



Six new *Dinotrema* species (Hymenoptera, Braconidae) from Spain, with prescutellar pit and medially sculptured propodeum

FRANCISCO JAVIER PERIS-FELIPO^{1,3}, SERGEY A. BELOKOBYLSKIY² & RICARDO JIMÉNEZ-PEYDRÓ¹

¹Laboratory of Entomology and Pest Control, Institute Cavanilles of Biodiversity and Evolutionary Biology, University of Valencia, c/ . Catedrático José Beltrán nº2, 46980 Paterna, Valencia, Spain

²Zoological Institute Russian Academy of Sciences, St. Petersburg, 199034, Russia; Museum and Institute of Zoology Polish Academy of Sciences, Wilcza 64, Warszawa 00–679, Poland

³Corresponding author. E-mail: Francisco.peris@uv.es

Abstract

Descriptions of six new species of the genus *Dinotrema* from Spain with smooth or only medially sculptured propodeum are provided. The new species described are: *D. achterbergi* sp. nov., *D. broadi* sp. nov., *D. enanum* sp. nov., *D. fischerianum* sp. nov., *D. munki* sp. nov. and *D. pappi* sp. nov.

Key words: Parasitoids, taxonomy, descriptions, Dacnusiini, Alysiinae, Western Palearctic

Introduction

The genus *Dinotrema* Foerster, 1862 is the largest genus in the subfamily Alysiinae. About 250 species of this genus have been recorded in Western and Central Europe (e.g., Fischer 1972, 1993; Achterberg 1988), as well as from Russia and adjacent territories (Tobias 2003, 2004a, 2004b, 2006).

However, *Dinotrema* has been very poorly studied in Spain and only 19 species are known at present (Fischer *et al.* 2008). The main aim of this revision is an understanding of the composition of this genus in the Spanish fauna as part of an ongoing project to prepare a new key for the determination of Western Palearctic *Dinotrema* species. In this paper, six new species with prescutellar pit and medially sculptured propodeum are described and illustrated, viz. *Dinotrema achterbergi* sp. nov., *D. broadi* sp. nov., *D. enanum* sp. nov., *D. fischerianum* sp. nov., *D. munki* sp. nov., and *D. pappi* sp. nov..

Material and methods

The specimens for this study were collected by Malaise traps in the Natural Park of Carrascal de la Font Roja (Alicante Province, Spain) and in the Natural Park of La Tinença de Benifassà (Castellon Province, Spain). The climatic and orographic descriptions of these National Parks are given by Peris-Felipo and Jiménez-Peydró (2011). For the terminology of the morphological features and sculpture, measurements and wing venation nomenclature, see Fischer (1973). Measurements of the length and width of mandible are shown on the Fig. 1.

The following abbreviations are used in the paper: POL—postocellar line; OOL—ocular-ocellar line; OD—maximum diameter of lateral ocellus. The types of species described are deposited in the Entomological Collection of the University of Valencia (Valencia, Spain; ENV), some paratypes are in the collection of Zoological Institute RAS (St. Petersburg, Russia; ZISP).

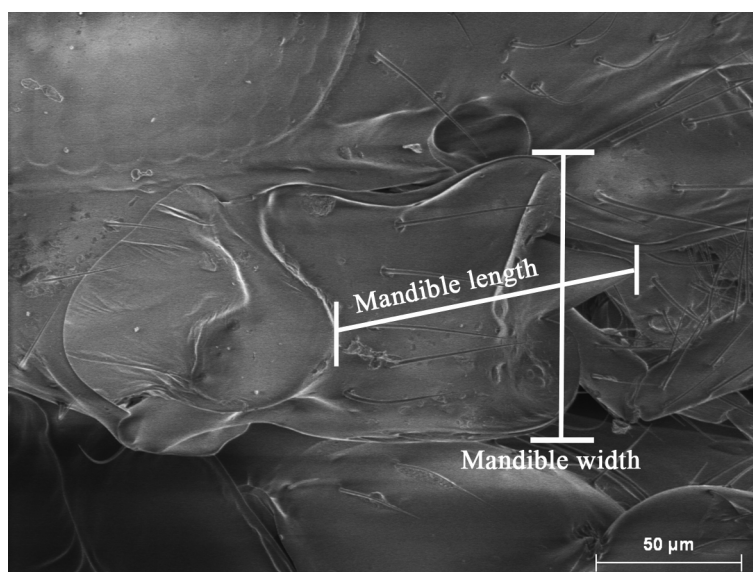


FIGURE 1. Measurements of the length and width of mandible.

Description of new species

Dinotrema achterbergi Peris-Felipo, sp. nov.

(Figs 2–13)

Etymology. Named in honor Dr Cornelius van Achterberg, well-known Netherland hymenopterist for his great contribution to the study of the World Braconidae.

Type material. Holotype: female, Spain, Castellon Province, Pobra de Benifassà, Natural Park of Tinença de Benifassà, 10.06.2004 (F.J. Peris-Felipo leg.) (ENV). Paratype: 1 female, same label as in holotype, but 03.06.2004 (ENV).

Description. Female.

Head. In dorsal view, 1.70x as wide as median length, 1.45–1.50x as wide as mesoscutum, smooth, with rounded temples behind eye. Eye in lateral view 1.50x as high as wide and 1.15x as wide as temple. POL 2.70x OD; OOL 2.60x OD. Face 0.80x as wide as high; inner margins of eyes subparallel. Clypeus 3.10–3.15x as wide as high, slightly curved ventrally. Paraclypeal fovea elongated, reaching the middle distance between clypeus and eye. Mandible widened towards apex, 1.20–1.25x as long as its maximum width. Upper tooth large, but shorter than middle tooth. Middle tooth longest, wide basally and narrowed towards apex, rounded apically. Lower tooth short and wide, weakly longer than upper tooth, rounded apically. Antennae thick, more than 14-segmented (apical segments missing). Scape 1.70–1.80x as long as pedicel. First flagellar segment 2.50–2.60x as long as its apical width, 1.35–1.40x as long as second segment; second segment 2.05–2.10x as long as its maximum width. Middle flagellar segments about 1.50x as long as their width.

Mesosoma. In lateral view, 1.05x as long as high. Mesoscutum 1.10–1.20x as long as maximum width, with numerous setae in its middle part. Notauli absent at most posterior part. Mesoscutal pit present and elongate. Prescutellar depression weakly and sparsely sculptured, with fine median carina. Sternaulus (precoxal suture) present, not reaching anterior and posterior parts of mesopleuron. Posterior mesopleural furrow slightly crenulate below. Propodeum smooth, with median longitudinal carina crossing from anterior to posterior margins, with usually short carinae emerging from longitudinal carina far not reaching propodeal margins. Propodeal spiracles relatively small.

Legs. Hind femur 4.25x as long as wide. Hind tibia weakly widened to apex, about 10.00x as long as its maximum subapical width, 1.20–1.25x as long as hind tarsus. First segment of hind tarsus 2.10x as long as second segment.

Wings. Length of fore wing 2.50x its maximum width. Vein r1 present. Radial cell reaching to apex of wing,

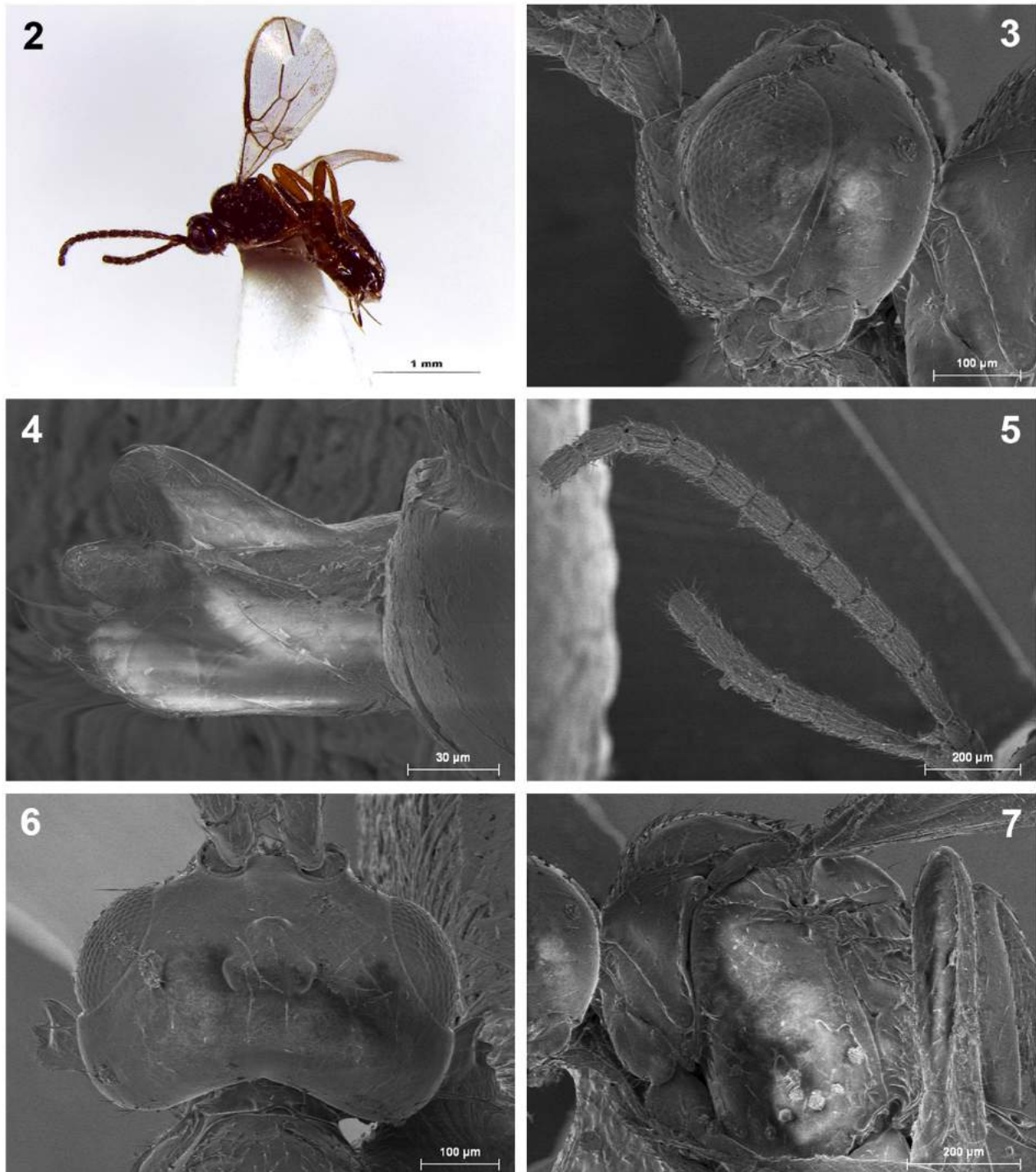
3.60–3.70x as long as its maximum width. Nervulus weakly postfurcal. Brachial cell closed, short, distinctly widened apically, 2.05–2.10x as long as its maximum width. Hind wing 8.30x as long as its maximum width.

