

A New Genus of Exodont Ichneutinae (Hymenoptera: Braconidae)

W.R.M. Mason
Biosystematics Research Institute
Agriculture Canada
Ottawa, Canada K1A 0C6

Abstract

Two new species of Muesebeckiini, Ichneutinae, are described as a new genus characterised by exodont mandibles and by alternate pairs of abdominal spiracles missing. Most specimens have been found in northern Florida and a few in eastern Texas.

Introduction

In recent years parasitic Hymenoptera have been collected intensively in northern Florida, mostly around Gainesville. I was surprised to find among these specimens yet another genus of braconids with species possessing exodont mandibles. The new species belong to the tribe Muesebeckiini of the Ichneutinae (Mason 1969). In addition to the exodont mandibles they have a unique abdominal modification: only metasomal terga 2, 4 and 6 bear spiracles. As far as I know the first metasomal spiracle is absent only in *Fornicia* among braconids, the fifth and following are lacking in females of *Meteoridea*, the sixth and seventh are absent in Cheloninae and a missing seventh spiracle characterises a number of groups, including Microgastrinae and its near relatives as well as Muesebeckiini.

Anaprixia, new genus

Type of the genus: *A. alachua*, new species

This genus is close to *Oligoneurus* and *Paroligoneurus* Muesebeck in most details but has conspicuous exodont mandibles (Fig. 1). *Anaprixia* resembles *Paroligoneurus* in having a smooth propodeum, a smooth obovate metasomal tergite I and a subtriangular tergite II, as well as in its lack of notauli and sternauli. The unique feature of the genus is its lack of abdominal spiracles on alter-

nate segments (Figs. 4, 5, 8). Metasomal terga 1, 3, 5 are without spiracles while terga 2, 4 and 6 have spiracles. Unfortunately this character is difficult to observe. All Muesebeckiini lack the spiracle on metasomal tergite 7. This is a tribal apomorphic reductional character, compared to its state in other Ichneutinae. The other unusual feature of this genus is that it has the toruli at about midway between the lateral ocelli and the center of the clypeal groove (Figs. 5, 7) but not near the top of the face, as is usual for Muesebeckiini. Another odd feature, is the presence, in males only, of a very large hemispherical cavity occupying the entire central third of the seventh metasomal tergite (Fig. 3). The inner curvature of this cavity appears to bear some minute hairs and markings that may be glandular openings. Males of some other Muesebeckiini (*Oligoneurus*, *Pulchaukia*) have a similar, but much smaller, cavity on the seventh tergite but have, in addition, a double median cavity on the sixth metasomal tergite.

Description: Mouth opening extremely wide, at least 0.8 as wide as head (Fig. 3); Mandibles opening to about 180°, but not touching one another when closed, with the inner side convex, outer side concave and toothed, the normal two teeth supplemented by two small lobes formed on the upper and lower lateral mandibular carinae (Fig. 3). Toruli about midway between median ocellus and base of clypeus. Labial palpi with 4 articles, the third very short but about as wide as others; maxillary palpi with 5 articles, the basal two apparently fused. Occipital and hypostomal carinae both absent; head slightly wider than thorax (Figs. 6, 7).

Notauli absent; prescutellar groove mostly effaced, but an arched groove remaining; meso-

pleura with no epicnemial (=prepectal auct.) carina nor lateral groove; propodeum smooth, ecarinate.

Metasoma 1/2 to 3/4 as wide as long (Figs. 5, 8), with smooth obovate first tergite, subtriangular second tergite. Hypopygium longer than high in lateral aspect, not folded medially (Figs. 5, 8). Ovipositor sheaths protruding only half as far as length of hind basitarsus, hairs crowded near tips. Male with metasomal tergum 7 centrally collapsed and concave in dried specimens, making a large, medial, hemispherical cavity (Fig. 3) that fills almost all the space between terga 6 and 8. Abdominal spiracles arranged in a pattern unique for Hymenoptera (Fig. 4), appearing on propodeum and metasomal terga 2, 4 and 6 but not developed on metasomal terga 1, 3, 5 and 7. Spiracles of metasoma 2 on a distinct laterotergite.

