

***Anteon pinetellum*, a new Palaearctic dryinid (Hymenoptera: Dryinidae)**

J. DE ROND

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Abstract: *Anteon pinetellum* spec. nov. is described after specimens from The Netherlands and the Mediterranean. In recent literature the species was treated as *Anteon ephippiger* (Dalman).

Beukenhof 96, 8212 EB Lelystad, The Netherlands.

Introduction

Dryinids are a family of relatively small parasitoid aculeate Hymenoptera. The extremely variable appearance of many species has inspired several authors in the past to describe many new taxa. Kieffer (1914) reported no less than 77 European species belonging to what is now considered the genus *Anteon*. After Hellén (1919, 1953), Berland (1928) and Richards (1939) had synonymized a substantial part of Kieffers list, Olmi (1984) reduced the number of European species to 11. The simplified determination keys and the many synonyms that remained unfortunately have raised a considerable barrier for recognition and verification of new species.

When the first Dutch specimen of the species discussed here was found, identification seemed to be simple; the keys for females by Olmi (1984) led directly to *Anteon ephippiger* (Dalman). However, Olmi's illustrations of the chelae, the conspicuous claspers of the female's forelegs, did not correspond with the illustrations by Richards (1939). When eventually in 1993 the holotype of *Gonatopus* (=*Anteon*) *ephippiger* (coll. NHRM) was examined, it became clear that the specimens which Olmi (1984, 1994) had used for his illustrations, did not belong to this species but appeared to be new to science.

Meanwhile nine more females and a male have been identified and a probable host has been found. As none of the descriptions of the

various species synonymised with *A. ephippiger* fits the appearance of the specimens, a new species is described here.

***Anteon pinetellum* spec. nov.**

(figs 1-6)

Type material

Holotype: ♀, Leuvenum (Gelderland), The Netherlands, swept from *Pinus sylvestris* L., 17.viii.1996, J. de Rond.

Paratypes: 1♀, Leuvenum (Gelderland), The Netherlands, swept from *Pinus sylvestris* L., 19.viii.1997, J. de Rond; 1♀, Nunspeet (Gelderland), The Netherlands, 19.viii.1987, malaisetrap material of R.T. Simon Thomas; 1♀, Bussum (Noord-Holland), The Netherlands, 29.vii - 5.viii.1990, malaisetrap material of J. G. de Rond; 1♀, Gigondas, Beauregard (Dpt. Vaucluse), France, 21.ix.1989, M. J. Gijswilt, coll. RMNH; 1♀, Vizzavona (Corsica), France, 1100-1200 m. near *Pinus nigra* var. *maritima* (Ait.) Melville, 6.viii.1971, A.C. & W.N. Ellis, coll. ZMAN; 1♀, Los Monegros (Piña de Ebro, Zaragoza), Spain, 20.viii.1993, light trap, Javier Blasco Zumeta; 1♂, 2♀, Benicasim (Castellon), Spain, 22-24.vi.1974, Z. Boucek, coll. BMNH and coll. M. Olmi. The holotype is deposited in ZMAN, the other Dutch specimens are in the author's collection.

Description

Female: Size 3.1- 3.4 mm. General appearance slender.

Head: The minimal width of the frons (fig. 1) is nearly equal to the largest width of the occipital carina. Eyes almost parallel and constricted along the borders of the frons. In lateral observation (fig. 2), the eyes at mid-

length are about two times wider than the nearest width of the occiput. Ocellar triangle almost equilateral. Relative distances between the lateral ocelli (POL): between anterior and lateral ocellus (OL): between lateral ocelli and occipital carina (OPL): between eye and occipital carina (TL) and between eye and lateral ocellus (OOL) 10 : 9 : 10 : 10 : 12. The relative diameter of the anterior ocellus is 4. The relative lengths of the antennal segments are 19 : 11 : 12 : 12 : 12 : 11 : 11 : 11 : 10 : 15. The width/length ratio of the scapus and the last segment is 1 : 3, that of the fourth segment can vary from 1 : 3 to 1 : 4 and of the penultimate segment from 1 : 2 to 1 : 2.5.

Pronotum narrow; somewhat compressed with a unique marking that is quite reliable as far as can be judged: in the centre of the anterior border, right behind the transparent rim, a deep and narrow incision is present, well marked with a U-shaped dark line. Notauli thin; reaching 0.5 length of the mesonotum and not much thicker when reaching the pronotum. Propodeum almost square with a strong transverse ridge between the dorsal and the posterior surface, consisting of two straight lines which meet in an obtuse angle. The posterior plane is divided into three fields by two thin vertical lines (fig. 4). The centre of the medial field is smooth with only traces of sculpture.