Metasoma. Distinctly compressed laterally. First tergite weakly widened towards apex, 2.60x as long as its apical width, entirely almost smooth. Ovipositor 1.30x as long as first tergite, distinctly shorter than metasoma, 0.65–0.70 as long as hind femur.

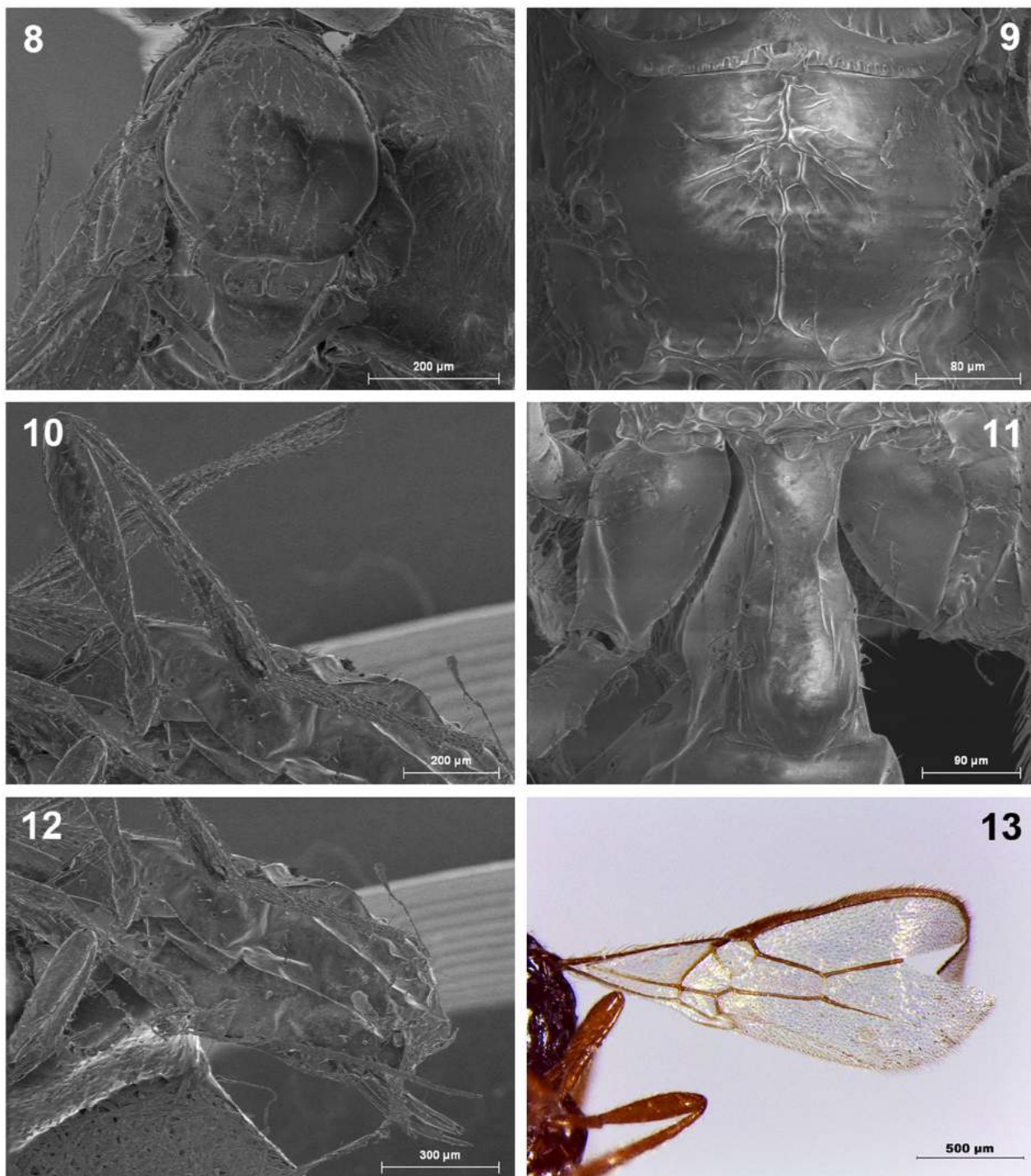
Colour. Body and legs brown to dark brown. Wings hyaline. Pterostigma brown.

Length. Body 1.95–2.00 mm; fore wing 1.80–1.85 mm.

Male. Unknown.



FIGURES 2–7. *Dinotrema achterbergi* sp. nov. (female) 2. Habitus, lateral view. 3. Head, lateral view. 4. Mandible. 5. Antenna. 6. Head, dorsal view. 7. Mesosoma, lateral view.



FIGURES 8–13. *Dinotrema achterbergi* sp. nov. (female) 8. Mesonotum. 9. Propodeum. 10. Hind leg. 11. First metasomal tergite. 12. Metasoma and ovipositor. 13. Fore wing.

Diagnosis. This new species resembles *Dinotremsa occipitale* (Fischer), *D. dimorphum* (Fischer) and *D. glabrum* (Stelfox et Graham). *Dinotrema achterbergi* sp. nov. differs from *D. occipitale* in having the first flagellar segment thick, 2.50–2.60x as long as wide (3.30x in *D. occipitale*), mandible 1.20x longer than wide (1.50x in *D. occipitale*) and first metasomal tergite almost smooth (distinctly sculptured in *D. occipitale*). It also differs from *D. dimorphum* in having the first flagellar segment thick, 2.50–2.60x as long as wide (3.50x in *D. dimorphum*), numerous setae on middle part of mesoscutum (only two rows of double setae in *D. dimorphum*), and mandible 1.20–1.25x as long as its maximum width (1.40x in *D. dimorphum*). Finally, *D. achterbergi* sp. nov. differs from *D. glabrum* in having the first flagellar segment thick, 2.50–2.60x as long as width (3.00x in *D. glabrum*), ovipositor

much shorter than metasoma (as long as metasoma in *D. glabrum*), and first metasomal tergite almost smooth (sculptured in *D. glabrum*). Amongst the Spanish species, *D. achterbergi* sp. nov. is similar to *D. jimenezi* Peris-Felipo, but differs in having the first metasomal tergite 2.60x as long as its apical width (1.80x in *D. jimenezi*), upper tooth medium size (large size in *D. jimenezi*), prescutellar depression without median and lateral carinae (with coarse median and fine lateral carinae in *D. jimenezi*), mesoscutal pit elongated (oval in *D. jimenezi*) and hind femur 4.25x as long as its maximum width (3.60–3.70x in *D. jimenezi*).

***Dinotrema broadi* Peris-Felipo, sp. nov.**

(Figs 14–27)

Etymology. Named in honor Dr Gavin Broad, curator of Hymenoptera in the Natural History Museum of London (U.K.) for his great help during study of Braconidae.

Type material. Holotype: female, Spain, Castellon Province, Pobla de Benifassà, Natural Park of Tinença de Benifassà, 30.10.2006 (F.J. Peris-Felipo leg.) (ENV). Paratype: 1 female, same label as in holotype, but 03.07.2006 (ENV); 1 female, same label as in holotype, but 06.11.2006 (ZISP); 1 female, same label as in holotype, but 26.02.2007 (ENV); 1 male, same label as in holotype, but 01.05.2006 (ZISP); 1 male, same label as in holotype, but 29.05.2006 (ENV).

Other material: 1 male, Spain, Castellon Province, Pobla de Benifassà, Natural Park of Tinença de Benifassà, 02.06.2004; 2 males, same label, but 30.10.2004; 1 male, same label, but 06.11.2006; 1 male, same label, but 08.01.2007 (ENV). 1 female, Spain, Alicante Province, Alcoi, Natural Park of Carrascal de La Font Roja, 27.11.2005; 1 male, same label, but 16.05.2005 (ENV).

Description. Female.

Head. In dorsal view, 1.70x as wide as median length, 1.40–1.50x as wide as mesoscutum, smooth, with rounded temples behind eyes. Eye in lateral view 1.35–1.40x as high as wide and 1.05–1.10x as wide as temple. POL about 3.00x OD; OOL 3.10x OD. Face 0.65x as wide as high; inner margins of eyes subparallel. Clypeus 2.50x as wide as high, slightly curved ventrally. Paraclypeal fovea larger than middle distance between clypeus and eye but far separated from eye. Mandible weakly widened towards apex, 1.30x as long as its maximum width. Upper tooth rather small, distinctly shorter than middle tooth. Middle tooth the longest, wide basally and narrowed apically. Lower tooth very short. Antennae thick, 17-segmented, shorter than body. Scape 3.25x as long as pedicel. First flagellar segment 3.20–3.25x as long as its apical width, 1.30–1.35x as long as second segment; second segment 1.65–1.70x as long as its maximum width. Third to twelfth flagellar segments about 2.00x, thirteenth segment 1.80x, fourteenth segment 2.25x and fifteenth segment 2.80–2.90x as long as their maximum width.

Mesosoma. In lateral view, 1.20–1.30x as long as high. Mesoscutum about as long as maximum width, with two rows of setae in middle part. Notauli absent at most posterior part. Mesoscutal pit present and elongated. Prescutellar depression almost smooth, with median carina. Sternaulus (precoxal suture) present, not reaching anterior and posterior parts of mesopleuron. Posterior mesopleural furrow smooth. Propodeum mainly smooth, with median longitudinal carina crossing from its anterior to posterior margins, with only single short carina emerging from median carina and not reaching propodeal edges. Propodeal spiracles relatively small.

Legs. Hind femur 4.25x as long as wide. Hind tibia weakly widened to apex, 8.90–9.00x as long as its maximum subapical width, 1.15–1.20x as long as hind tarsus. First segment of hind tarsus 1.50–1.55x as long as second segment.

Wings. Length of fore wing 2.40–2.50x its maximum width. Vein r₁ present but hyaline. Radial cell reaching to apex of wing, 4.75x as long as its maximum width. Nervulus distinctly postfurcal. Brachial cell closed, short, widened apically, 2.50–2.60x as long as its maximum width. Hind wing 9.50–10.00x as long as its maximum width.

Metasoma. Distinctly compressed laterally. First tergite weakly widened towards apex, 2.25x as long as its apical width, very finely striate or almost smooth in apical half. Ovipositor 1.90–2.00x as long as first tergite, shorter than metasoma, 1.25–1.30x as long as hind femur.

