

Dasypoda (Megadasypoda) intermedia spec. nov. (Hymenoptera: Apoidea: Melittidae), a new species from Iran

D. Michez

Michez, D. *Dasypoda (Megadasypoda) intermedia* spec. nov. (Hymenoptera: Apoidea: Melittidae), a new species from Iran.

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Denis Michez, University of Mons-Hainaut, Laboratory of Zoology, Avenue Maistriau 19, 7000 Mons, Belgium (e-mail: denis.michez@umh.ac.be).

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Dasypoda intermedia spec. nov. from Iran is described. Its description fills a gap of our knowledge of the East Mediterranean fauna of the genus *Dasypoda*. The West Mediterranean *Dasypoda* species are well known but the eastern species lack convincing records. Moreover, *D. intermedia* spec. nov. is a very interesting species from a phylogenetic point of view. It shares some characters common to subgenera *Dasypoda* s. str. and *Megadasypoda* Michez, 2004, which provide further evidence for the close relationship of both subgenera.

Introduction

The genus *Dasypoda* Latreille, 1802 is one of the 14 genera included in the family (or subfamily) Melittidae Schenck, 1859 (Michener, 1981, 2000). The genus is characterized by the presence of only two submarginal cells of the fore wing and by a well-developed scopa of female hind leg. *Dasypoda* encompasses 33 species including *D. intermedia* spec. nov. Michez *et al.* (2004c) recognize four subgenera: *Microdasypoda* Michez, 2004, *Heterodasypoda* Michez, 2004, *Dasypoda* Latreille 1802, and *Megadasypoda* Michez, 2004. These four taxa are mainly characterized by their tongue/mouthparts morphology, the genital structures and the shape of the last terga of the males.

Dasypoda species are exclusively solitary ground-nesting bees. All species are Palearctic but most of them occur in the western part, particularly around the Mediterranean basin (Michez *et al.*, 2004b). Numerous authors studied the West-Mediterranean *Dasypoda*: Saunders (1881), Radoszkowski (1887), Schletterer (1890), Pérez (1890, 1895), Quilis (1928), Ceballos (1956), Herrero & Pérez-Íñigo (1983), Michez *et al.* (2003, 2004a), Ornos & Martínez (1995, 1996) and Ornos & Ortiz-Sánchez (1998a, 1998b, 2003, 2004). On the contrary, the East-Mediterranean *Dasypoda* are poorly known. Baker (2002), Michez (2002), Michez *et al.* (2004b) described some new species from this region: *D. gusenleitneri* Michez, 2004, *D. litigator* Baker, 2002, *D. patinyi* Michez, 2002, *D. syriensis* Michez, 2004, *D. toroki* Michez, 2004, and *D. warnckeii* Michez, 2004. The description of *D. intermedia* spec. nov. fills a gap of our knowledge of the east-Mediterranean fauna of *Dasypoda*.

Material and terminology

D. intermedia spec. nov. is known of only one specimen but the study of numerous specimens of *Dasypoda* has been made for a recent revision of the genus (Michez *et al.*, 2004a, b). RMNH stands for Nationaal Natuurhistorisch Museum, Leiden, Netherlands.

For the terminology, see Michener (1981, 2000). The distribution map of the subgenus (fig. 5) is based on the maps presented by Michez *et al.* (2004c).

Results

Dasygoda (*Megadasygoda*) *intermedia* Michez spec. nov.

Material.— Holotype, ♂ (RMNH): "Iran, Hamadan, Araj, 2000-2500 m, 27-28.vii.1975, W.L. Blom".

Etymology.— Named "*intermedia*" because the new species shows some characters of two subgenera: *Dasygoda* s. str. and *Megadasygoda* (table 1).

Diagnosis.— Male: entire body with reddish-white setae. Galea with dull external side, strong and sparse punctured. Ratio of maxillary palpus and galea lengths ranging from 0.50-0.75. Malar area shorter than pedicel of antenna. Third antennal segment longer than the fourth segment. Nervulus antefurcal. Sternum 7 medially U-emarginated, with two long and sclerotized latero-apical process (fig. 1). Sternum 8 without basal hook (fig. 2); apex truncated; two latero-apical processes on ventral face. Penis valve tapered (0.6 mm) (fig. 3). Gonostyli with three lobes (figs 3, 4). Female: unknown.