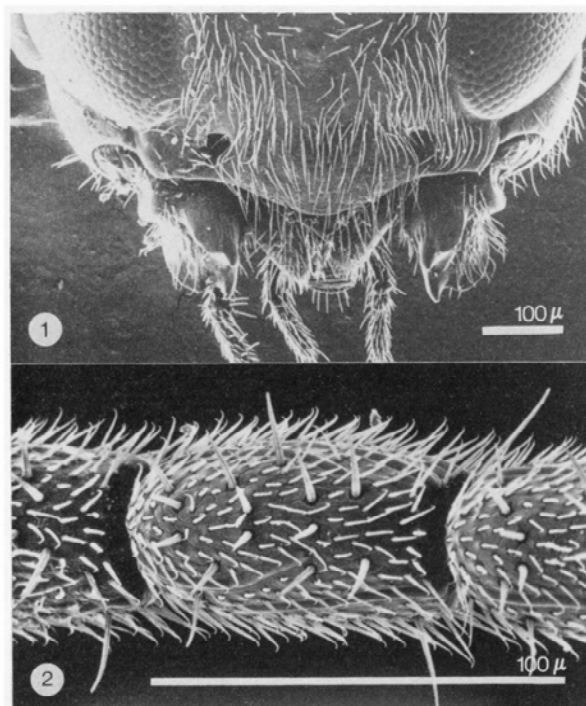
Anaprixia alachua,

new species
figures 1-6

Holotype: female, length 2.4mm., fore wing length 2.3mm.; antenna ca. 2.0mm.

Head transverse and large, in dorsal aspect about twice as wide as its median length and slightly wider than mesonotum; width of head, across eyes, greater, by about 6 percent than width across genae; length of eye (measured in dorsal aspect through widest part of eye) 0.5 times length of head (Fig. 6); basal groove of clypeus distinct but shallow (Fig. 1); ocelli small, in a broad (100°) triangle (Fig. 6); lateral ocelli separated from one another by almost twice their own diameter and from the eye by 3 times their own diameter; greater diameter of lateral ocellus about 1.3 times that of median ocellus. Flagellomeres 15; second 3/4 as long as first, antepenultimate (13th) about 1/3 as long as first and twice as long as wide; flagellomeres 5-15 with narrow basicone patches ventrally (Fig. 2). Scape slightly curved and broadest at middle, inner side weakly concave, outer side strongly convex, about 2.5 times as long as its greatest width. Toruli separated from one another by about twice their diameter but separated from eyes by only 1/3 their diameter.

Prescutellar scrobe reduced to a short, curved, shallow groove only half as long as width of scutellum. Most of thorax, head, and apical abdominal terga with fine, weak, coriaceous sculpture and sparse hairs in small inconspicuous sockets. Thorax



Figs. 1-2. *Anaprixia alachua*; 1, Head, frontal view, showing face and everted mandible teeth; 2, Middle flagellomere, ventral view, showing longitudinal placodes laterally and ventral basicone sensillar area.

in lateral view about 1.4 times as long as wide (Fig. 5).

First tergite of metasoma obovate, about twice as long as its greatest width; without spiracles; central part weakly swollen. Tergite two subtriangular, about twice as wide as long, sides straight; suture between terga 2 and 3 almost obliterated; third tergum 3/4 as long as tergum 2. Mid apical part of tergite 1 with longitudinal aciculation, remainder of basal terga polished, glabrous; laterotergites 1 and 2, tergum 3 and following terga and sternites hairy. Hypopygium apically obtuse, upper margin strongly convex and meeting lower margin at 60° to 70° in lateral aspect, medially without any sharp crease (Fig. 5); median length of hypopygium about that of abdomen.

