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Taxonomic remarks on Australian Dryinidae with description of new species*

(Insecta, Hymenoptera, Chrysidoidea)

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In this paper the following new species of Dryinidae are described: *Anteon maurum*, *Anteon zborowskii*, and *Dryinus zborowskii*, from Australia; *Anteon vitiense*, from the Fiji Islands. Besides the following new synonymy is established: *Anteon fijianum* Olmi, 1984 (p. 569) = *Anteon yasumatsui* Olmi, 1984 (p. 424). *A. yasumatsui* has the priority.

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Introduction

The Dryinidae (Hymenoptera, Chrysidoidea) are parasitoids of Homoptera Auchenorrhyncha (Olmi 1984, 1994). In the last years the systematics of the Dryinidae was revised mainly by Olmi (1984, 1989, 1993, 1994, 1995). According to the old papers of Perkins (1905, 1906a, 1906b, 1907, 1912) and the more recent contributions of Olmi (1984, 1986, 1987a, 1987b, 1987c, 1992a, 1992b, 1993), in the Australian zoogeographic region 197 species of Dryinidae belonging to 18 genera and 7 subfamilies are known. Recently, further new species were recognized in some collections. The aim of this paper is to describe these new taxa.

Material and methods

The material examined in this paper is deposited in the following collections:

- B Bishop Museum, Honolulu, Hawaii, U.S.A
- CB Australian National Insect Collection (ANIC), CSIRO, Canberra, Australia
- LA Natural History Museum of Los Angeles County, Los Angeles, California, U.S.A
- OL M. Olmi's collections, c/o Dipartimento di Protezione delle Piante, Università della Tuscia, Viterbo, Italia

The descriptions follow the terminology used by Olmi (1984) and revised after Gauld & Bolton (1988) and Olmi (1994). The measurements reported are relative, except for the total length (head to abdominal tip, without the antennae), which is expressed in millimeters.

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In the descriptions POL is the “distance between the inner edges of the two lateral ocelli”; OL is the “distance between the inner edges of a lateral ocellus and the median ocellus”; OOL is the “distance from the outer edge of a lateral ocellus to the compound eye”; OPL is the “distance from the posterior edge of a lateral ocellus to the occipital carina”; TL is the “length of the temples”.

The study techniques are those proposed by Olmi (1984).

The types of all the species of *Anteon* Jurine, 1807 and *Dryinus* Latreille, 1804 known in the Australian region were examined.

Anteon maurum, spec. nov.

Fig. 1A

Types. Holotype: ♀, Australia, South Australia, Brookfield Cons. Park, 34°21'S 139°29'E, 24.-26.XI.1992, I. Naumann & J. Cardale coll. (CB).

Description

♀ holotype. Fully winged; length 2.12 mm; head black, with mandibles testaceous; antennae testaceous; thorax and propodeum black; gaster brown; legs testaceous, with hind coxae and hind trochanters brown; antennae distally thickened; antennal segments in the following proportions: 8.5-5-5.5-4-3-3.5-3.5-4-5; antennal segment 9 hardly longer than broad (4:3); head shiny, smooth, punctate, without sculpture among the punctures; frontal line absent; occipital carina complete; POL: 5; OL: 3; OOL: 4; OPL: 3.5; TL: 4.5; pronotum hairy, rugose, with posterior surface smooth and shiny; posterior surface of pronotum shorter than scutum (5:14); pronotal tubercles reaching the tegulae; scutum, scutellum and metanotum shiny, smooth, punctate, without sculpture among the punctures; notauli incomplete, reaching approximately 0.3 length of scutum; propodeum reticulate rugose, with a strong transversal keel between dorsal and posterior surface; posterior surface with two complete longitudinal keels; median area shiny, smooth, punctate, without sculpture among the punctures; lateral areas rugose; forewing hyaline, without dark transversal bands; distal part of stigmal vein shorter than proximal part (4:6); fore tarsal segments in the following proportions: 5-2-3-8.5-15; enlarged claw (Fig. 1A) with a proximal prominence bearing a long bristle; segment 5 of front tarsus (Fig. 1A) with two rows of approximately 29 long lamellae without interruption as far as the distal apex; tibial spurs 1, 2.

♂. Unknown.

Remarks. *A. maurum* is closely related to *A. completum* Olmi, 1989; in *A. maurum*, however, the median area of the propodeum is shiny and smooth (dull and rugose in *A. completum*), the antennae are more thickened (more slender in *A. completum*), the lamellae of the 5th fore tarsal segment are longer (shorter in *A. completum* (Fig. 27C in Olmi 1989)), the 4th fore tarsal segment is much longer than the 1st (in *A. completum* the fore tarsal segment 4 is approximately as long as 1).

