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A new eulophid genus (Hymenoptera: Chalcidoidea)
with exodont mandibles

The exodont mandibles, i. e. mandibles with the teeth directed outwards instead of inwards, are developed in adults of different groups of Hymenoptera but are best known in the alysiine Braconidae. Evidently they cannot be used for normal biting and because they occur perhaps exclusively in species developing as parasites of Diptera, it is assumed that the out-turned teeth help to tear a hole in the hard puparium of the host to help the adult parasite out.

The new genus is the first case of exodont mandibles not only within Eulophidae but also within the whole superfamily Chalcidoidea (with exception of the little known, strange family Mymarommatidae), although beak-like or straight and subexodont mandibles occur e. g. in Dirhininae of the Chalcididae and there probably serving the same purpose. The two species described here come from Florida, USA, but several other species are known to me from Australia. This suggests a wide distribution in the warmer countries of the world and shows how little we still know about the tropical faunas.

Exodontomphale gen. n.

Type-species *Exodontomphale taborskyi* sp. n.

Head strongly transverse, with collapsing face. Vertex broader than vertical (long) diameter of eye, posteriorly rounded or bluntly edged in middle; temples rounded. Frontal grooves X-shaped, with furcal (upper) branches diverging at wide angle (Fig. I, 1), branching point much nearer to toruli than to ocellus. Eyes of medium size, at most only sparsely pubescent, facets uniform in size. Lower face with more or less arcuate cross-ridge below antennae, close to the strongly transverse clypeus; lower margin of clypeus not produced. Mouth extremely broad, with corners deeply emarginate, reducing malar space to a narrow strip (at most about breadth of

ocellus); mandibles unusually large, with outer surface excavated towards the large two apical teeth which are turned outwards; upper and lower edge of mandible with out-turned additional lobes (these tooth-like in certain aspects. Antennae inserted at or slightly below lower ocular line, toruli about as wide apart as each from eye. Scape in ♀ slender, not reaching vertex level; pedicel elongate but not unusually long; flagellum in both sexes slender, tapering to apex, each segment at base with loose whorl of long and thin bristles which are erect and very long in ♂, slightly less

