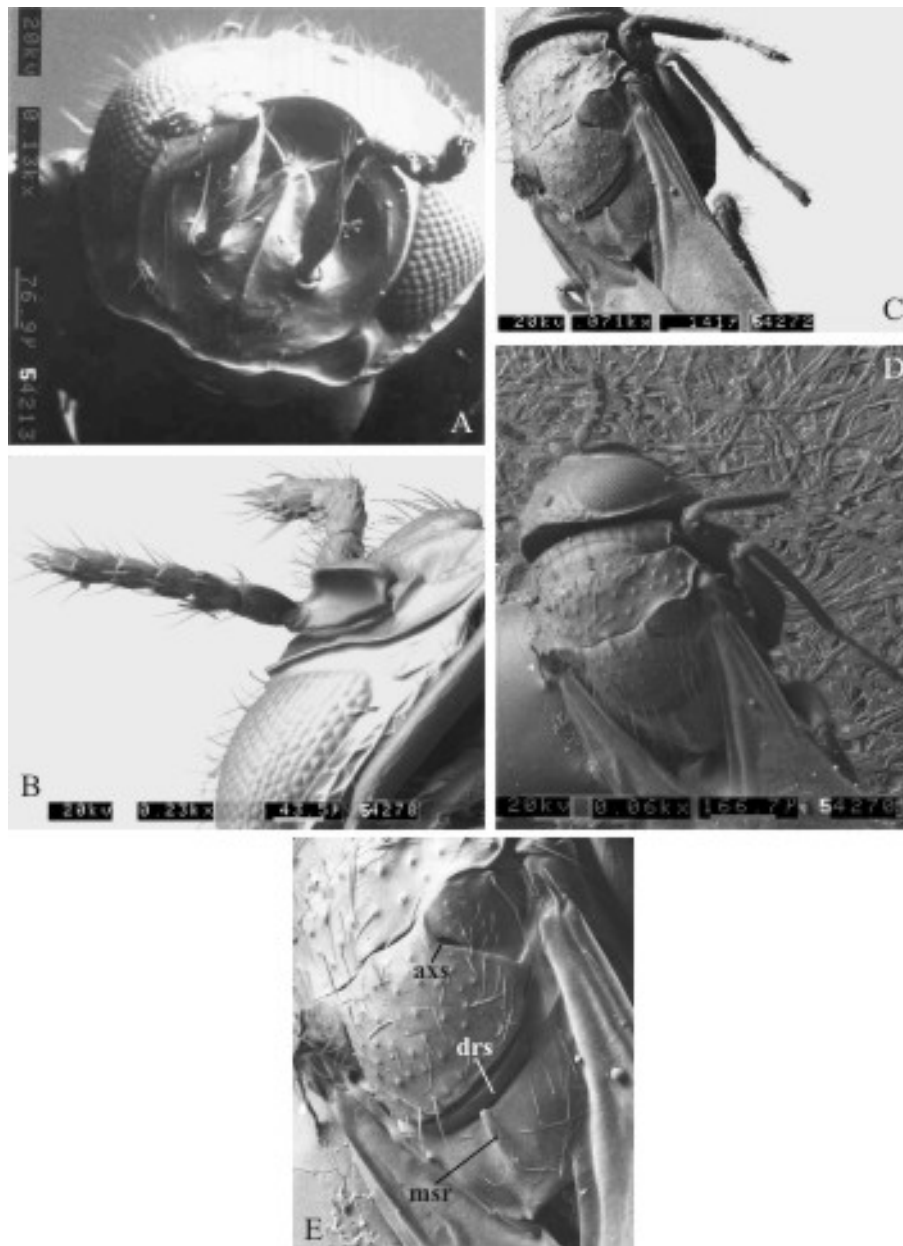


Figure 1. *P. hirsuta*, female: A, head, frontal view; B, head, part of face with antennae, ventral view; C, D, head and mesosoma, dorsal view; E, mesosoma: axs, sulcus on the axillar-scutellar suture; drs, dorsellum; msr, median propodeal stripe.

frontal sulcus, its branches separated by a short groove and diverging at about 120° . Scrobal grooves short, channeled, space between these grooves with longitudinal crest stretching up to frontal sulcus anteriorly, and about up to the level of lower eye margins posteriorly. Clypeus not delimited, its anterior margin slightly but broadly produced. Mandibles normally developed, wide, 2-toothed. Antenna (Figs. 1B, 2G, 3A) short, with widened scape which concave on outer side and impressed on inner side, pedicel longer than any of following three short funicular segments, anellus hardly visible, clava 2-segmented, ending with narrow spine.