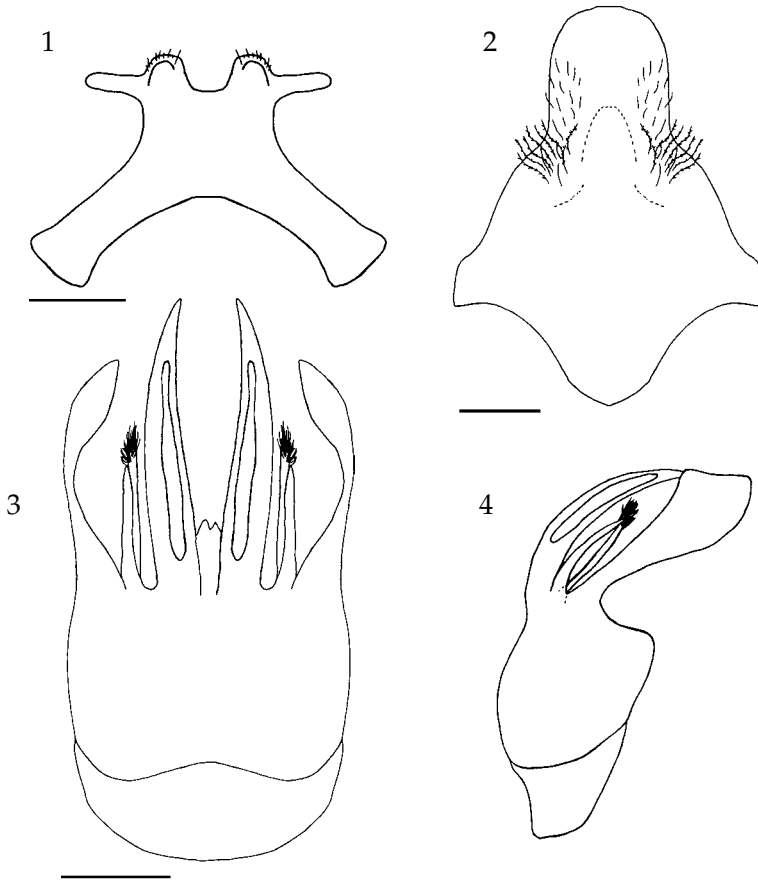
Differential diagnosis: see table 1.

Table 1. Differential diagnosis between *D. intermedia* spec. nov. and both subgenera *Dasygoda* and *Megadasygoda*.

Characters	Subgenus <i>Dasygoda</i> s. str.	<i>D. intermedia</i> spec. nov.	Subgenus <i>Megadasygoda</i>
Malar area	Shorter than pedicel	Shorter than pedicel	Longer than pedicel
Ratio of maxillary	Between 0.5 and 0.75	Between 0.5 and 0.75	Less than 0.5 palpus and galea lengths
Apex of sternum 7	With two long and sclerotized latero-apical process	With two long and sclerotized latero-apical process	With two latero-apical spines
Sternum 8	With basal hook	Without basal hook	Without basal hook
Gonostyli	With two linked lobes	With three independent lobes	With three independent lobes

Description.— Male. Length (vertex-tergum 7): 15 mm. Head. Cuticle black, except the ventral side of antenna reddish. Glossa sharp, shorter than galea. Galea with dull external side, strong and sparse punctured. Maxillary palpus/galea lengths 0.50-0.75. Ratio of maxillary palpus and galea lengths comprised 0.50-0.75. Malar area shorter than pedicel of antenna. Labrum smooth and glossy, semi-circular. Clypeus, face and vertex densely punctured, dull. Ocellar area with scattered punctures. Cuticle weakly smooth and glossy. Inner margins of eyes convergent. Third antennal segment longer than fourth segment. Antennal segments 4-13 subequal. Face and vertex with reddish-white flattened setae. Outer margin of labrum and galea glabrous.