In fore wing tubular part of vein r2 short and stub-like. Tarsal claws simple.

Color black to piceous, the following parts yellowish: basal few articles of antenna, mouthparts, stigma, membranous parts of metasoma 1

and 2, legs except for middle and hind coxae, apex of hind tibia and basal half of all femora, which are dark brown.

Variation (in females): flagellomeres 14 or, usually, 15, body length 1.9 to 2.4 mm., wing length 2.0 to 2.2 mm. Males with 14 or 15 flagellomeres, body length 1.8 to 2.1 mm., wing length 2.0 to 2.2 mm., antennal length about 2.1 mm.; tergum 7 of metasoma with central half or more collapsed into a hemispherical cavity extending from tergite 6 to 8, and appearing about as deep as its width; flagellomeres of male lacking ventral basicone patches. In other features males very similar to females.

Types: Holotype, female, **FLA.**, Alachua Co., Gainesville, 15-22 Apr. 1987, in malaise trap operated by W. R. M. Mason & David Wahl, hardwood forest on grounds of American Entomological Institute (AEI). Paratypes; same data, 1 male, 7 females; same data except 1-4 Apr. 1986 (MASON), J. LaSalle, 3 females; same data except 10-15 Apr. 1986 (AEI), M. Sharkey, 2 females; same data except 15 Apr. 1986 (CNCI), R. Wharton, 1 female (TAMU); same data except Rock Creek, nr. Gainesville, 1-8 Apr. 1983, V. K. Gupta, 2 males (AEI); same data except 7-25 Mar, 1982, grounds of Dept. of Plant Industry, L. Stange, 2 females (BPIF); same data except 18-26 Apr. 1987, J. Wiley, 1 female (AEI); same data except 20-23 April, 1987 D. B. Wahl, 4 males, 3 females (AEI); Clay Co. Gold Head Branch State Park, G. Heinrich, 1 male (CNCI); **TEX.**, Brazos Co., Lick Creek Park, 1-22 May 1987 (TAMU). The notable facts of distribution are that all specimens but one have been found in two counties of northern Florida and that all were taken in malaise traps. Such traps frequently have been operated in other areas of the Austroriparian Faunal Zone, but apparently without taking *Anaprixia*. Perhaps other specimens have been sorted to miscellaneous Alysiniinae because of their exodont mandibles.

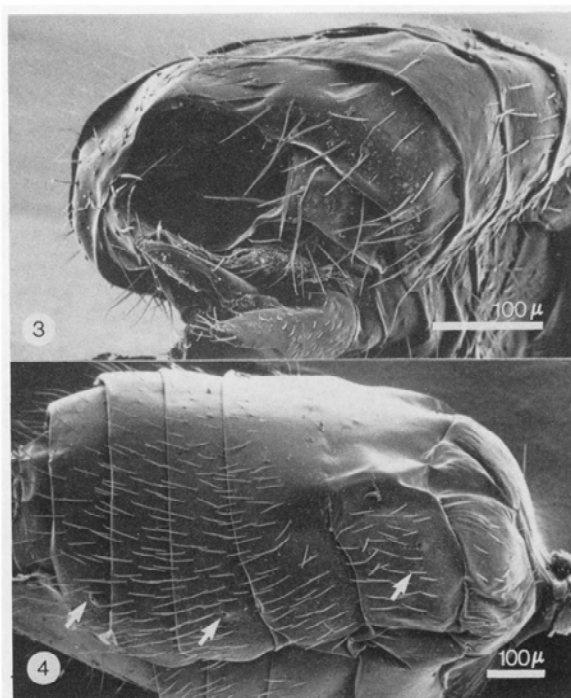
Anaprixia masneri,

new species

figures 7, 8

Holotype: female, length 2mm., fore wing length 1.8mm., antenna ca. 1.8mm.