For the above morphological characteristics *A. maurum* can be inserted in the key to the females of the Australian *Anteon* published by Olmi (1989) at couplet 16, as follows:

- 16. Posterior surface of pronotum approximately 0.5 as long as scutum; notauli short, reaching approximately 0.3-0.5 length of scutum 16'.
 - Posterior surface of pronotum as long as, or almost as long as scutum; notauli more than 0.5 as long as scutum 17.
- 16'. Antennae more thickened, with segment 9 less than twice as long as broad; median area of the propodeum shiny and smooth; lamellae of segment 5 of front tarsus very long (Fig. 1A); segment 4 of front tarsus much longer than segment 1 65. *maurum*, spec. nov.
 - Antennae less thickened, with segment 9 more than twice as long as broad; median area of the propodeum dull and rugose; lamellae of segment 5 of front tarsus short (Fig. 27C in Olmi 1989); segment 4 of front tarsus approximately as long as segment 1 53. *completum* Olmi, 1989
- 17. Body totally testaceous 50. *niuese* Olmi, 1989
 - Body almost totally black 46. *walesense* Olmi, 1987

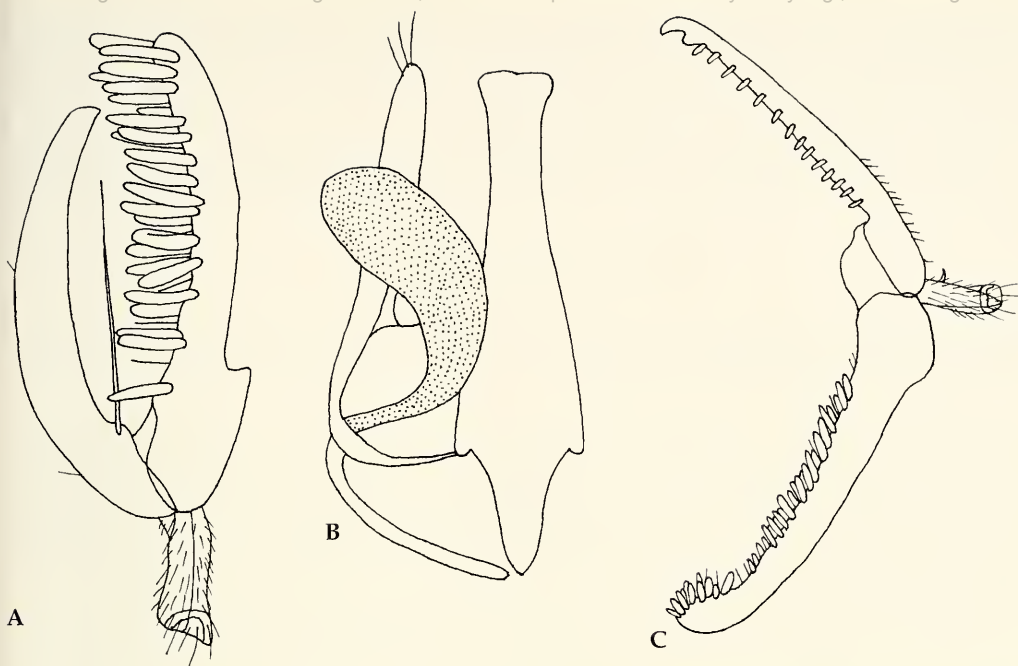


Fig. 1. A. Chela of *Anteon maurum*, spec. nov. (holotype). B. ♂ genital armature of holotype of *Anteon zborowskii*, spec. nov. (left half). C. Chela of *Dryinus zborowskii*, spec. nov. (holotype).

Anteon zborowskii, spec. nov.

Fig. 1B

Types. Holotype: ♂, Australia, Queensland, 13 km E by S Weipa, 12°40'S 143°00'E, Malaise trap, 15.XI.-16.XII.1993, P. Zborowski coll. (CB).

Description

♂ holotype. Fully winged; length 1.87 mm; head black, with mandibles testaceous; antennae testaceous; thorax and propodeum black; gaster brown; legs testaceous, with hind coxae brown; antennae not thickened distally; antennal segments in the following proportions: 9-4-4-5-5-5.5-5-5-7; head shiny, punctate, without sculpture among the punctures; anterior half of frons very strongly punctate, almost reticulate rugose; frontal line absent; occipital carina complete; POL: 5.5; OL: 3; OOL: 3; OPL: 2; TL: 2; scutum, scutellum and metanotum shiny, smooth, finely punctate, without sculpture among the punctures; notauli incomplete, reaching approximately 0.3 length of scutum; propodeum dull, with a strong transversal keel between dorsal and posterior surface; posterior surface without longitudinal keels, with lateral areas dull and rugose and with central area shiny, smooth and without sculpture; forewing hyaline, without dark transversal bands; distal part of stigmal vein much shorter than proximal part (2:7); genital armature (Fig. 1B) with a long dorsal process; parameres without an inner pointed process; tibial spurs 1, 1, 2.

