

Pseudorhaconotus enervatus, a new genus and species from Spain (Hymenoptera: Braconidae: Doryctinae)

C. van Achterberg & M.R. Shaw

Achterberg, C. van & M.R. Shaw. *Pseudorhaconotus enervatus*, a new genus and species from Spain (Hymenoptera: Braconidae: Doryctinae).

Zool. Med. Leiden 84 (1), 15.x.2010: 1-5, figs 1-10. — ISSN 0024-0672.

C. van Achterberg, Afdeling Terrestrische Zoologie, NCB Naturalis, Postbus 9517, 2300 RA Leiden, The Netherlands (Cees.vanAchterberg@ncbnaturalis.nl).

M.R. Shaw, Honorary Research Associate, National Museums of Scotland, Chambers Street, Edinburgh EH1 1JF, Scotland, UK (markshaw@xenarcha.com).

Key words: Europe; distribution; new genus; new species; Palaearctic.

Pseudorhaconotus enervatus gen. nov. & spec. nov. (Hymenoptera: Braconidae: Doryctinae) from Spain is described and illustrated. The new genus is similar to the genus *Rhaconotus* Ruthe, 1854, but differs by the lack of vein r-m of the fore wing and by the absence of dorsople on the first metasomal tergite.

Introduction

The second author received from Antoni Ribes an aberrant specimen from SE Spain belonging to a new genus of the tribe Rhaconotini Fahringer, 1928 (Braconidae: Doryctinae). The Rhaconotini form a distinct tribe in the subfamily Doryctinae Foerster, 1862 (Zaldivar-Riverón et al., 2008) and are characterised by the closed first subdiscal cell of the fore wing, and the fourth and fifth metasomal tergites with a sharp lateral crease and dorsally more or less sculptured. The most striking feature of the new genus is the absence of vein r-m of the fore wing.

The specimen was collected from a home-made flight interception net, about 2 m wide and 1.2 m high, placed between two olive trees. The net is bent at the top and along the margins, to allow aggregation of the insects. The specimens are periodically collected from the net by hand. The habitat is an irrigated olive field, with some *Citrus* fields and *Populus* trees nearby.

Although the biology of this new taxon is unknown, members of the subfamily Doryctinae in general are idiobiont ectoparasitoids of coleopterous and other larvae living in wood and other more or less rigid plant tissue (Shaw & Huddleston, 1991). The recorded hosts of Rhaconotini belong, as far as known, (see Yu et al., 2007) to the Coleoptera (families Bruchidae, Buprestidae, Cerambycidae, Curculionidae, Proterrhinidae, Bostrychidae) and Lepidoptera (families Brachodidae, Crambidae, Gelechiidae, Phycitidae, Pyralidae and Pyraustidae), but many host identities have been presumed from poorly controlled substrate rearings. Hosts in relatively slight woody stems and in galls seem often to be involved.

For recognition of the subfamily Doryctinae, see van Achterberg (1990, 1993, 1997), and for terminology used in this paper, see van Achterberg (1988). The abbreviation NMS stands for National Museum of Scotland, Edinburgh.

Systematic part

Genus *Pseudorhaconotus* nov.

Type species: *Pseudorhaconotus enervatus* gen. nov. & spec. nov.

Diagnosis.— The new genus differs from all other genera or subgenera of the tribe Rhaconotini by the lack of vein r-m of the fore wing, the elongate pronotum with a transverse carina, the absence of a dorsope on the first metasomal tergite and the lack of an apical fringe of setae of the fore wing. It keys out in the key by Belokobylskij & Tobias (1986) (with difficulty) to *Ecphylus* Foerster, 1862, because of the lacking vein r-m of the fore wing; differs from *Ecphylus* by having vein cu-a of fore wing and vein cu-a of hind wing present (absent in *Ecphylus*), labial palp with 4 segments (*Ecphylus*: 3 segments) and third metasomal tergite sculptured (*Ecphylus*: smooth).