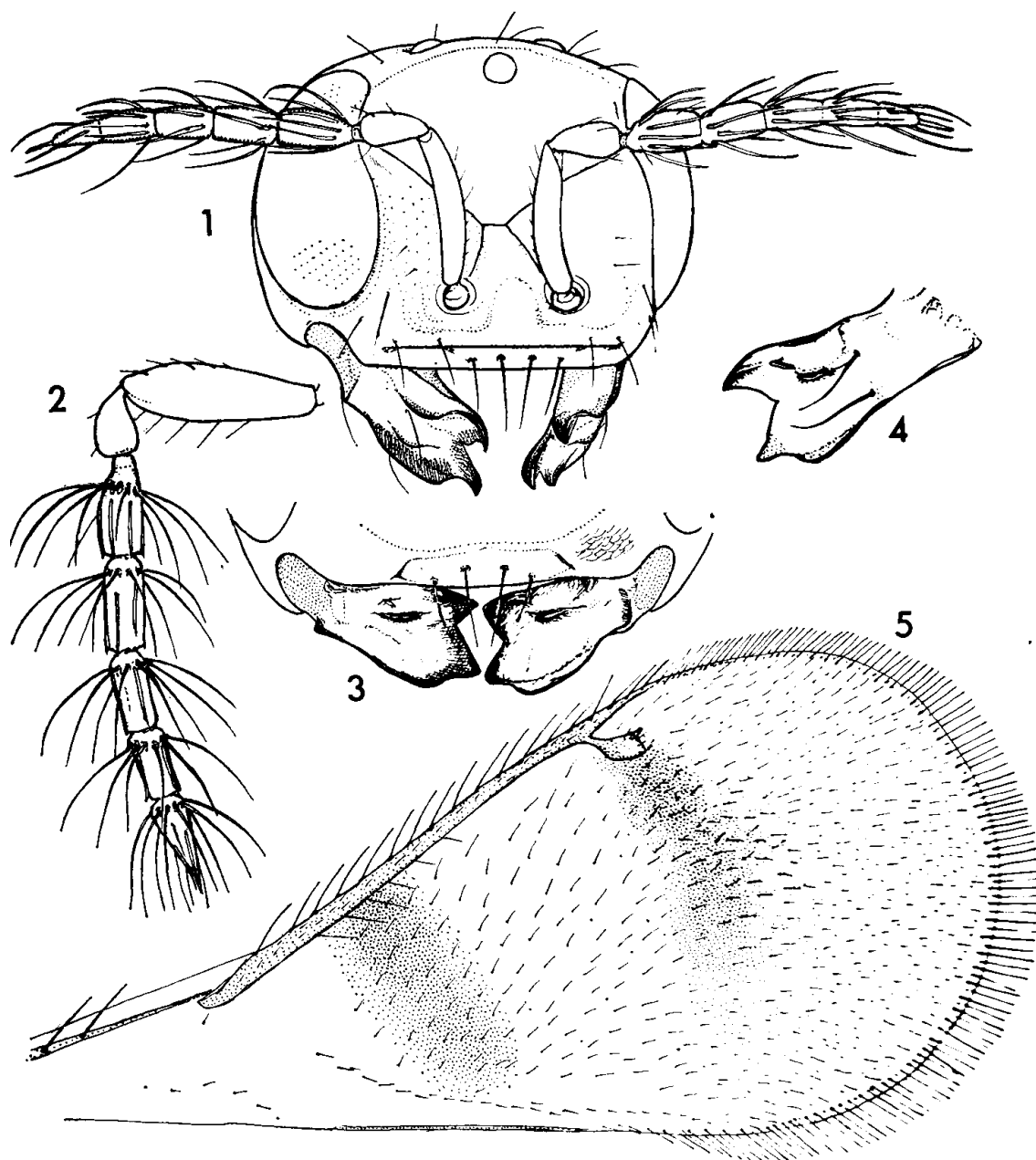


Fig. I - 1. *Exodontomphale* (gen. n.) *sublaevis* (sp. n.), head of ♀. - 2-5. *Exodontomphale taborski* (sp. n.); 2, antenna of ♂; 3, ♀, mouth region with mandibles; 4, outer aspect of left mandible; 5, forewing of ♀.

long and semierect in ♀ in which sparse longitudinal sensilla are, on funicular segments, partly transformed into outstanding trichoid sensilla (Fig. I, 2), stouter than normal bristles; two or three free funicular segments, first narrowed at base and more or less fused with indistinct anelli.

Pronotum strongly reduced and almost invisible from above. Mesoscutum large, mainly reticulate; notauli shortly linear anteriorly where directed toward each other, then abruptly turning caudad, this part in form of shallow triangularly expanded depression; mid lobe with two pairs of setae; anterior pair in front of transverse parts of notauli, posterior pair well removed from scutellum. Axillae slightly or hardly advanced, with at most one-third situated anterior to broad base of scutellum; latter deep and almost straight. Scutellum convex, without grooves, striate-reticulate; a pair of bristles in posterior half; apex rounded, without marginal groove, slightly jutting out over dorsellum; dorsellum not large, with vague foveolae in front of subcarinate hind margin. Propodeum sloping, rather short, without coarse sculpture or distinct carinae, shiny submedian areas convex, laterally extending beyond spiracles, posteriorly steep, down to a narrow supracoxal flange; at anterior margin of propodeum a groove deepening laterally, and turning abruptly caudad outside of spiracle; this groove turns shortly mesad at the blunt postero-lateral corner of propodeum; callus with two hairs; posterior margin of propodeum almost straight. Metapleuron with triangular posterior part distinctly visible dorsally; on mesepimeron distinct vertical dividing groove, upper part of posterior border outstanding and separated from metapleuron by distinct membranous gap. Prepectus large, triangular, flat and reticulate except for raised margins. Legs weak, slender, as in *Omphale*; also wings of same type as in *Omphale*, only in one of four species examined (non-American) with a vague hair-line from stigma.

Gastral petiole small, subconical, concealed. Gastral body oval to sub-lanceolate, dorsally depressed and collapsing; first tergite only slightly larger than others; all tergites smooth or nearly so, pilosity restricted to sides and dorsally to apex, sparse, thin, inconspicuous; cercus about as long as broad, its setae of medium length. Ovipositor hardly protruding.

This is an entedonine genus very close to *Omphale* Haliday but is easily recognisable by the special form of the lower face, with unusually large mouth armed with exodont mandibles.

Exodontomphale taborskyi sp. n.