Wings: Distal section of the radial vein relatively long. The difference in length between the proximal and the distal section varies between 1.2 : 1 and 2.4 : 1.

Legs: The relative lengths of the tarsal segments (including only the basal part of the fifth segment) of the forelegs are 26 : 12 : 12 : 26 : 24. Extended part of the fifth segment (fig. 6) completely straight, with two small lobes at the apex, reaching the centre of the second segment. A row of lamellae is ending in each lobe; about 20-23 lamellae in the smallest (inner) lobe, and 4-5 lamellae in the largest (outer) lobe. The longest lamella of the short row is nearly 3 times the size of the adjacent ones of the long row. A polished longitudinal gutter enables the enlarged claw to take position in between both rows of lamel-

lae. The curved distal part of this claw is extremely thin with a rounded apex.

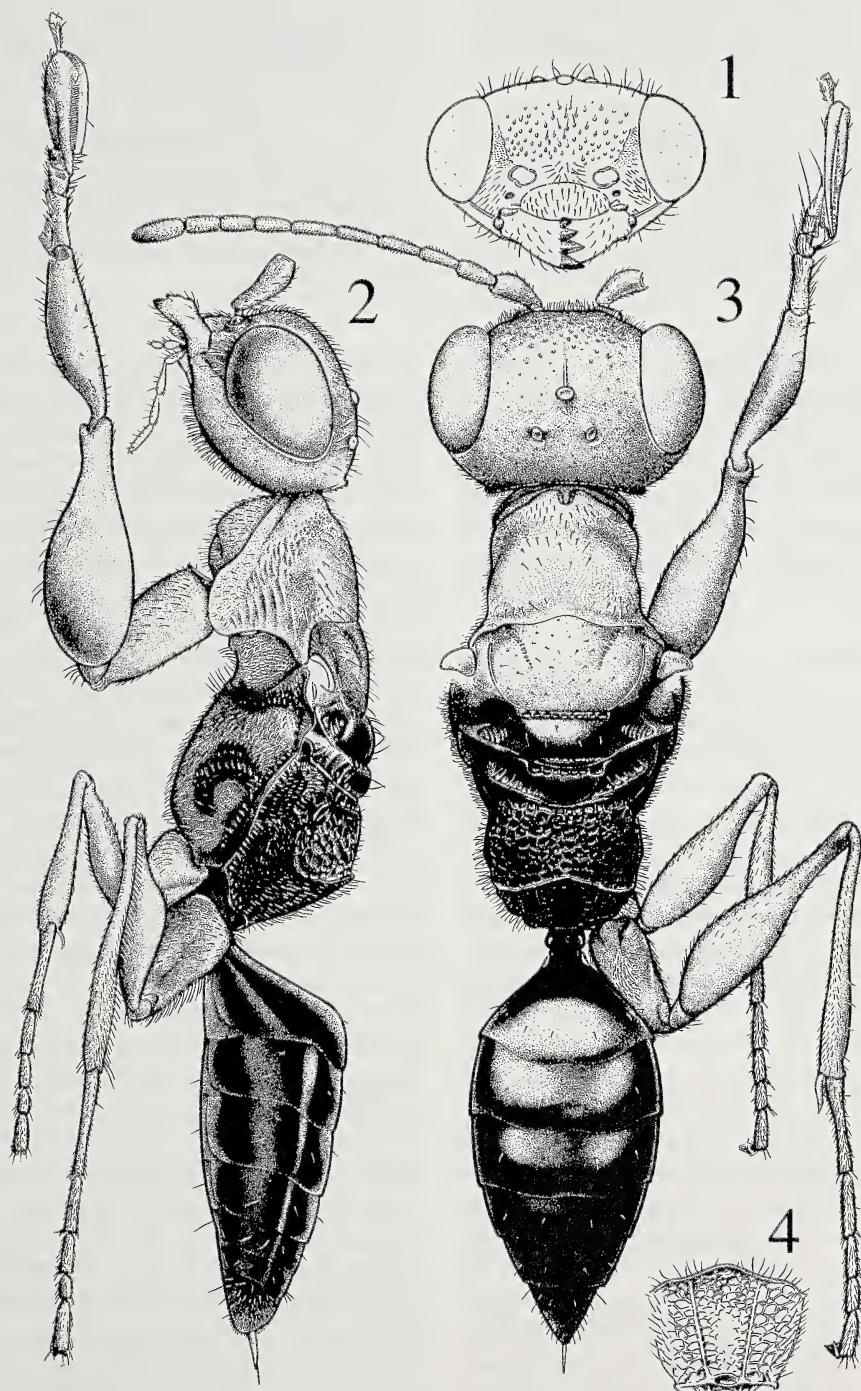
Sculpture: Head, pronotum and mesonotum with a weak and shiny granulation which shows a tendency to transform into subtle wrinkles around the ocellar triangle. Frons densely punctured, with the punctures somewhat larger than the interstices; in posterior direction decreasing rapidly in size and density. At the dorsal surface of the head the punctures are obsolete and sparse. In front of the anterior ocellus a short keel is present, nearly of the same length as the ocellus.