Description.— Antenna medium-sized and with about 32 segments (♀); apical antennal segments dark; scapus normal, its maximum width about twice maximum width of third segment (fig. 2); vertex superficially granulate and with some indistinct rugulae (fig. 3); maxillary and labial palpi with 6 (but 2 basal segments hardly separated) and 4 segments, respectively; anterior ocellus about in same plane as posterior ocelli but at border of steeply declivous frons (fig. 3); antescutal depression absent (fig. 7); pronotum elongate and with a strong transverse carina medially and with upcurved rim anteriorly (figs 7, 10); tegula upcurved anteriorly; mesoscutum low anteriorly (fig. 7); prepectal carina complete and well developed laterally; mesosternal sulcus complete, as row of medium-sized punctures; axillae not well differentiated; propodeum elongate, with long median carina, without tubercles and no distinct and complete areola; vein r-m of fore wing absent and vein cu-a short but distinctly developed; angle between vein r of fore wing and apico-posterior margin of pterostigma acute (fig. 1); vein CU1b of fore wing short and slightly oblique (fig. 1); first subdiscal cell of fore wing narrow and long (fig. 1); fore wing banded and without apical fringe; vein SR of hind wing absent (except for an incomplete fold) and m-cu of hind wing present (fig. 1); vein CU1a of fore wing weakly indicated and at same level as vein 2-CU1 (fig. 1); angle between veins 1-SR and C+SC+R of fore wing sharp; parastigma hardly developed; vein m-cu of fore wing interstitial; vein M+CU of hind wing much shorter than vein 1-M (fig. 1); fore tibia with a row of minute pegs (fig. 9); all tibiae with apical row of pegs; fore femur with weakly developed subbasal blister; middle tibia and tarsus slender, tarsus slightly shorter than tibia and similar to fore tarsus; hind coxa with baso-ventral protuberance; hind tibia evenly setose, not mixed with long setae (fig. 5); no distinct row of pegs on hind tibia; hind femur simple ventrally (fig. 5); first tergite with a strong latero-ventral carina, without dorsope and no distinct glymma and its spiracle in front of middle (figs 7, 8); first acrosternite short and in lateral view rounded, not protruding, tergite largely open ventrally; only second tergite with a transverse postero-oval area (fig. 8); first and second metasomal tergites of ♀ movably joined; second suture of metasoma distinctly impressed medially, rather wide and distinctly crenulate (fig. 8); third tergite without transverse striate groove; fourth and fifth metasomal tergites with sharp lateral crease; medially fifth tergite of ♀ 1.3 times longer than fourth tergite (fig. 7); sixth tergite of ♀ truncate posteriorly, smooth and largely retracted; ovipositor sheath somewhat widened apically and somewhat longer than first metasomal tergite (fig. 7).

Biology.— Unknown.

Distribution.— Europe (West Mediterranean).

Etymology.— From 'pseudo' (= Latin for 'false') and the generic name *Rhaconotus* Ruthe, 1854, because it looks like a *Rhaconotus* species but is distinctly differentiated. Gender: masculine.

Pseudorhaconotus enervatus spec. nov.
(figs 1-10)

Material.— Holotype, ♀ (NMS), 'Spain, Granada, Orgiva, 30S VF68, 500 m', 'interception trap, 25.x.2007, Jose Luis Ruiz de la Cuesta', 'don. A. Ribes, 11223'.