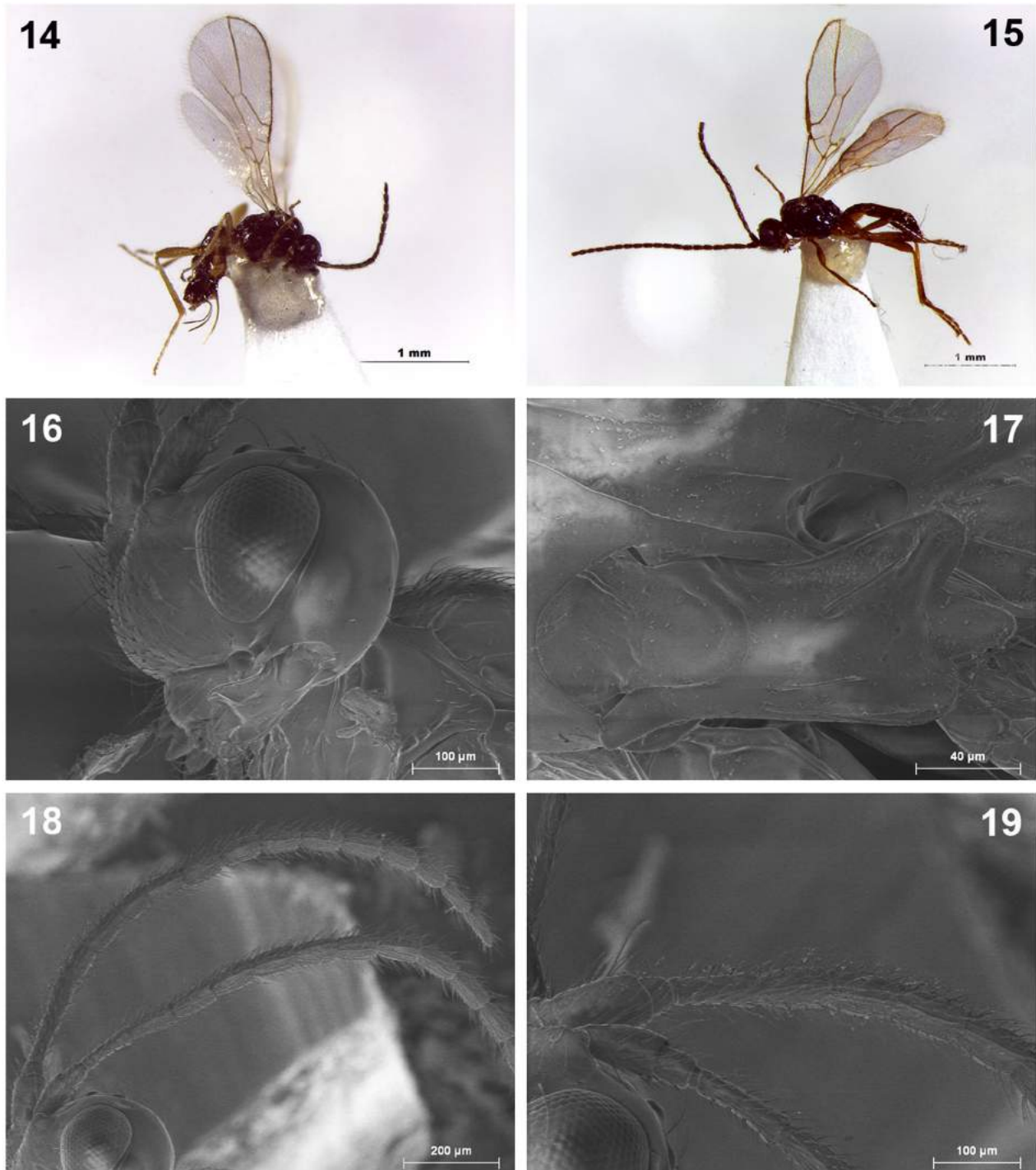
Colour. Body and legs brown to dark brown. Wings hyaline. Pterostigma brown.

Length. Body 1.60–1.70 mm; fore wing 1.80–1.90 mm.

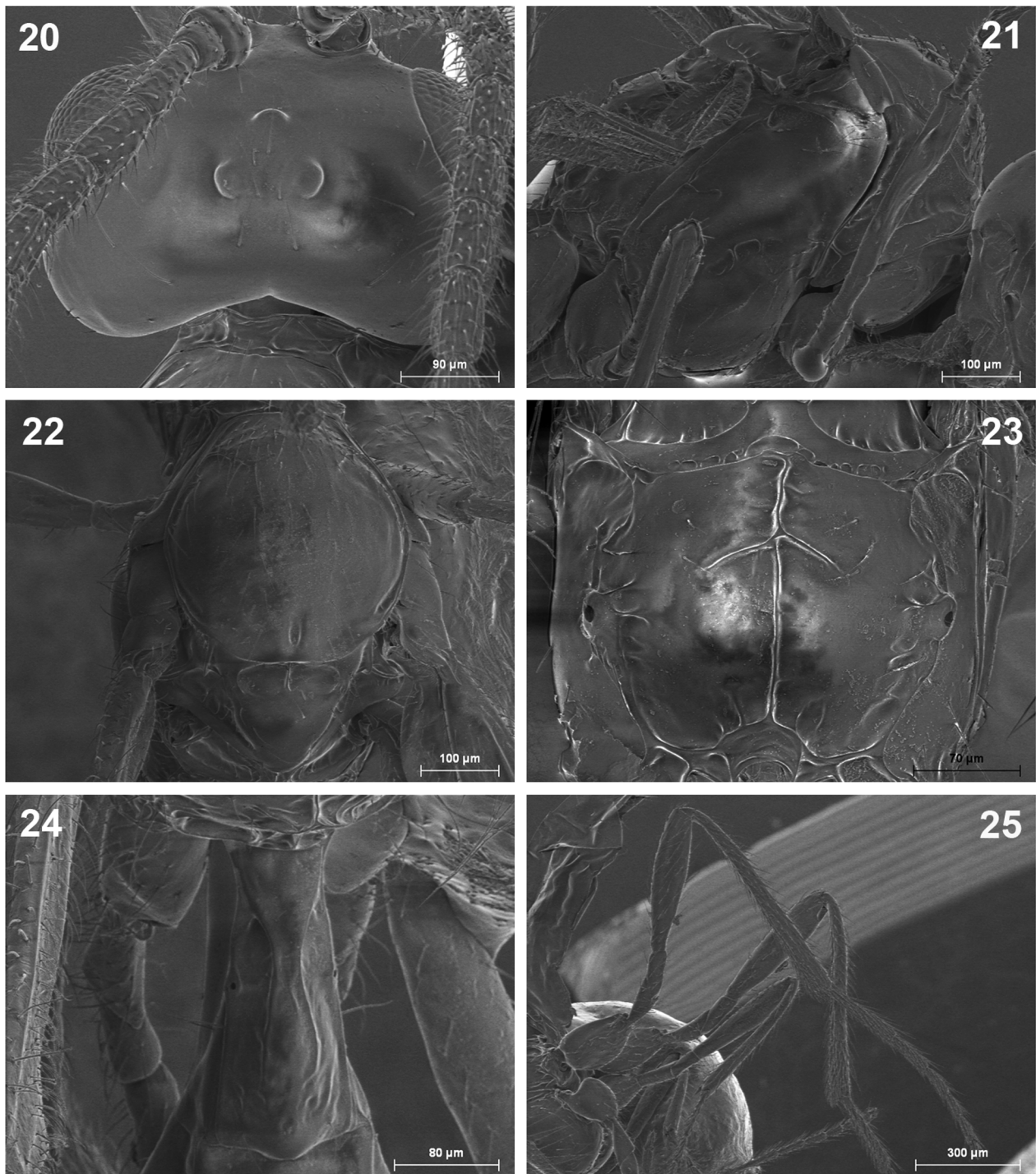
Male. Body length 1.80–1.85 mm; fore wing 2.00 mm. Mandible 1.20–1.30x as long as wide. Antenna 18–21-

segmented. First flagellar segment 3.00x as long as its maximum width. Hind femur 4.20–4.30x as long as wide. Vein r1 present but not colored as others veins. Otherwise similar to female.

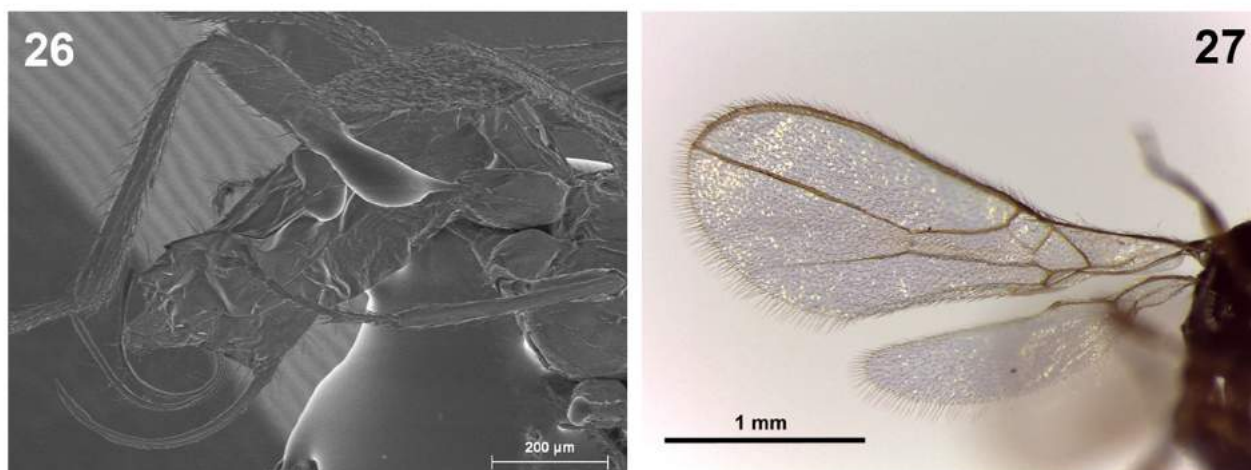
Diagnosis. This new species resembles *Dinotrema paucicrene* (Fischer) and *D. nigricorne* (Thomson). *Dinotrema broadi* **sp. nov.** differs from *D. paucicrene* in having the first flagellar segment 3.20x as long as wide (4.00x in *D. paucicrene*), first metasomal tergite 2.25x as long as its apical width (2.00x in *D. paucicrene*) and with distinctly two dorsal carinae (these carinae absent in *D. paucicrene*). New species differs from *D. nigricorne* in having the first flagellar segment 3.20x as long as wide (3.50x in *D. nigricorne*), hind femur 4.25x as long its maximum width (5.00x in *D. nigricorne*), first metasomal tergite 2.25x as long as its apical width (2.00x in *D. nigricorne*), and ovipositor 1.90–2.00x as long as first tergite (equal to first tergite in *D. nigricorne*).



FIGURES 14–19. *Dinotrema broadi* **sp. nov.** (14, 16–19, female; 15, male). 14, 15. Habitus, lateral view. 16. Head, antero-lateral view. 17. Mandible. 18. Antenna. 19. Basal segments of antenna.