The body is covered with relatively long hairs, but the eyes are provided with very short and scattered hairs. The average length of the hairs near the lower side of the occipital carina is up to four times the length of the hairs on the eyes.

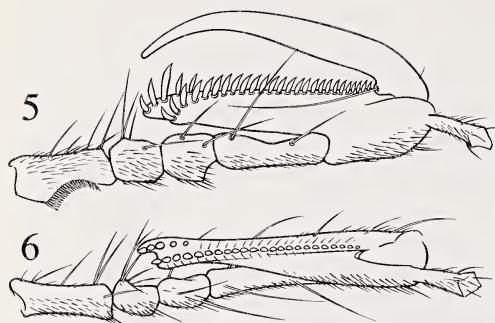
Colour: The contrast in colour between the posterior and anterior half of the body is significant. Head, pronotum and mesonotum are coloured with bright orange, and even the eyes of a fresh female are tinged reddish. The scutellum is normally black, sometimes with a red spot. The mesopleura are red with a black spot. The metanotum and propodeum are usually black. The antennae, mandibles and legs, including the coxae, are yellow. The veins and stigma of the forewing transparent without colour or with a light shade of yellow. The apex of the antennae, of the hind femur, and of the radial vein are often infuscate. In all French and Dutch specimens the abdomen is completely black.

The females of the Spanish Mediterranean coast are slightly smaller than the other specimens, and have a more extended red colouration. In these animals the scutellum, metanotum, lateral faces of the propodeum and the anterior sternites of the abdomen are completely reddish.

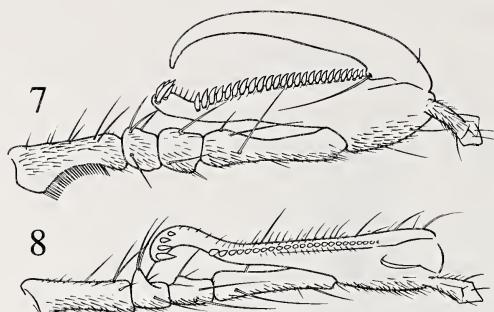
Male: The broad face and obtuse-angled propodeal ridge are similar to those in the female. Head and propodeum polished and covered with extremely fine and close punctures. On the frons these punctures are separated not more than half the diameter of the anterior



Figs 1-4. *Anteon pinetellum* spec. nov., habitus female; 1, frontal aspect of the head; 2, lateral aspect of the body; 3, dorsal aspect of the body; 4, posterior aspect of the propodeum.



Figs 5-6. *Anteon pinetellum*, left chela; 5, lateral aspect; 6, dorso-frontal aspect.



Figs 7-8. *Anteon ephippiger*, left chela; 7, lateral aspect; 8, dorso-frontal aspect.

ocellus. Antennal segments are of average size. Pronotum short with the incision less well visible than in the female. The body is black with exception of the bright ivory-white mandibles (without infuscate bases), the yellow-ochre antennae and the dark margined yellow stigmata. Gonoforceps (parameres) end in a firm hook and carry a large type dorsal process at the base.

Considering the fact that the Spanish female differs from the other females, it is possible that northern male specimens will not correspond with some of the features recorded here.

Etymology

The name *pinetellum* refers to the female's preference for pine forests. The subspecies *olmii* is named after Professor Massimo Olmi, the first person who published illustrations of the species.

Discussion

In spite of its superficial resemblance with *Anteon ephippiger*, *A. pinetellum* is completely different from all Palaearctic species-complexes within the subfamily. Considering the deep pronotal incision, it is a mystery that the species has not been recognised earlier. Just a shallow impression is present in all other species. The straightened shape of the chelae with two apical lobes is not only unique in *Anteon*, but even in European Dryinidae. All species of Anteoninae, Gonatopodinae and Dryininae in

Northwest Europe display a more or less "S"-shaped fifth tarsal segment (fig. 8), with the distal third bent around the enlarged tarsal claw. One or more short rows of large lamellae are situated at the end of this curl, and are never completely parallel to the basal row. In *A. pinetellum*, the curl is apparently contracted, and lies side by side to the basal row.

Traditionally the chelae are depicted from the lateral side only, obviously as a result of usual preparing-techniques like microscopic slides. The use of normal reflecting light, enabling free manipulation, revealed the absence of a curved apex and the two lobes of *A. pinetellum* in dorso-frontal observation.