Mesosoma. Pronotum with sharply carinate collar bearing a row of curving long hairs, its sides forming rectangular

carinate shoulders (Figs. 1C,D); lateral panel with neither plica nor carina. Mesoscutum and scutellum with curving hairs situated on tubercles; some thin hairs present also on propodeum but these are not on tubercles. Mesoscutum anteriorly with vague but engraved, transverse reticulation; notauli poorly traced by vague broad depressions; scuto-scutellar line merely grooved, axillar-scutellar margin distinctly sulcate, set off by a distinct fovea (Fig. 1E, axs); axillae slightly advanced; scutellum moderately convex, without any grooves. Dorsellum in shape of a narrow bar (Fig. 1E, drs). Propodeum smooth, with several setae at median area, antero-laterally without distinct flange; anterior half with a blunt raised median strip (Fig. 1E, msr), its end slightly protruding over anterior margin of propodeum; plicae

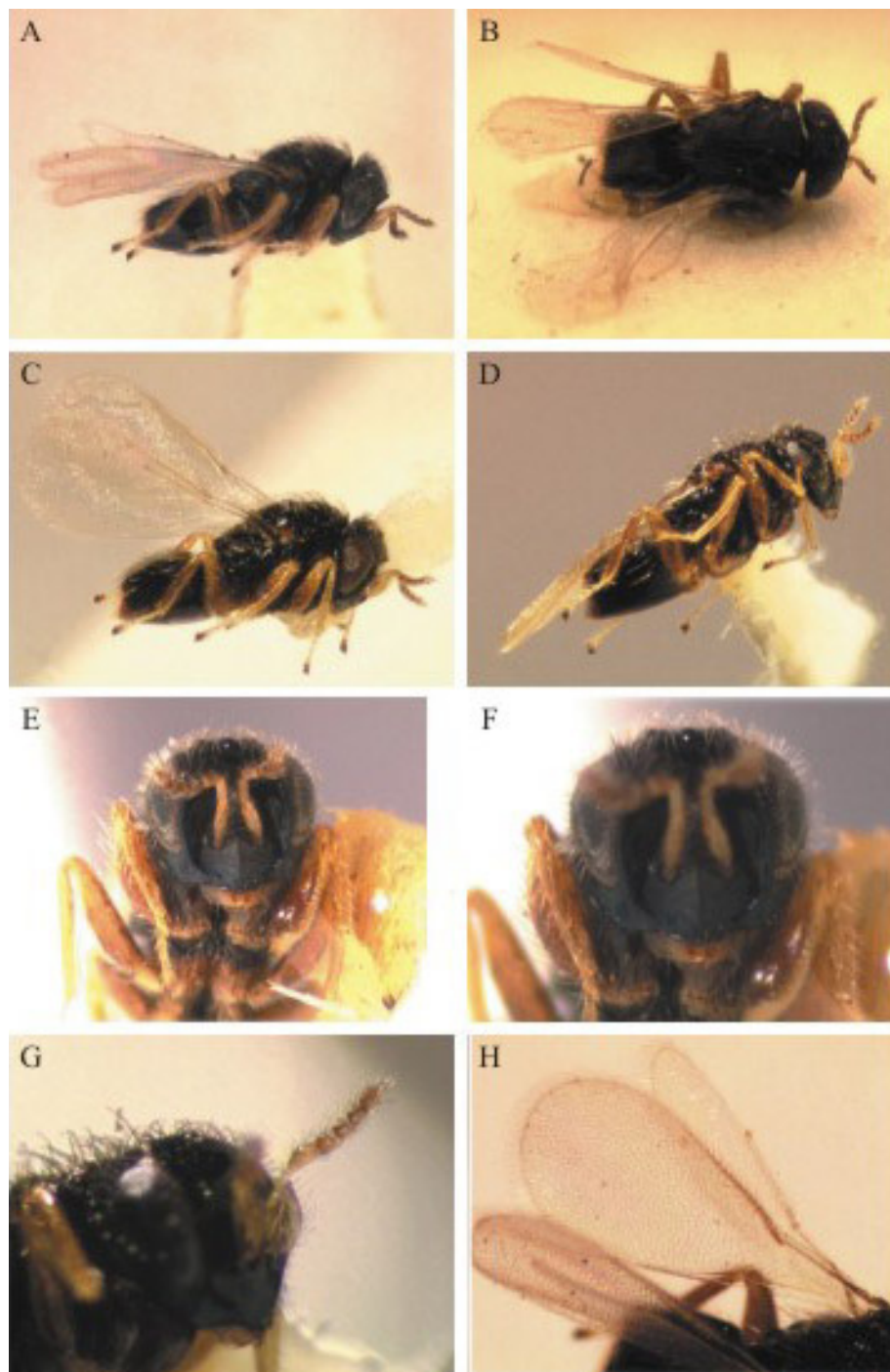


Figure 2. *P. hirsuta*, female: A-D, habitus: A, C, D, lateral view, B, dorsal view; E, F, head, frontal view; G, head, lateral view; H, fore wings.

reduced to small sublateral vestiges at posterior margin; area around tiny spiracle almost flat; callus with a partly double line of hairs. Anterior margin of mesosternum anteriorly on ventral side slightly produced between fore coxae, just slightly overlapping prepectus; metapleuron with median curved fovea, ventrally forming a tooth protruding downward.

Disc of fore wing (Fig. 2H) densely hairy, with relatively