FIGURES 20–25. *Dinotrema broadi* **sp. nov.** (female). 20. Head, dorsal view. 21. Mesosoma, lateral view. 22. Mesonotum. 23. Propodeum. 24. First metasomal tergite. 25. Hind leg.



FIGURES 26–27. *Dinotrema broadi* sp. nov. (female). 26. Metasoma and ovipositor. 27. Fore and hind wings.

***Dinotrema enanum* Peris-Felipo, sp. nov.**

(Figs 28–41)

Etymology. Named is proposed by its small size, from Spanish “enana” means “tiny”.

Type material. Holotype: female, Spain, Castellon Province, Pobla de Benifassà, Natural Park of Tinença de Benifassà, 11.12.2006 (F.J. Peris-Felipo leg.) (ENV). Paratype: 1 male, same label as in holotype, but 14.05.2007 (ENV); 1 male, Spain, Alicante Province, Alcoi, Natural Park of Carrascal de la Font Roja, 13.04.2006 (F.J. Peris-Felipo leg.) (ENV).

Description. Female.

Head. In dorsal view, 1.60x as wide as median length, 1.40x as wide as mesoscutum, smooth, with rounded temples behind eyes. Eye in lateral view 1.50x as high as wide, 1.15–1.20x as wide as temple. POL 3.20–3.25x OD; OOL 2.80–2.85x OD. Face 0.65x as wide as high; inner margins of eyes subparallel. Clypeus 2.50x as wide as high, slightly curved ventrally. Paraclypeal fovea small and oval, not reaching middle distance between clypeus and eye. Mandible distinctly widened towards apex, 1.15–1.20x as long as its maximum width. Upper tooth rather small, distinctly shorter than middle tooth. Middle tooth the longest, wide basally and pointed apically. Lower tooth rounded, almost as long as upper tooth. Antennae thick, 18-segmented, longer than body. Scape 2.20–2.25x as long as pedicel. First flagellar segment 3.00x as long as its apical width, 1.15–1.20x as long as second segment; second segment 1.70–1.75x as long as its maximum width. Third to thirteenth flagellar segments 1.85–2.00x, fourteenth segment 1.55x, fifteenth and sixteenth segments 2.15x as long as their maximum width.

Mesosoma. In lateral view, 1.20x as long as high. Mesoscutum 1.10x as long as maximum width with rows of setae in middle part. Notauli absent at most posterior part. Mesoscutal pit present, oval. Prescutellar depression smooth, without coarse median carina. Sternaulus (precoxal suture) present, not reaching anterior and posterior part of mesopleura. Posterior mesopleural furrow crenulated. Propodeum mainly smooth, with median longitudinal carina crossing from anterior to posterior margins, with short transverse carinae emerging from median carina and not reaching propodeal edges. Propodeal spiracles relatively small.

Legs. Hind femur 3.85–4.00x as long as wide. Hind tibia weakly widened to apex, 9.80–9.90x as long as its maximum subapical width, 1.15–1.20x as long as hind tarsus. First segment of hind tarsus 1.50–1.55x as long as second segment.

Wings. Length of fore wing 2.45–2.50x its maximum width. Vein r1 present. Radial cell reaching to apex of wing, 5.00x as long as its maximum width. Nervulus distinctly postfurcal. Brachial cell closed, short, distinctly widened apically, 2.60x as long as its maximum width. Hind wing 6.50x as long as its maximum width.

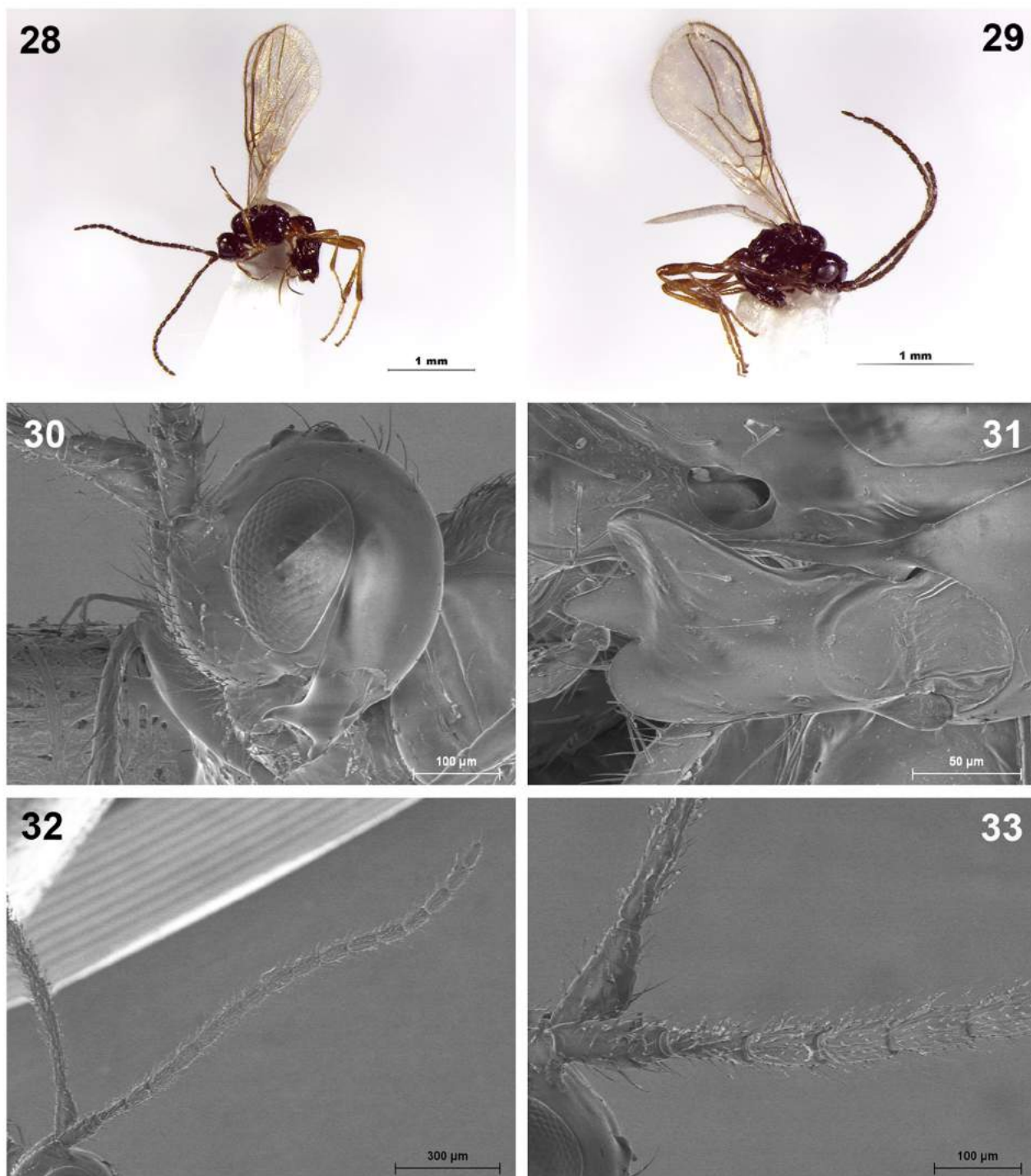
Metasoma. Distinctly compressed laterally. First tergite weakly widened towards apex, 1.90x as long as its apical width, almost entirely smooth, with two dorsal carinae. Ovipositor 2.15–2.20x as long as first tergite, shorter than metasoma, 1.20x as long as hind femur.

Colour. Body and legs brown to dark brown. Wings hyaline. Pterostigma brown. Vein r1 hyaline.

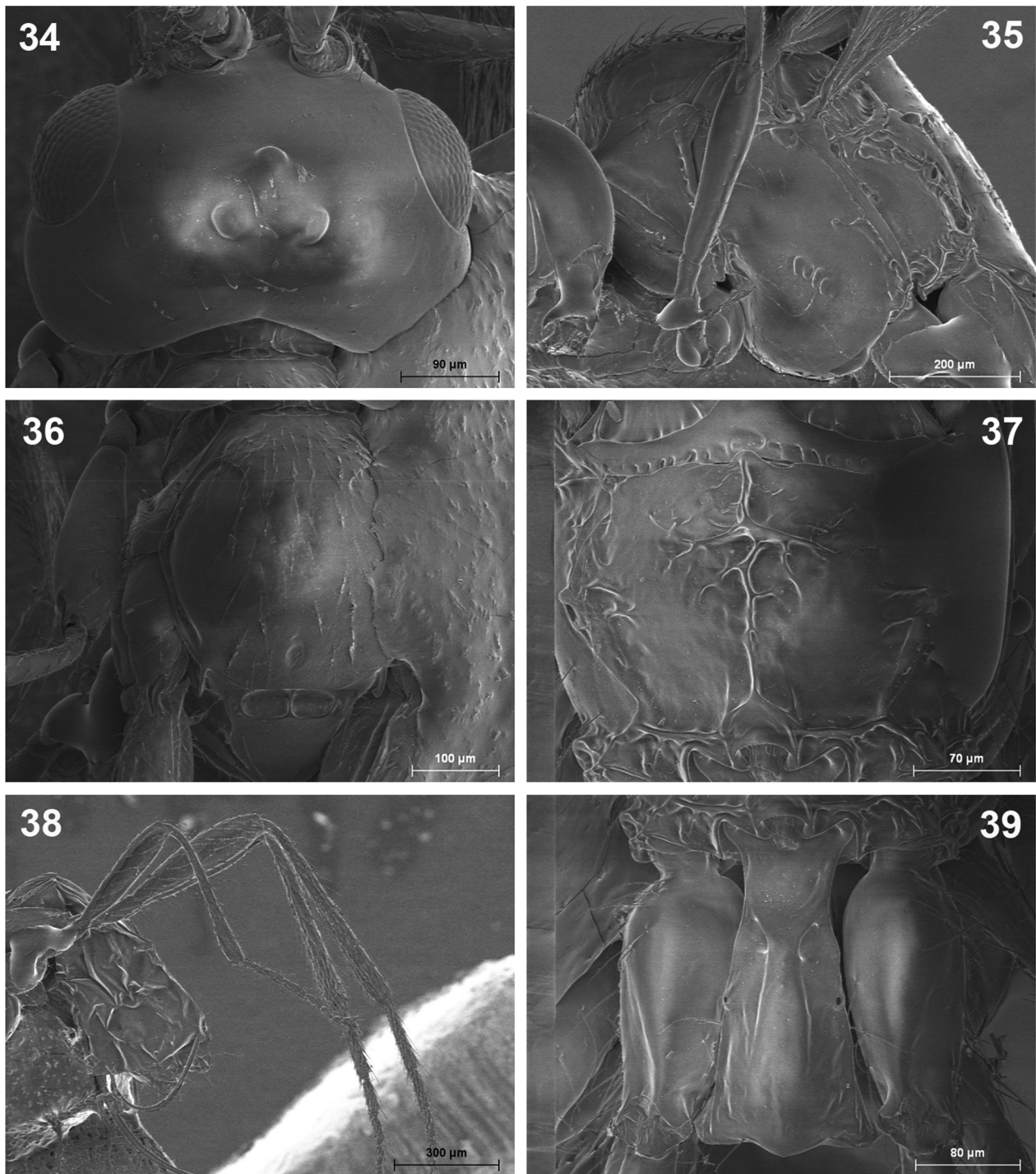
Length. Body 1.55–1.60 mm; fore wing 2.10–2.15 mm.