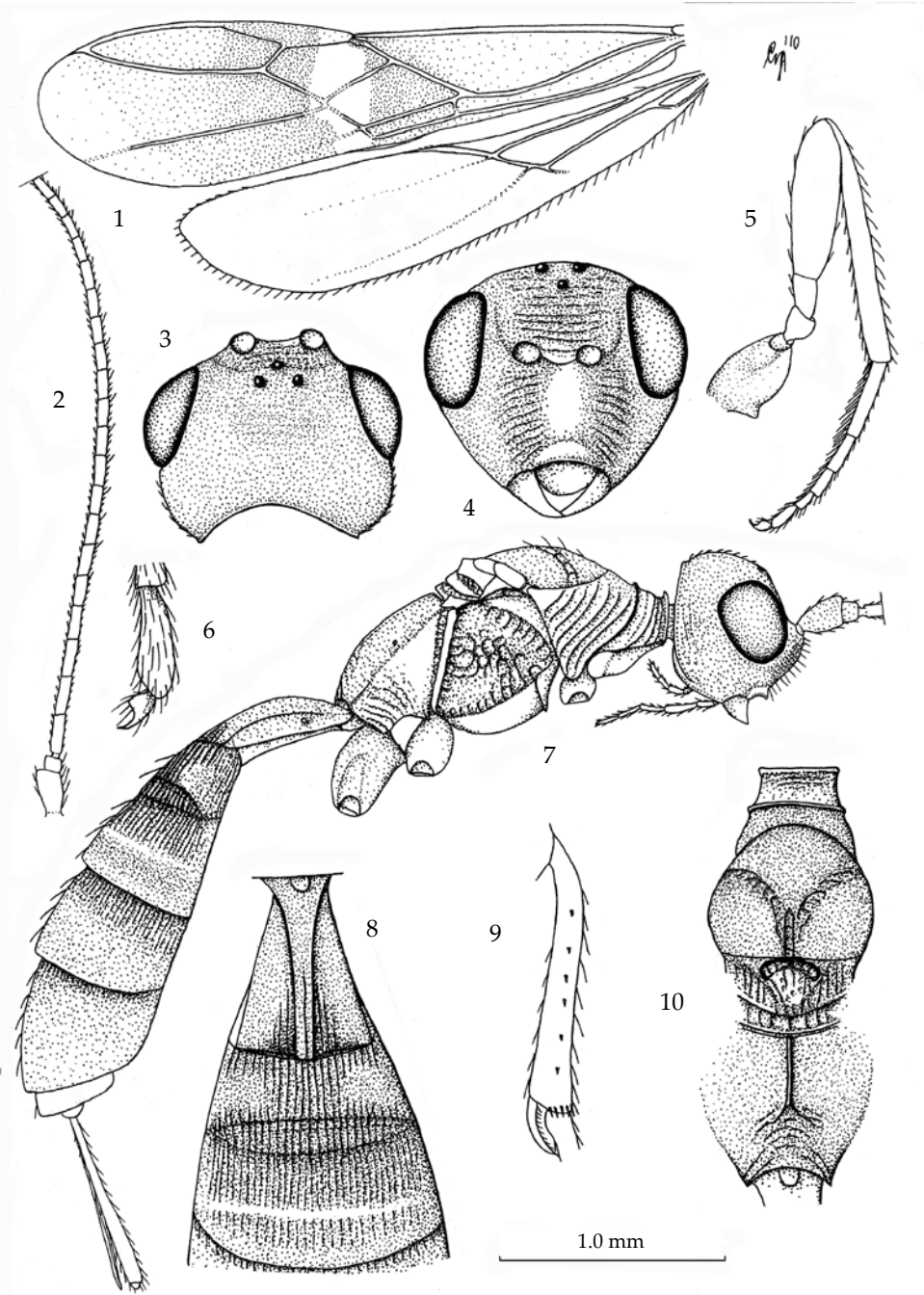
Holotype, ♀, length of body 4.5 mm, of fore wing 2.9 mm.

Head.— Antenna slender, incomplete with 22 segments remaining (but according to photograph of unprepared specimen 32), outer side of third segment flattened, superficially granulate and sparsely setose, third segment 1.1 times as long as fourth segment, length of third, and fourth segments 3.0 and 3.4 times their width, respectively; occipital carina largely present but absent ventrally near wide hypostomal carina; length of maxillary palp 0.8 times height of head; length of eye equal to temple in dorsal view (fig. 3); head in dorsal view behind eyes narrower than at level of eyes; OOL:diameter of ocellus:POL = 9:3:5; frons flat and shiny, superficially granulate and largely transversely rugose; vertex and temple superficially granulate and with a few indistinct rugulae; face granulate and with some transverse striae, but smooth medially; clypeus rather small, flattened, smooth, shiny, its ventral rim concave and strongly produced forwards; length of malar space 1.4 times basal width of mandible and 0.6 times height of eye in lateral view.

Mesosoma.— Length of mesosoma 1.8 times its height; side of pronotum costate carinate, medio-anteriorly with some transverse carinae; lateral carina of mesoscutum obsolescent; prepectal carina rather wide ventrally; mesopleuron superficially shiny, granulate and largely rugose medially and below precoxal sulcus smooth; precoxal sulcus medially weakly impressed and crenulate-rugose; pleural sulcus coarsely crenulate; episternal scrobe not differentiated; metapleuron sparsely setose, smooth anteriorly and remainder coriaceous-rugose; mesoscutal lobes shiny, largely glabrous, flattened and superficially granulate; notauli complete, shallow, rather wide and distinctly crenulate (fig. 10); scutellar sulcus distinct, but narrowed medially, with 4 lateral crenulae; scutellum flat and granulate, with some striae; medially and posteriorly propodeum superficially granulate, medio-posteriorly superficially rugose (fig. 10).

Wings.— Fore wing: pterostigma elongate (fig. 1); r issued at middle of pterostigma (fig. 1); r longer than width of pterostigma; r:3-SR+SR1:2-SR = 7:41:16; 1-CU1:2-CU1 = 1:20; basal cell (except dark part near 1-M) and subbasal cell (except posteriorly) nearly glabrous; m-cu interstitial. Hind wing: M+CU:1-M = 11:29; m-cu medium-sized and directed basally and situated basally of 1r-m.