♀. Unknown.

Remarks. The species is named in honour of the collector of the holotype, P. Zborowski. *Anteon zborowskii* is closely related to *A. tasmanianum* Olmi, 1984; in *A. zborowskii*, however, the genital armature shows a long dorsal process (Fig. 1B), with distal apex curved; this process is not present in *A. tasmanianum* (Fig. 379 in Olmi 1984).

In the key to the males of the Australian *Anteon* proposed by Olmi (1989) *A. zborowskii* can be inserted at couplet 19, as follows:

19. Posterior surface of propodeum with lateral areas dull and reticulate rugose; central area smooth and shiny 19'.
 – Posterior surface of propodeum fully dull and reticulate rugose 20.
 19'. Genital armature with a long dorsal process (Fig. 1B) 66. *zborowskii*, spec. nov.
 – Genital armature without a long dorsal process (Fig. 379 in Olmi 1984)
 36. *tasmanianum* Olmi, 1984

Anteon yasumatsui Olmi, 1984

Anteon yasumatsui Olmi, 1984: 424.

Anteon fijianum Olmi, 1984: 569 (new synonymy).

nec *Anteon fijianum* Olmi: Olmi, 1989: 228 (male).

Anteon fijianum Olmi, 1984 was described on the basis of ♀ specimens only. Apparently this was the only species of *Anteon* living in the Fiji Islands (Olmi 1990). After the original description of *A. fijianum* I examined a male specimen of *Anteon* from 15 km N Queen's Hwy (Fiji Islands, Viti Levu Island, Namosi Rd.). This ♂ specimen was considered the opposite sex of the ♀♀ of *A. fijianum*, mainly because no other species of *Anteon* Jurine was considered living in the Fiji Islands (♀♀ and ♂♂ are so different in the genus *Anteon* that often it is impossible to recognize the opposite sexes). The description of that ♂ was given by Olmi (1989: p. 228).

At the same time the Oriental species *Anteon yasumatsui* Olmi, 1984 was also found in the Australian region (Caroline Islands, Yap Island, Kolonia) (Olmi 1989: p. 216). This record allowed for the insertion of both the above species in the key to the ♂♂ of the Australian *Anteon* (Olmi 1989: pp. 231-233). The two ♂♂ apparently were distinctly identifiable, mainly because the head of the ♂ of *A. yasumatsui* was granulated and that of the ♂ of *A. fijianum* (the ♂ described above) was punctate and without sculpture among the punctures. The sculpture of the propodeum of the two ♂♂ was even different.

The separation between the above two species was apparently demonstrated.

Recently, however, I examined in LA a small series of ♀ and ♂ specimens from Suva (Viti Levu I., Fiji Is.). The ♂ specimens distinctly show a fully granulated head, as in the head of the ♀♀. Therefore, I considered these ♂ specimens the true opposite sex of the ♀♀ of *A. fijianum*. A comparison between the ♀♀ and ♂♂ of *A. yasumatsui* and *A. fijianum* demonstrated that the two species were synonyms. *A. yasumatsui* has priority over *A. fijianum*.

Presently *A. yasumatsui* Olmi (= *fijianum* Olmi) is known from the following countries: India, Thailand, Malaya, Indonesia, Taiwan, Caroline Islands, Fiji Islands, Australia.

The ♂ specimen described by Olmi (1989: p. 228) as the ♂ of *A. fijianum* belongs, therefore, to another new species, described below.

Anteon vitiense, spec. nov.

Anteon fijianum Olmi: Olmi, 1989: 228 (♂).

Types. Holotype: ♂, Fiji Islands, Viti Levu Island, Namosi Rd., 15 km N of Queen's Hwy, on Cyathea, 3.7.XI.1981, W. C. Gagne coll. (B).

Description

♂. Fully winged; length 1.37 mm; black; mandibles testaceous; antennae brown, with segment 1 testaceous; legs brown, with fore tibiae and fore trochanters testaceous; antennae not distally thickened; antennal segments in the following proportions: 6-3.5-3.5-4.5-4.5-4.5-5-5-7; head shiny, smooth, finely punctate, without sculpture among the punctures; frontal line complete; occipital carina complete; POL: 4.5; OL: 2.5; OOL: 4; OPL: 2; TL: 3; scutum, scutellum and metanotum shiny, smooth, finely punctate, without sculpture among the punctures; notauli incomplete, reaching approximately 0.5 length of scutum; propodeum reticulate rugose, with a strong transversal keel between dorsal and

posterior surface; posterior surface without longitudinal keels, sculptured by areolae very large; forewing hyaline, without dark transversal bands; distal part of stigmal vein much shorter than proximal part (3:5); parameres (Fig. 29 F in Olmi 1989) without a distal inner pointed process; tibial spurs 1, 1, 2.