Male. Body length 1.45 mm; fore wing 2.15 mm. Mandible 1.15–1.20x as long as wide. Antenna 22-segmented. First flagellar segment 3.00x as long as its maximum width. Third to eighteenth flagellar segments about 2.60x as long as its maximum width, nineteenth segment 3.50x and twentieth segment 4.00x as long as their maximum width. Hind femur 4.10x as long as wide. Otherwise similar to female.

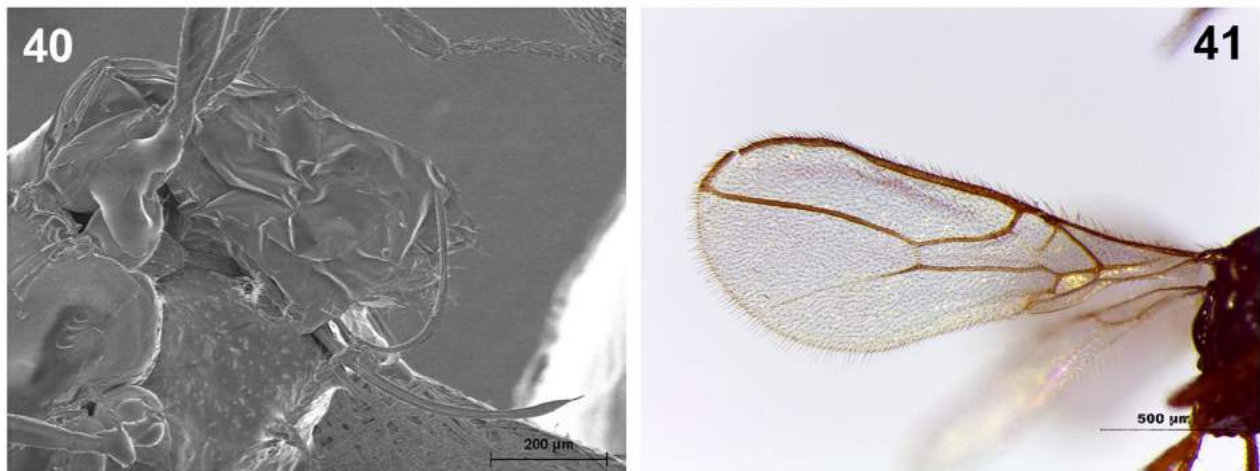
Diagnosis. This new species resembles *D. propodeale* (Tobias) but differs in having the first metasomal tergite almost smooth (sculptured in *D. propodeale*), mandible 1.15–1.20x as long as wide (1.70x in *D. propodeale*), and hind femur 3.85–4.00x as long as maximum width (4.30x in *D. propodeale*).



FIGURES 28–33. *Dinotrema enanum* sp. nov. (28, 30, 31, female; 29, male). 28, 29. Habitus, lateral view. 30. Head, lateral view. 31. Mandible. 32. Antenna. 33. Basal segments of antenna.



FIGURES 34–39. *Dinotrema enanum* **sp. nov.** (female). 34 Head, subdorsal view. 35. Mesosoma, lateral view. 36. Mesonotum. 37. Propodeum. 38. Hind leg. 39. First metasomal tergite.



FIGURES 40–41. *Dinotrema enanum* sp. nov. (female). 40. Metasoma and ovipositor, lateral view. 41. Fore and hind wings.

***Dinotrema fischerianum* Peris-Felipo, sp. nov.**

(Figs 42–53)

Etymology. Named in honor Dr Maximillian Fischer, well-known Austrian hymenopterist for his great contribution into the study of the World Alysiinae.

Type material. Holotype: female, Spain, Alicante Province, Alcoi, Natural Park of Carrascal de la Font Roja, 25.04.2007 (F.J. Peris-Felipo leg.) (ENV). Paratype: 1 female, same label as in holotype, but 13.05.2004 (ZISP); 1 female, Spain, Castellon Province, Pobra de Benifassà, Natural Park of Tinença de Benifassà, 23.04.2007 (F.J. Peris-Felipo leg.) (ENV).

Description. Female.

Head. In dorsal view, 1.80x as wide as median length, 1.35–1.40x as wide as mesoscutum, smooth, with rounded temples behind eyes. Eye in lateral view 1.40x as high as wide and 1.05–1.10x as wide as temple. POL about 3.60–3.70x OD; OOL 3.50–3.55x OD. Face 0.50x as wide as high; inner margins of eyes subparallel. Clypeus 3.50x as wide as high, slightly curved ventrally. Paraclypeal fovea rounded, not reaching the middle distance between clypeus and eye. Mandible widened towards apex, 1.55–1.60x as long as its maximum width. Upper tooth small, distinctly shorter than middle tooth. Middle tooth the longest, wide basally and pointed apically. Lower tooth rounded, weakly longer than upper tooth. Antennae thick, 16-segmented, shorter than body. Scape 2.40–2.45x as long as pedicel. First flagellar segment 2.70–2.80x as long as its apical width, 1.35–1.40x as long as second segment; second segment 1.60–1.65x as long as its maximum width. Third flagellar segments 1.50x. Fourth to eleventh segment 1.20–1.30x, twelfth and thirteenth segments 1.05–1.10x, and fourteenth segment 1.75–1.80x as long as their maximum width.

Mesosoma. In lateral view, 1.20x as long as high. Mesoscutum as long as maximum width with 2 rows of couple setae around notauli. Notauli absent at most posterior part. Mesoscutal pit present, but slender and elongated. Prescutellar depression smooth, with double median carina. Sternaulus (precoxal suture) present, distinct, reached anterior and posterior parts of mesopleuron. Posterior mesopleural furrow crenulate in lower half. Propodeum mainly smooth, with median longitudinal carina crossing from anterior to posterior its margins, with short carinae emerging from median carina and not reaching propodeal edges. Propodeal spiracles relatively small.

Legs. Hind femur 4.00x as long as wide. Hind tibia weakly widened to apex, 7.05–7.15x as long as its maximum subapical width, 1.00–1.05x as long as hind tarsus. First segment of hind tarsus 3.25–3.30x as long as second segment.

Wings. Length of fore wing 2.5–2.6x its maximum width. Vein r1 present. Radial cell reaching to apex of wing, 3.70x as long as its maximum width. Nervulus distinctly postfurcal. Brachial cell closed, short, distinctly widened apically, 2.50–2.60x as long as its maximum width. Hind wing 5.90–6.00x as long as its maximum width.

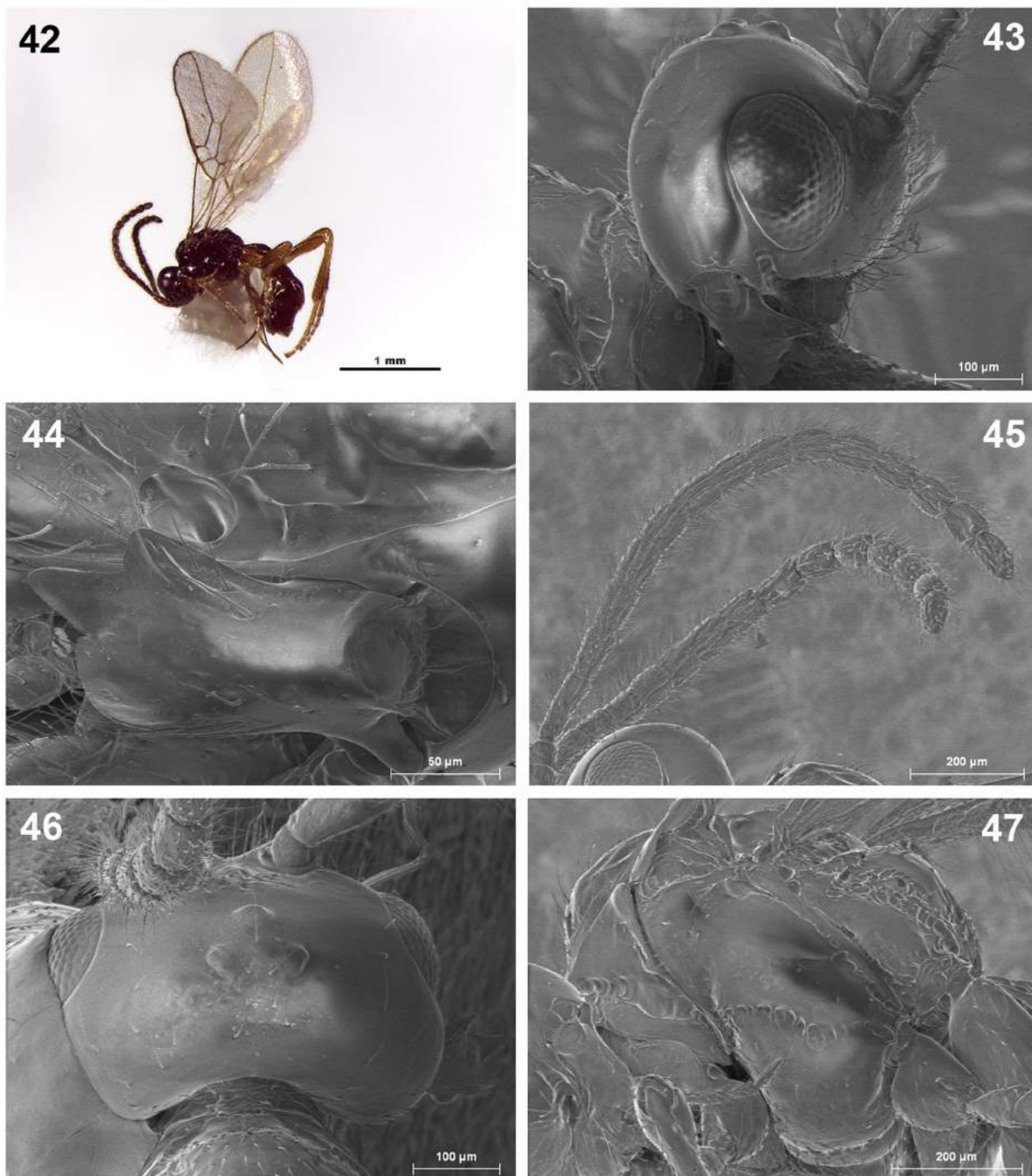
Metasoma. Distinctly compressed laterally. First tergite weakly widened towards apex, 1.70–1.75x as long as

its apical width, smooth medioposteriorly, finely rugulose basally and laterally. Ovipositor 1.80–1.90x as long as first tergite, shorter than metasoma, almost as long as hind femur.