long marginal fringe; subcosta of submarginal vein with two dorsal setae; marginal vein slightly longer than costal cell; postmarginal and stigmal veins rather short, nearly punctiform (Fig. 3B).

Legs slender but femora slightly widened, mid femur less strongly so.

Metasoma with robust petiole which slightly shorter than

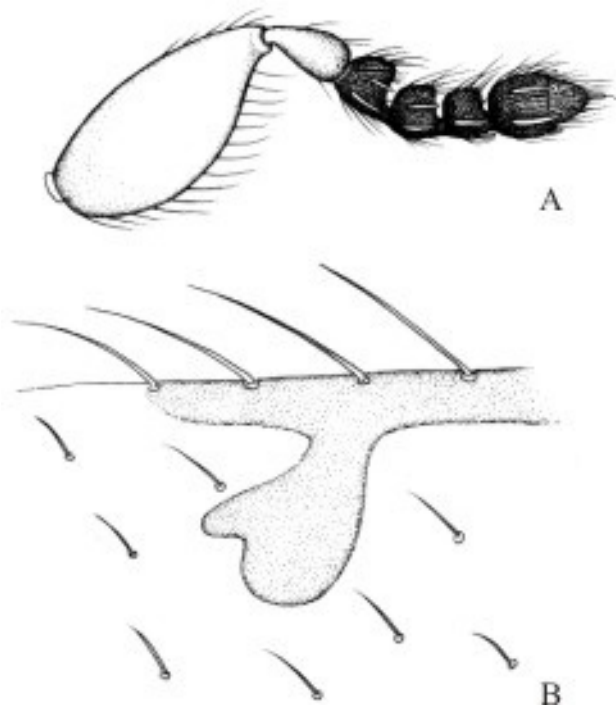


Figure 3. *P. hirsuta*, female: A, antenna; B, stigmal and postmarginal veins.

broad, with parallel sides, dorsally convex but uneven, without coarse sculpture. Gaster parallel-sided, dorso-laterally with rather dense pilosity but no coarse sculpture; first tergite covering half of gaster, its posterior margin straight; second and third tergites as broad as the first but much shorter, following tergites narrower, retracted; last sternite very large, produced beyond all tergites, broadly convex, broadly rounded at apex.

Male. Unknown.

***Podkova hirsuta*, n. sp.**

Female. Length of body 1.8 - 2.0 mm. Body black, antenna and legs mainly yellow, coxae at base and femora mostly darkened; wings without infumation. Body with reticulation only on anterior vertical area of pronotum behind sides of head and in the depressed part anteriorly on mesopleuron, just outside of prepectus.

Head in dorsal view almost twice as broad as long, with sharply ridged occipital margin and sharply protruding frontal part (the dorsal margin of the frontal carina, Figs. 1C, 2B). Ocelli small. POL 2.3-2.6 times as long as OOL, as long as distance from anterior ocellus from eye, almost 1.5 times as long as the distance between anterior ocellus and frontal carina. Lateral ocellus equidistant from eye and occipital margin.