♀ 1.4 - 1.9 mm. Dark bluish green, in places on upper face and dorsal parts of thorax and gaster with bronze to dark violet tint; scapes and legs beyond coxae generally testaceous, femora infusate as rest of antennae;

mandibles translucent brown with dark teeth. Forewing with two cross-bands (Fig. I, 5); one at proximal third of marginal vein, other appended at stigma; hindwing hyaline.

Head in dorsal view with moderate temples and moderately hollowed occiput. Surface distinctly engraved-reticulate, but reticulation obliterated on lower face. Clypeus about 5 times as broad as high, its sides tapering but reaching by about a torular diameter beyond outer side of toruli; lower margin straight. For mouth see fig. I, 3, lateral view of left mandible fig. I, 4. Relative measurements: head breadth about 45 (face collapsing), height about 33, frons width fully 24, POL 9, OOL 5, eye vertical diameter (height) 22, malar space 1.7, mouth width about 34, distance between toruli 8, scape length 15, pedicel plus flagellum combined 37; thorax length 48, mesoscutum breadth 32, gaster length 50, width 30. Antenna with scape narrow, on ventral edge with about five thin hairs; pedicel twice as long as broad; flagellum slightly tapering to apex, anellus closely united with first funicular segment which is longer than the second (this as long as pedicel), both combined equal in length to slender clava. Scutellum longer than broad as 20:17; with reticulation very dense and merging with striation. For forewing see fig. I, 5. Propodeum with some very faint longitudinal striae. Mesopleuron slightly convex, with pleural groove rather short and not deeper than the vertical epimeral groove. Gaster broadly lanceolate, about as broad and long as thorax.

♂ 1.3 - 1.7 mm. Head and thorax bright green to slightly brassy, with violet gloss in some deeper places, as in median depression on vertex-occiput. Otherwise as in ♀, but reticulation generally weaker, hence surface more shiny; forewing bands weak but still distinct; gaster very narrow. Main difference in antennae (Fig. I, 2): scape slightly enlarged; flagellar segments nearly of equal length, each at its base with a whorl of erect bristles.

Biology not known but the species certainly is a parasite of small Diptera. Collected on the edge of a palmetto thicket.

Holotype ♀ (and paratypes, 4 ♀ 3 ♂), USA, Florida: nr. Palmetto, 29. v. 1981 (Bouček); holotype in BMNH London, paratypes also in USNM Washington.

Named in honour of Dr. K. Táborský, my friend and colleague, on whose family's property the type material was collected.

Exodontomphale sublaevis sp. n.

♀ 1.5 mm. Mainly dark green, with following parts pale yellow: small triangle below each antenna, scape, trochanters, tibiae, tarsi, and venation. Wings hyaline.

Reticulation everywhere very faint, hence surface shiny. Head in dorsal view with temples posteriorly swollen, in frontal view see fig. I, 1.

Upper clypeal margin in form of a straight groove along most of the broad mouth, hence clypeus as transverse band about 8 times as broad as high. Mandibles: both dorsal and ventral edge produced before apex into horizontal lobes looking tooth-like in vertical view. Malar space only slightly narrower than clypeal band.

Thorax similar to *taborskyi* but anteriorly more rounded; notaular depressions barely depressed; posterior pair of scutal bristles and scutellar bristles very long and conspicuous on the nearly smooth surface. Propodeum smooth. Mesepimeral dividing groove linear, slightly curved, much narrower than short pleural groove. Forewing slightly narrower than in fig. I, 5, stigmal vein branching at angle of about 80° and slightly longer than postmarginal vein; hairs on underside of marginal vein about as in *taborskyi*.

Gaster oval-cordiform, about as long as but distinctly broader than thorax.

♂ not known.

Holotype ♀, USA, Florida: St. John's Bluff nr. Jacksonville, 30. viii. 1976 (Bouček); in BMNH, London.

E. sublaevis differs from the type-species mainly in the much shinier body, hyaline wings and the unusually narrow transverse clypeus (cf. Figs. I, 1 and 5).

SUMMARY

Two new species of a new genus of Eulophidae from Florida are described. It is the first known case of a genus with exodont mandibles in the superfamily Chalcidoidea.

RIASSUNTO

Sono descritte due nuove specie di un nuovo genere di Eulophidae per la Florida. È il primo caso noto di un genere con mandibole esodontate nella superfamiglia Chalcidoidea.