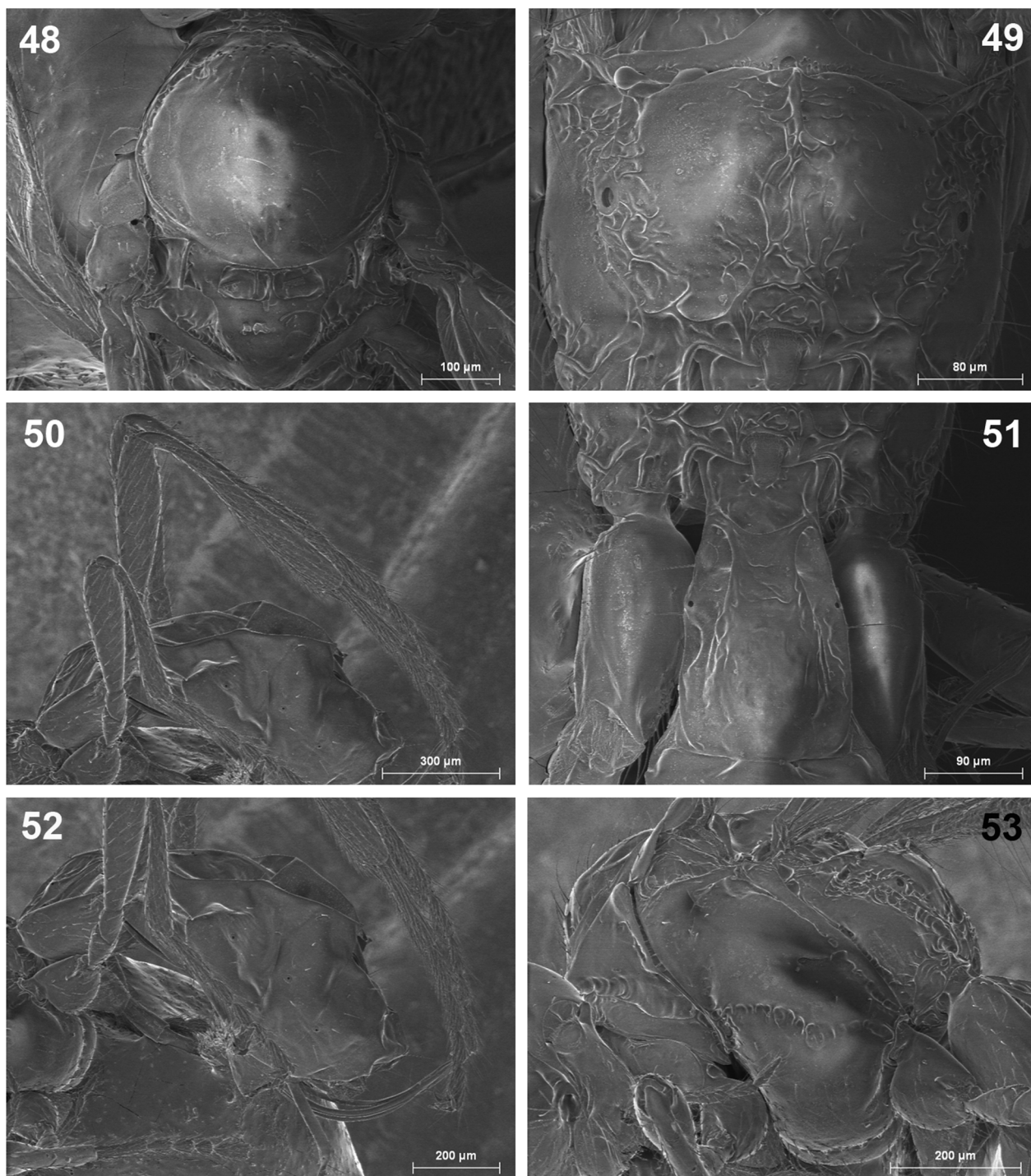
Colour. Body and legs brown to dark brown. Wings hyaline. Pterostigma brown.

Length. Body 1.90–2.00 mm; fore wing 2.15–2.20 mm.

Male. Unknown.



FIGURES 42–47. *Dinotrema fischerianum* sp. nov. (female). 42. Habitus, lateral view. 43. Head, lateral view. 44. Mandible. 45. Antenna. 46. Head, dorsal view. 47. Mesosoma, lateral view.



FIGURES 48–53. *Dinotrema fischerianum* sp. nov. (female). 48. Mesonotum. 49. Propodeum. 50. Hind leg. 51. First metasomal tergite. 52. Metasoma and ovipositor, lateral view. 53. Fore and hind wings.

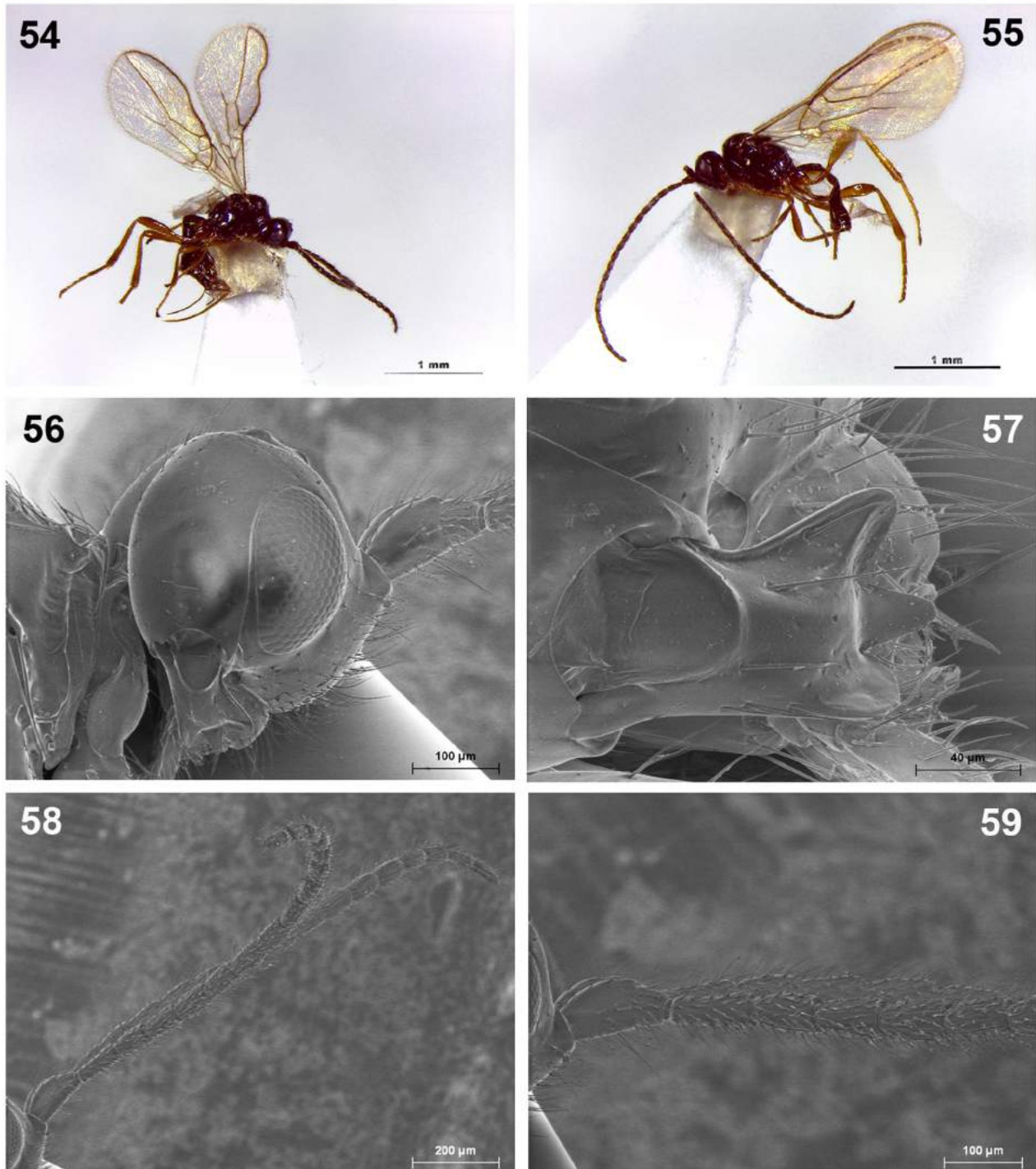
Diagnosis. This new species resembles *D. caesum* Tobias, *D. subtauricum* Tobias, *D. sauricum* Tobias and *D. incongruens* (Fischer). *Dinotrema fischerianum* sp. nov. differs from *D. caesum*, *D. subtauricum* and *D. sauricum* in having the ovipositor shorter than metasoma (longer than metasoma in other three species), mandible 1.70x as long as wide (1.30–1.50x in other three species), and sternaulus reaching with anterior and posterior parts of mesopleuron (not reaching in other three species). New species differs from *D. incongruens* in having the ovipositor shorter than metasoma (longer than metasoma in *D. incongruens*), mandible 1.70x as long as wide (1.35x in *D. incongruens*), middle tooth more pointed and low tooth more rounded (different condition in *D. incongruens*),

and sternaulus reaching with anterior and posterior parts of mesopleuron (not reaching posterior part of mesopleuron in *D. incongruens*).