Legs.— Fore femur 3.1 times as long as wide; fore spur 0.5 times as long as fore basitarsus; hind coxa shiny, superficially granulate; length of femur, tibia and basitarsus of hind leg 3.0, 9.3 and 5.4 times their width, respectively (fig. 5); hind femur shiny, and apical half coriaceous; hind tibial spurs 0.25 and 0.35 times as long as hind basitarsus; hind basitarsus slightly wider than second tarsal segment.



Figs 1-10. *Pseudorhaconotus enervatus* gen. nov. & spec. nov., ♀, holotype. 1, wings; 2, antenna; 3, head, dorsal aspect; 4, head, anterior aspect; 5, hind leg; 6, outer hind claw; 7, habitus, lateral aspect; 8, first-third metasomal tergites, dorsal aspect; 9, fore tibia, anterior aspect; 10, mesosoma, dorsal aspect. 1, 2, 5, 7: 1.0 × (= scale-line); 3, 4: 1.6 ×; 6: 3.0 ×; 8, 10: 1.3 ×; 9: 1.9 ×.

Metasoma.— First tergite 1.2 times as long as wide apically, its surface shiny and very superficially granulate, flattened but depressed postero-sublaterally, its dorsal carinae complete (fig. 8), parallel except basally and tergite flat basally; second tergite distinctly longitudinally costate-striate, but with two granulate patches medio-laterally (fig. 8); third-fifth tergites basally striate and remainder superficially granulate, but posteriorly smooth; length of setose part of ovipositor sheath 0.34 times fore wing, 0.4 times metasoma and 0.9 times length of hind tibia; ovipositor sheath somewhat widened subapically and truncate apically, but with small appendix (fig. 7).

Colour.— Dark brown; scapus, head, pronotum, remainder of mesosoma (except propodeum) dorsally partly, middle and hind coxae and first tergite chestnut brown; remainder of antenna (but darkened apically), fore coxa, trochanters and trochantelli, base of tibiae and tarsi yellowish-brown; palpi brown but darkened basally; basal third of pterostigma and 1-R1 pale yellowish; veins largely (but M+CU1, cu-a and 2-A yellowish as veins of hind wing), as remainder of pterostigma dark brown; band below base of pterostigma subhyaline, fore wing basally pale yellowish and remainder of membrane dark brown or brown.

Distribution.— Spain (Andalusia).

Etymology.— From 'ex' (Latin for 'out of') and 'nervus' (Latin form nerve) because of the lacking nerve of the fore wing.

Acknowledgements

Thanks are due to Jose Luis Ruiz de la Cuesta (Granada) and Antoni Ribes (Lleida) for the gift of the specimen and the additional information.

References

- Achterberg, C. van, 1988. Revision of the subfamily Blacinae Foerster (Hymenoptera, Braconidae).— *Zoologische Verhandelingen Leiden* 249: 1-324, figs 1-1250.
- Achterberg, C. van, 1990. Illustrated key to the subfamilies of the Holarctic Braconidae (Hymenoptera: Ichneumonoidea).— *Zoologische Mededelingen Leiden* 64: 1-20, figs 1-26.
- Achterberg, C. van, 1993. Illustrated key to the subfamilies of the Braconidae (Hymenoptera: Ichneumonoidea).— *Zoologische Verhandelingen Leiden* 283: 1-189, figs 1-66, photos 1-140, plates 1-102.
- Achterberg, C. van, 1997. Braconidae. An illustrated key to all subfamilies.— ETI World Biodiversity Database CR-ROM Series.
- Belokobylskij, S.A. & V.I. Tobias, 1986. Doryctinae: 21-72. In: Medvedev, G.S. (ed.). *Opredelitel nasekomych Evropeiskoi tchasti SSSR 3, Perepontchatokrylye 4*.— Keys to the Fauna of the USSR 145: 1-501, figs 1-263.
- Shaw, M.R. & T. Huddleston, 1991. Classification and biology of braconid wasps (Hymenoptera: Braconidae).— *Handbooks for the Identification of British Insects* 7 (11): 1-126, figs 1-126.
- Yu, D.S., K. van Achterberg & K. Horstmann, 2007. Biological and taxonomical information: Ichneumonoidea 2006.— *Taxapad Interactive Catalogue*, Lexington.
- Zaldivar-Riverón, A., S.A. Belokobylskij, V. León-Regagnon, R. Briceño-G. & D.L.J. Quicke, 2008. Molecular phylogeny and historical biogeography of the cosmopolitan parasitic wasp subfamily Doryctinae (Hymenoptera: Braconidae).— *Invertebrate Systematics* 22: 345-363.

Received: 16.iii.2010

Accepted: 31.vii.2010

Edited: J.A. Miller