Remarks. *A. vitiense* can be easily inserted in the key to the ♂♂ of the Australian *Anteon* proposed by Olmi (1989, p. 233), because 26. *fijianum* Olmi can be replaced by 67. *vitiense*, spec. nov.

Dryinus zborowskii, spec. nov.

Fig. 1C

Types. Holotype: ♀, Australia, Queensland, 12 km SSE of Heathlands, 11°51'S 142°38'E, closed forest, FIT 2, ANIC 1252, 25.VII.-21.VIII.1992, P. Zborowski & J. Cardale coll. (CB). – Paratypes: 1♀, same label data, closed forest, FIT 2, ANIC 1250, 7.VI.-25.VII.1992, P. Zborowski & E. Nielsen coll. (OL).

Description

♀. Fully winged; length 5.18-5.62 mm (holotype: 5.62 mm); head black, with mandibles, part of clypeus, genae and a short narrow stripe along the orbits near the antennal sockets testaceous; antennae brown, with segments 1-2 testaceous; thorax and propodeum black, with sides of pronotum testaceous; gaster brown; legs testaceous, with part of coxae, trochanters, femora and tibiae brown; antennae distally thickened; antennal segments in the following proportions: 12-6-42-21-18-11-9-8-8-10; head flat, shiny, punctate, without sculpture among the punctures; numerous areolae are visible along the orbits, where also a few irregular keels are visible; in the anterior half of the frons a few transversal keels are visible; frontal line complete; in the paratype even the vertex is slightly rugose; occipital carina complete; occiput smooth, shiny, without sculpture; temples absent; POL: 4; OL: 2; OOL: 8; OPL: 1; pronotum humped, crossed by a strong posterior transversal impression; posterior collar short; a slight anterior transversal impression even visible; pronotum shiny, almost fully smooth and without sculpture; a few slight striae visible on the sides around the disc; pronotal tubercles not reaching the tegulae; scutum shiny, totally sculptured by numerous parallel longitudinal keels; notauli distinct and complete, posteriorly separated; scutellum and metanotum dull, granulated and rugose; propodeum dull, reticulate rugose; posterior surface of propodeum without longitudinal keels; forewing with three dark transversal bands; distal part of stigmal vein longer than proximal part (21:7); marginal cell open; fore tarsal segments in the following proportions: 22-4-9-18-30; enlarged claw (Fig. 1C) with a subapical tooth and a row of 14 lamellae; segment 5 of front tarsus (Fig. 1C) with two rows of 25 lamellae; distal apex with a group of approximately 12 lamellae; tibial spurs 1, 1, 2.

♂. Unknown

Remarks. The species is named in honour of one of the collectors of the typical series, P. Zborowski. For the presence of a subapical tooth in the enlarged claw (Fig. 1C) and the visible notauli, *D. zborowskii* belongs to the *Dryinus pallidus* (Perkins) group (sensu Olmi 1993); this group includes species belonging to the old genera *Dryinus* Latreille, 1804 and *Richardsidryinus* Moczar, 1965). *D. zborowskii* is very closely related to *D. wasbaueri* Olmi, 1993.

In the key to the ♀♀ of the Australian *Dryinus* proposed by Olmi (1989, with modifications by Olmi 1993), *D. zborowskii* can be inserted at couplet 27, near *D. wasbaueri* Olmi, 1993 as follows:

- 26. Pronotum smooth, shiny, almost hairless, without sculpture or with a few keels around the disc 27.
- Pronotum not smooth and shiny, but sculptured by numerous keels around the disc 28.
- 27. Head shiny, without sculpture, or punctate and without sculpture among the punctures 27'.
- Head at least partly dull and rugose, with a few irregular keels 27''.
- 27'. Head with OPL as long as POL; posterior collar of pronotum yellow 20. *glaber* Olmi, 1984
- Head with OPL shorter than POL (posterior ocelli very near the occipital carina); posterior collar of pronotum black 21. *australianus* Olmi, 1984

- 27". Scutum with median area granulated and not sculptured by numerous parallel and longitudinal keels; head totally dull and reticulate rugose, with a few irregular keels on the frons 34. *wasbaueri* Olmi, 1993
- Scutum totally sculptured by numerous parallel longitudinal keels; head shiny, with frons almost totally punctate and without sculpture among the punctures; head rugose only around the orbits, where a few irregular keels are visible; a few transversal keels are visible even in the face, near the clypeus 35. *zborowskii*, spec. nov.

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