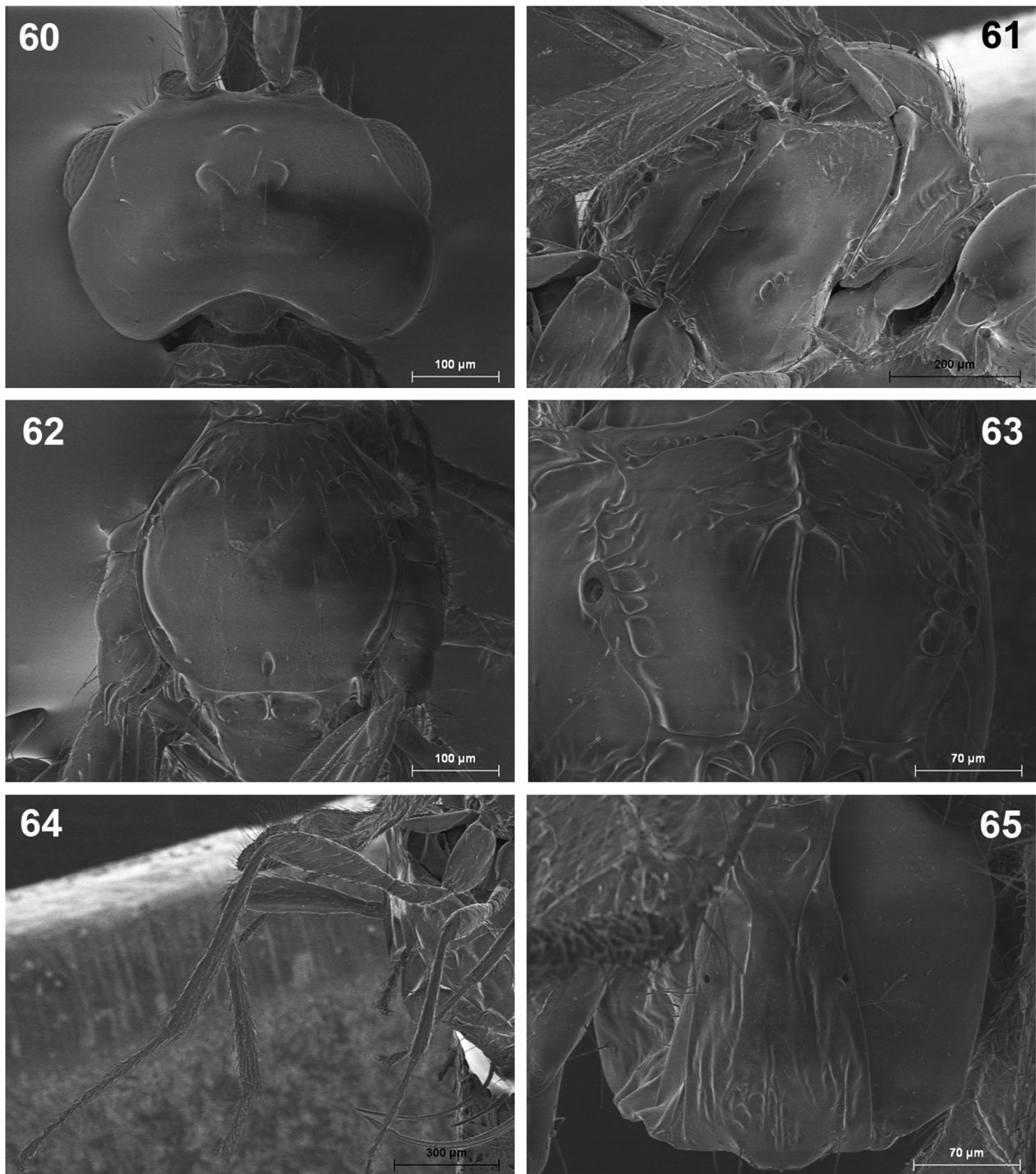
***Dinotrema munki* Peris-Felipo, sp. nov.**

(Figs 54–67)

Etymology. Named in honor Dr Thorkild Munk, Danish hymenopterist.



FIGURES 54–59. *Dinotrema munki* sp. nov. (54, 56–59, female; 55, male). 54. Habitus, in lateral view. 56. Head, lateral view. 57. Mandible. 58. Antenna. 59. Basal segments of antenna.



FIGURES 60–65. *Dinotrema munki* **sp. nov.** (female). 60. Head, dorsal view. 61. Mesosoma, lateral view. 62. Mesoscutum. 63. Propodeum. 64. Hind leg. 65. First metasomal tergite.

Type material. Holotype: female, Spain, Castellon Province, Pobra de Benifassà, Natural Park of Tinença de Benifassà, 15.010.2007 (F.J. Peris-Felipo leg.) (ENV). Paratype: 1 male, same label as in holotype, but 28.10.2004 (ENV).

Description. Female.

Head. In dorsal view, 1.90x as wide as median length, 1.45–1.50x as wide as mesoscutum, smooth, with rounded temples behind eyes. Eye in lateral view 1.80–1.85x as high as wide, 0.70–0.75x as wide as temple. POL 3.25–3.30x OD; OOL 3.30–3.35x OD. Face 0.65x as wide as high; inner margins of eyes subparallel. Clypeus

2.50x as wide as high, slightly curved ventrally. Paraclypeal fovea elongated, reaching middle distance between clypeus and eye. Mandible distinctly widened towards apex, 0.80–0.85x as long as its maximum width. Upper tooth large, weakly shorter than middle tooth. Middle tooth rather short, wide basally and pointed apically. Lower tooth rather long, rounded apically, not longer than upper tooth. Antennae thick, 17-segmented, shorter than body. Scape 1.90–1.95x as long as pedicel. First flagellar segment 2.35–2.40x as long as its apical width, 1.30–1.35x as long as second segment; second segment 1.60x as long as its maximum width. Third to fourteenth flagellar segments 2.00x and fifteenth segment 2.30x as long as their maximum width.

Mesosoma. In lateral view, 1.10–1.15x as long as high. Mesoscutum as long as maximum width, with two rows of single setae around trace of notauli. Notauli absent at most posterior part. Mesoscutal pit present, oval. Prescutellar depression smooth, with distinct median carina. Sternaulus (precoxal suture) present, short, far not reaching anterior and posterior parts of mesopleuron. Posterior mesopleural furrow entirely smooth. Propodeum mainly smooth, with median longitudinal carina crossing from anterior to posterior its margins, with transverse carinae emerging from median carina in its anterior half and not reaching propodeal edges. Propodeal spiracles relatively small.

Legs. Hind femur 3.90–4.00x as long as wide. Hind tibia weakly widened to apex, 9.90–10.00x as long as its maximum subapical width, 1.00–1.05x as long as hind tarsus. First segment of hind tarsus 1.60–1.65x as long as second segment.

Wings. Length of fore wing 2.30–2.40x its maximum width. Vein r₁ present but hyaline. Radial cell reaching to apex of wing, 4.15–4.20x as long as its maximum width. Nervulus distinctly postfurcal. Brachial cell closed, short, widened apically, about 2.80x as long as its maximum width. Hind wing 5.40–5.50x as long as its maximum width.

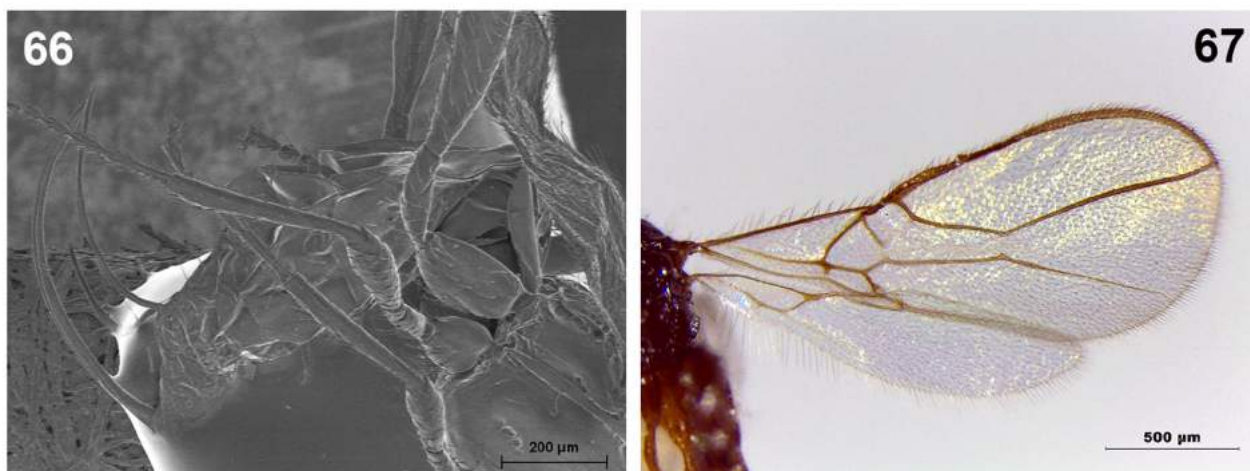
Metasoma. Distinctly compressed laterally. First tergite weakly widened towards apex, 1.90x as long as its apical width, rather distinctly striate in apical half. Ovipositor 2.80–3.00x as long as first tergite, shorter than metasoma, 1.45–1.50x as long as hind femur.

Colour. Body and legs brown to dark brown. Wings hyaline. Pterostigma brown.

Length. Body 1.95–2.00 mm; fore wing 2.00 mm.

Male. Body length 1.90 mm; fore wing length 2.15 mm. Antenna 22-segmented. First flagellar segment 3.10x as long as its maximum width. Middle flagellar segments about 2.00x as long its maximum width. Hind femur 3.85x as long as wide. Otherwise similar to female.

Diagnosis. This new species resembles *D. brevisulcus* Tobias and *D. puliciforme* (Fischer). *Dinotrema munki* sp. nov. differs from *D. brevisulcus* in having the mandible 0.80–0.85x as long as wide (1.10x in *D. brevisulcus*), and ovipositor distinctly shorter than metasoma (longer than metasoma in *D. brevisulcus*). On the other hand, *D. munki* differs from *D. puliciforme* in having the first flagellar segment 2.35–2.40x as long as its maximum width (4.00x in *D. puliciforme*), and mandible 0.80–0.85x as long as wide (1.60x in *D. puliciforme*).