Head in frontal view slightly wider than high. Eye (Figs. 1A, 2E, F) almost 1.6 times as high as broad, its pilosity of varying length. Eye height three times as long as malar space; malar sulcus absent. Oral fossa with oblique corners, about three times as long as malar space.

Antenna (Figs. 1B, 3A) inserted slightly above ventral margins of eyes. Scape broad, elliptic in lateral view, but narrowed more to apex, fully twice as long as broad, its meso-dorsal side convex and hairy, outer side smooth, anterior edge bearing about 10 long setae; pedicel 1.75 times as long as broad, half as long as scape, almost as long as two following segments combined; flagellum and pedicel combined about as long as width of frons at mid ocellus, about half as long as breadth of head; funicle three-segmented, its segments short, subquadrate, all of the same length, acute apically; clava 2-segmented, 1.75 times as long as broad, with distinct narrow spine (Figs. 1B, 2G, 3A).

Mesosoma 1.4 times as long as width of mesoscutum, its dorsum densely setose. Pronotum about 1/8 to 1/10 of the length of mesoscutum, its sides broader, lateral carinae converging caudad (Figs. 1C,D).

Mesoscutum nearly three times as broad as long. Axilla with 12-13 setae. Scutellum transversely oval, about 1.5 times as broad as long, regularly convex. Propodeum with small spiracles, each of them separated from posterior margin of dorsellum by the distance nearly as long as its major diameter. Lateral callus with long, partly double row of setae (14-15 in average).

Fore wing slightly more than twice as long as broad, its marginal fringe rather long, twice longer than marginal vein in its widest part. Costal cell bare, rather thin, 15-19 times as long as broad, basal and cubital hairrows represented by 2-3 setae, but not meeting (speculum only partly closed). Marginal vein about 1.2 times longer than costal cell, postmarginal vein as long as stigmal, the latter short, sessile; intercubital vein absent.

Spurs of mid and hind tibiae as long as breadth of their tibiae, foretibial spur rather short (about as long as half of breadth of its tibia).

Metasoma. Petiole somewhat wider than long, about 1.4 times as long as propodeum in middle, dorsally coriaceous, with lateral calli.

Gaster pentagonal, with subparallel sides, in dry specimens slightly longer than broad, rather sparsely pubescent. Ovipositor concealed but inside reaching along major part of gaster.

Male. Unknown.

Type Material. Holotype female: BRAZIL, Santa Catarina: Nova Teutonia, 14.ii.1945 (F. Plaumann). Plus 19 female paratypes, same locality, with data: 13.iii.1941, 20.iii.1941, 9.iv.1941, 13.v.1941, 21.x.1944, 22.ii.-26.ii.1945, 26.iii.1945 and 30.iii.1945, mostly in BMNH, but some in USNM Washington.

Etymology. The generic name is derived from the Czech "podkova", i.e. horse-shoe, referring to the shape of upper part of the carina encircling the face. Gender feminine. "*Hirsutus*, *hirsuta*" is Latin for coarsely hairy, referring to the rough pilosity on head and mesosoma.

Discussion. The sulcate axillar-scutellar line (Fig. 1E) may indicate the affinity of the new genus with *Horismenus* Walker and *Alachua* Schauff et Bouček. From both these genera *Podkova* differs in that the prepectus is not interrupted by

the mesosternum (interrupted by a mesosternal protrusion in *Horismenus* and *Alachua*, and to some extent in *Pediobius* Walker, Hansson, 2002). The similarity of *Podkova* with *Alachua* (known from *Camponotus* (Formicidae) nests in Florida (Schauff & Bouček, 1987)) is also supported by the coarsely pilose head and propodeum, the sulcate axillar-scutellar margin, the median propodeum with traced longitudinal strip ended anteriorly by the projecting tip (Fig. 1E, msr), and the genae with sharp longitudinal carina continued from occipital margin. The latter genus, however, differs greatly from *Podkova* as described above and in the absence of the horse-shoe-shaped frontal carina, the main apomorphy for the genus. Similar arched frontal carina is present in the Indo-Australian *Ambocybe* Ubaidillah & LaSalle (2000), but otherwise the latter genus shows no similarity to *Podkova*.

Podkova's biology is not yet known but the similarity in many morphological features with *Alachua*, seems to suggest a similar biology. Further studies will show whether the diagnostic characters of this enigmatic genus bear any signals of relationships or, otherwise, represent a result of convergency caused by peculiar life history.

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