Head in dorsal aspect cuboid but strongly emarginate posteriorly (Fig. 7), about 1.5 times as

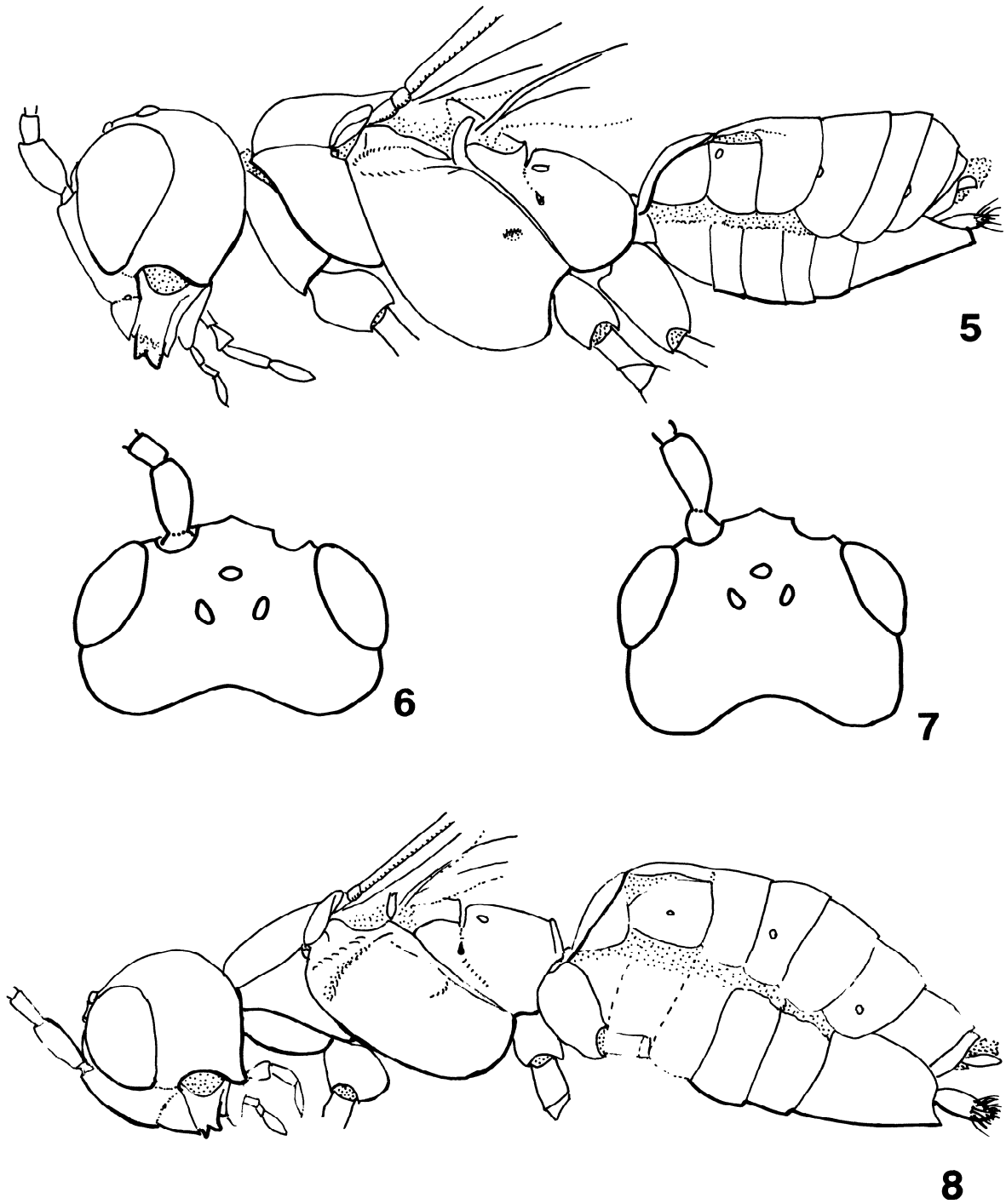


Figs. 3-4. *Anaprixia alachua*; 3, Male abdomen, posterior view, showing large median cavity in metasomal tergite 7; 4, Female abdomen, lateral view, arrows indicate metasomal spiracles 2, 4, 6.