Olmi (1984) mentioned 7 junior synonyms of *A. ephippiger*. The type specimen of *Gonatopus collaris* Dalman was personally examined and is obviously just a variety of *A. ephippiger*. Some of the synonyms have recently been assigned to other species: *Anteon flaviscapus* Jansson is now considered to be a synonym of *Anteon exiguum* (Haupt) by Olmi (1994), and *Dryinus facialis* Thomson appears to be a good species (Burn & De Rond, in press). The original descriptions of the remaining synonyms (*Anteon rubrifrons* Kieffer, *Chelogynus rufovariegatus* Berland, and *Anteon pyonganensis* Móczár) and recent studies of type specimens (*Anteon albidiocollis* Kieffer in Olmi, 1976) offer enough clues to assume that *Anteon pinetellum* is not involved.

Anteon pinetellum occupies a unique position within the Anteoninae: the deep incision of the pronotum and the lobed apex of the che-

iae might justify classification as a separate genus. The male genitalia on the other hand are typical for *Anteon*. The length-ratio of the proximal and distal part of the radial vein place the species in between *Anteon* and *Lonchodryinus*, but the angular connection of both parts is more typical for *Anteon*. There is at least reason to consider the status of a special subgenus. The species is best added to existing determination-keys for *Anteon* females (for instance Olmi, 1994) above the first couplet.

Biology

All Dutch specimens of *Anteon pinetellum* were collected in dry *Querco roboris-Betuleum* vegetation, mostly dominated by *Pinus sylvestris* L. Usually the pines were surrounded by *Calluna vulgaris* (L.) Hull, *Molinia caerulea* (L.) Moench, *Corynephorus canescens* (L.) Beauv. and some patches of *Erica tetralix* L. The Dutch females identical to the type of *A. ephippiger* on the other hand, have been found mainly in *Salicion albae*: wetlands with reeds, nettles and various types of willows. Dragging the vegetation of the location where the holotype of *A. pinetellum* was found, led to the conclusion that *Grypotes puncticollis* (Herrich-Schäffer) (Cicadellidae: Deltocephalinae), should be regarded as the most probable host. It is a common species in Dutch diluvial regions and lives exclusively on *Pinus sylvestris* L. Several dozens of males and females of this planthopper could be swept from the trees during every visit of the location in August. In the Mediterranean, *G. puncticollis* is also found on *Pinus nigra* Arnold (Ossiannilsson, 1983). In Southern Europe and North Africa a second species, *Grypotes staurus* Ivanoff, is living on pine as well (Ribaut, 1952; Nast, 1972). According to the information given by Javier Blasco Zumeta, the specimen of *A. pinetellum* collected in Los Monegros (Spain) can only be related to *Pinus halepensis* Miller with *G. staurus* as the probable host. No other host-parasite records of Dryinidae are known for the genus *Grypotes* (Guglielmino & Olmi, 1997). The

related genus *Opsius* Fieber, of which the most common European species lives on tamarisk, may also be a host for *A. pinetellum*.

In 1996 some specimens of *G. puncticollis* were offered to the holotype of *A. pinetellum* in an exhauster, and almost immediately a light-coloured female was seized by the wasp. The hopper was stung between the front and middle pair of coxae for about half a minute. Desperate need for nourishment of my 6-months old daughter, and the noises this was attended with, forced me to leave before the wasp could complete its work. One year later, at the same location and under the same climatic conditions, a second female was captured after two hours of sweeping the branches of the pines. It was the only Dryinid found in these trees. Among the many *G. puncticollis* collected this time, appeared to be two adult males with a dryinid larva attached behind the head. Unfortunately, the specimens died within the next week.

Geographic variability

The species is remarkably uniform throughout Europe. The aberrant size and colour of the females from Benicasim are most likely the result of a different host and habitat; the specimens were taken two months earlier than the other females, and it is unlikely that suitable specimens of *Grypotes puncticollis* are present in June. Moreover, the location is adjacent to the Mediterranean coast, and the possibility that its host lives on *Pinus pinea* L. is not unthinkable. I prefer to treat the Spanish male and female as the subspecies *olmii*. It may also be possible that instead of a subspecies, a first of two annual generations is involved, as the female from Los Monegros which was taken in August, is more similar to the French and Dutch specimens.

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Abbreviations

NHRM: Naturhistoriska Riksmuseet, Stockholm, Sweden.
RMNH: Museum of Natural History NNM, Leiden, The Netherlands. ZMAN: Institute of Systematics and Population Biology, University of Amsterdam, The Netherlands. BMNH: British Museum (Natural History), London, UK.

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