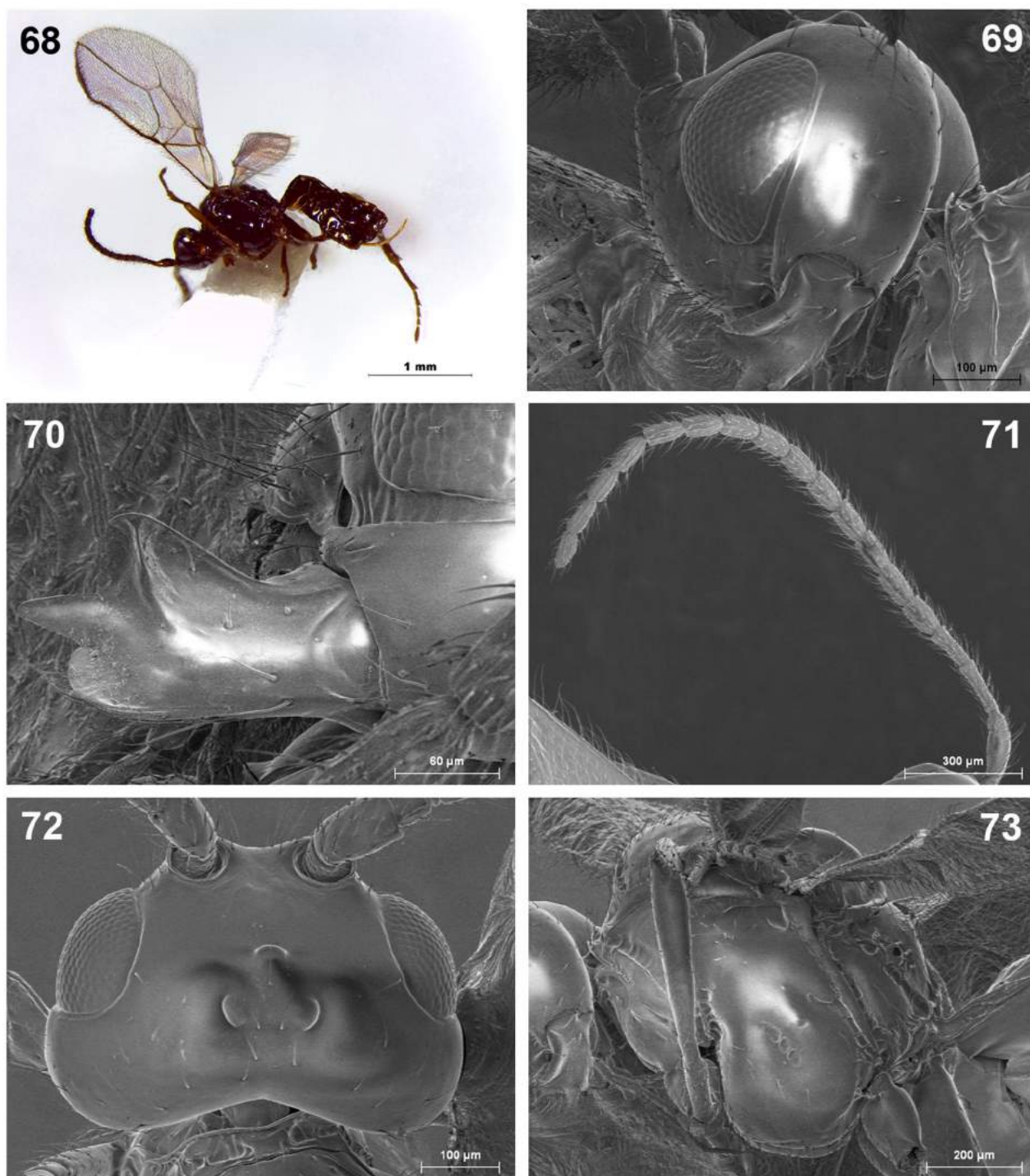
FIGURES 66–67. *Dinotrema munki* sp. nov. (female). 66. Metasoma and ovipositor. 67. Fore and hind wings.

***Dinotrema pappi* Peris-Felipo, sp. nov.**

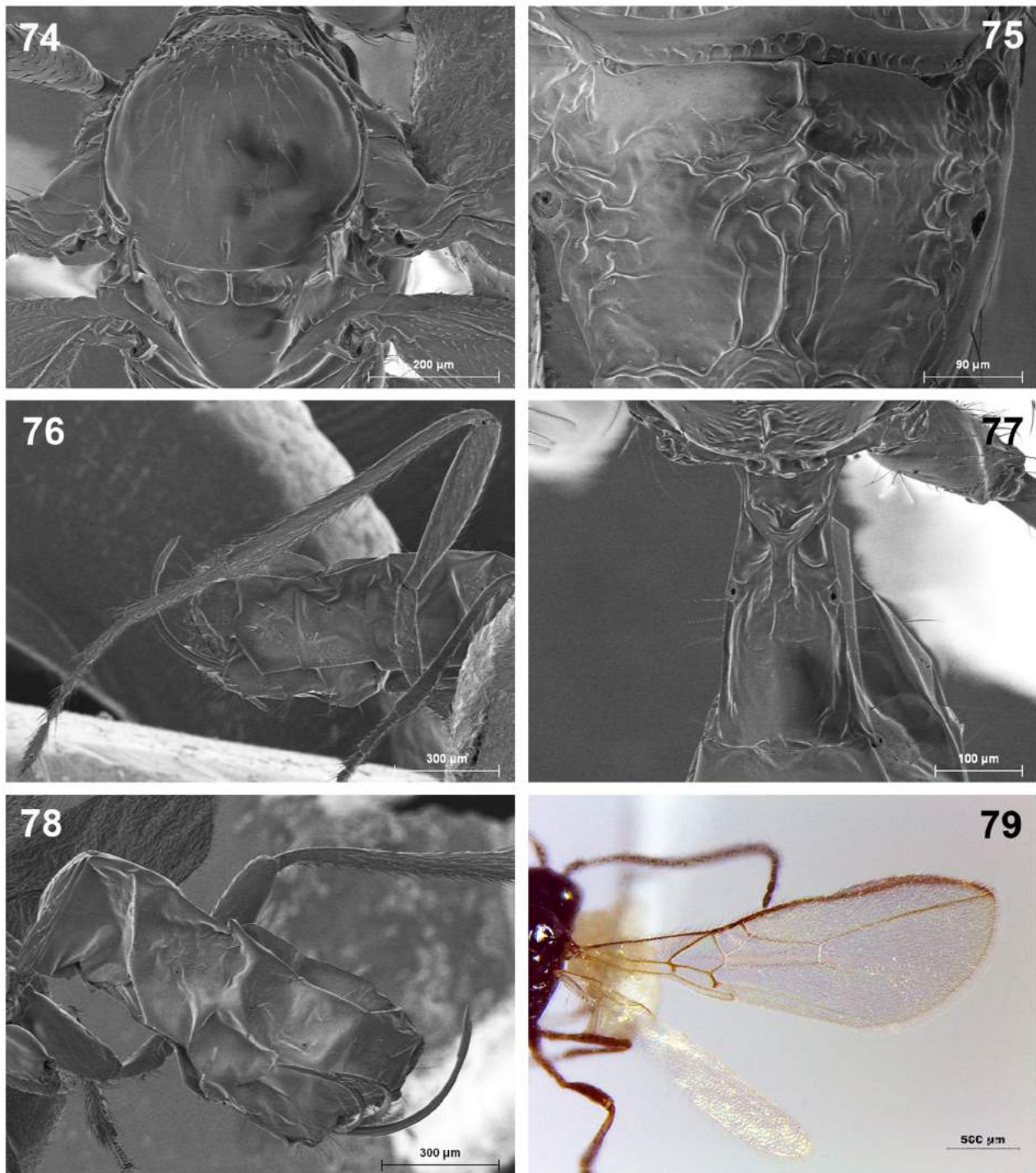
(Figs 68–79)

Etymology. Named in honor Dr Jěno Papp, well-known Hungarian hymenopterist for his great contribution to study of the World Braconidae.

Type material. Holotype: female, Spain, Alicante Province, Alcoi, Natural Park of Carrascal de la Font Roja, 02.01.2007 (F.J. Peris-Felipo leg.) (ENV). Paratype: 1 female, same label, but 13.01.2005 (ENV).



FIGURES 68–73. *Dinotrema pappi* sp. nov. (female) 68. Habitus, lateral view. 69. Head, lateral view. 70. Mandible. 71. Antenna. 72. Head, dorsal view. 73. Mesosoma, lateral view.



FIGURES 74–79. *Dinotrema pappi* sp. nov. (female). 74. Mesonotum. 75. Propodeum. 76. Hind leg. 77. First metasomal tergite. 78. Metasoma and ovipositor, lateral view. 79. Fore wing.

Description. Female.

Head. In dorsal view, 1.60x as wide as median length, 1.35–1.40x as wide as mesoscutum, smooth, with rounded temples behind eyes. Eye in lateral view 1.75x as high as wide, 1.20x as wide as temple. POL 2.80–2.85x OD; OOL 2.65–2.70x OD. Face 0.70x as wide as high; inner margins of eyes subparallel. Clypeus 2.50x as wide as high, slightly curved ventrally. Paraclypeal fovea elongate, reaching middle distance between clypeus and eye. Mandible distinctly widened towards apex, 1.35–1.40x as long as its maximum width. Upper tooth rather large, distinctly shorter than middle tooth, pointed apically. Middle tooth the longest, relatively narrow, pointed apically.

Lower tooth rounded, short, smaller than upper tooth. Antennae thick, 18-segmented, shorter than body. Scape 3.00x as long as pedicel. First flagellar segment 3.00x as long as its apical width, 1.20–1.25x as long as second segment; second segment 2.45–2.50x as long as its maximum width. Third to tenth flagellar segments 1.60–1.70x, eleven and twelve segment 1.90–2.00x, thirteenth – 2.20x, fourteenth – 2.00x, fifteenth – 2.10x, and sixteenth segment 2.00x as long as their maximum width.

Mesosoma. In lateral view, as long as high. Mesoscutum as long as maximum width with two rows of double setae around trace of notauli. Notauli absent at most posterior part. Mesoscutal pit present, elongate. Prescutellar depression smooth, with distinct median carina. Sternaulus (precoxal suture) present, short, far not reaching anterior and posterior parts of mesopleuron. Posterior mesopleural furrow crenulate in lower half. Propodeum narrowly smooth, with median longitudinal carina crossing from anterior to posterior its margins, with numerous transverse carinae emerging from median carina and not reaching the propodeal edges. Propodeal spiracles relatively small.

Legs. Hind femur 4.90–5.00x as long as wide. Hind tibia weakly widened to apex, 12.30x as long as its maximum subapical width, 1.00–1.05x as long as hind tarsus. First segment of hind tarsus 2.00x as long as second segment.

Wings. Length of fore wing 2.85–2.90x its maximum width. Vein r₁ present. Radial cell reaching to apex of wing, 6.10–6.15x as long as its maximum width. Nervulus distinctly postfurcal. Brachial cell closed, rather long, widened apically, 3.20x as long as its maximum width. Hind wing 6.50x as long as its maximum width.

Metasoma. Distinctly compressed laterally. First tergite weakly widened towards apex, 2.00x as long as its apical width, almost entirely smooth in apical half. Ovipositor 1.50–1.55x as long as first tergite, distinctly shorter than metasoma, 0.90–0.95x as long as hind femur.

Colour. Body and legs brown to dark brown. Wings hyaline. Pterostigma brown.

Length. Body 2.25–2.30 mm; fore wing 3.00 mm.

Male. Unknown.

Diagnosis. This new species resembles *D. significarium* (Fischer), but differs from it in having the mandible 1.35–1.40x as long as wide (only 1.20x in *D. significarium*), low tooth smaller than upper tooth (larger in *D. significarium*), middle tooth narrow (wide in *D. significarium*), hind femur 4.90–5.00x as long as its maximum width (4.00x in *D. significarium*), first flagellar segment 3.00x as long as wide (3.80–4.00x in *D. significarium*), and first metasomal tergite without carinae in apical half (with two distinct carinae in *D. significarium*).

Acknowledgements

We wish to thank the staff of Natural Park of Carrascal de La Font Roja, and Natural Park of La Tinença de Benifassà for their help during this study. Also, we are thankful all of those who have offered their support, time and advice. This work was funded by the research project CGL-2004-02711 and co-funded by the Ministry of Science and Technology and the European Union (European Regional Development Fund). The present work was supported for the second author by Ministry of Education of Spain with mobility stays for foreign researchers (SAB 2010-0113) and in parts by the Russian Foundation for Basic Research (grant No. 10-04-00265).

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