wide as median length but no wider than mesonotum; length of eye (measured in dorsal aspect through widest part of eye) 0.7 times length of head (Fig. 7). Ocelli in a broad triangle; lateral ocelli separated from one another by about twice their own diameter and from the eye by about 3 times their own diameter (Fig. 7); lateral ocelli about as wide as median ocellus. Flagellomeres 12; second about 0.8 times as long as first, antepenultimate (10th) about half as long as first and 3 times as long as wide. Scape and toruli similar to those of *A. alachua*.

Prescutellar scrobe reduced to a very shallow but strongly curved percurrent groove. Sculpture similar to that of *alachua*

First tergite oval, central area strongly swollen and ellipsoidal, about twice as long as its greatest width, without spiracles. Tergite 2 subtriangular, about twice as wide as long, sides concave; third tergum 2/3 as long as tergum 2; tergum 3, laterotergites 1 and 2 and following segments hairy.



Figs. 5-6. *Anaprixia alachua*; 5 Female in lateral aspect; 6, Head in dorsal aspect; **Figs. 7,8.** *Anaprixia masneri*; 7, Head in dorsal aspect; 8, Female in lateral aspect.

Colour black to piceous, the following parts yellowish: scape, pedicel, mouthparts, membranes of terga 1 and 2, fore leg, fore coxa, all trochanters.

Types: Holotype, female, **TEX.**, Brazos Co., Lick Creek Park, 17-30 Apr. 1987, [Malaise Trap], J. Heraty & J. Wooley. (CNCI). Paratypes: **FLA.** Marion Co., Alexander Springs in Ocala N. F., 18 Sept. 1987, 2 males, screen sweeping by L Masner in hardwood forest (CNCI).

Relationships

This genus shares the characteristic synapomorphies of Muesebeckiini, namely 1, junction of fore wing veins 1-M and R basad of fork of R and RS, a condition traditionally called "sessile discoidal cell"; 2, strong curvature at upper end of vein 1-m in fore wing; 3, unique reduction of cross veins of the fore wing (Mason 1957); 4, absence of spiracles on the 7th metasomal tergum.

Among the genera placed in the tribe (Mason 1969), *Anaprixia* shares several synapomorphies with *Pulchaukia*, namely: 1, metasomal tergite 1 smooth and lacking dorsal or dorso-lateral carinae; 2, metasomal tergite 1 obovate in outline; 3, propodeum smooth and ecarinate; 4, metasomal tergum 7 of males with a median hemispherical cavity on the outer surface, although the excavation is much larger (consuming the entire central third of the tergite) in the new genus.

A similar, though much smaller, seventh tergal excavation in males is also found in three more muesebeckiine genera - *Oligoneurus*, *Lispixys* and *Ciliosa*. Males of the last four genera also have a bilobate median excavation on the 6th tergite, a structure that I interpret as a further synapomorphy, but one not shared with *Anaprixia*. As mentioned in the introduction, *Anaprixia* has two very unusual autapomorphies, 1, exodont mandibles; 2, missing spiracles on alternate terga. Unfortunately a more thorough analysis of the tribe is hampered by a paucity of specimens of both sexes of *Pulchaukia* from the Oriental region and a confusing array of specimens of *Oligoneurus* and *Paroligoneurus* (and possibly other genera, not yet described) from the Neotropical region, which holds by far the richest fauna of the tribe. There may also be some undescribed Neotropical genera.

References

- Mason, W.R.M.** 1957. A new genus and species of Microgastrinae (Hymenoptera: Braconidae). *Can. Ent.* 89:355-357.
- Mason, W.R.M.** 1969. Muesebeckiini, A New Tribe of Braconidae (Hymenoptera). *Proc. Ent. Soc. Wash.* 71:263-278.