Mesosoma. Black. Pronotum, scutum, scutellum, metanotum and basal area of propodeum completely punctate, dull between punctures. Tegula yellow and transparent. Propodeal triangle weakly dull and chagreened. Thorax with erect reddish-white hairs. Propodeal triangle glabrous.



Figs. 1-4: *Dasypoda intermedia* spec. nov. 1, sternum 7 ♂ (scale = 0.5 mm); 2, sternum 8 ♂ (scale = 0.5 mm); 3-4, genitalia dorsal and facial view (scale = 0.5 mm).

Legs. Black from coxa to basitarsus; remaining tarsal segments brownish. Tibia without teeth. Pilosity reddish-white.

Wings. Nervulus antefurcal.

Metasoma. Terga and sterna with black disc and brownish marginal zone. Disc of terga and sterna with setiferous punctures. Terga and sterna with marginal zone smooth and glossy. Apex of terga straight. Sterna 1-4 apex straight. Sternum 5 with shallow median emargination. Sternum 6 flat, with shallow median emargination. Sternum 7 medially U-emarginated, with two long and sclerotized latero-apical processes (fig. 1). Sternum 8 without basal hook (fig. 2); with truncate apex; with two latero-apical processes on ventral face. Disc of terga with erected reddish-white hairs. Terga with continuous apical band. Disc of sterna 1-3 with long reddish-white hair. Disc of sterna 4-5 with short reddish-white hair. Sterna 1-5 with continuous reddish-white apical bands. Sternum 6 with hairless disc and continuous reddish-white apical band. Sternum 7 hairless.

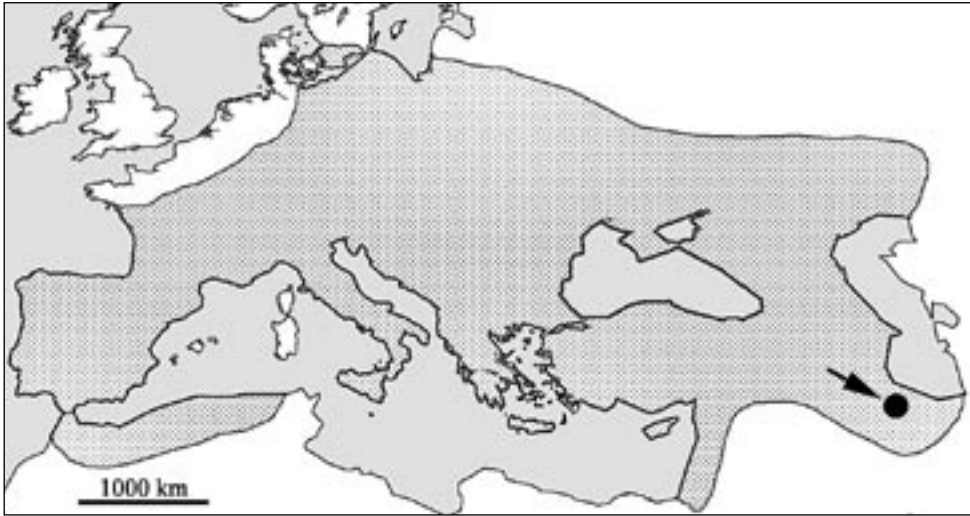


Fig. 5. Global distribution of the subgenus *Megadasypoda* and localisation of the locus typicus of *D. intermedia* spec. nov.

Genitalia (figs. 3, 4). Penis valve tapered (0.6 mm) (fig. 4). Gonostyli with three lobes (figs. 3, 4). Female: unknown.

Discussion

D. intermedia spec. nov. is included in the subgenus *Megadasypoda* on basis of the structure of its genitalia (see diagnosis). This kind of character is generally regarded as the most important to recognise subgenera of Apoidea (Michez *et al.*, 2004c).

D. intermedia spec. nov. is particularly interesting from a phylogenetic point of view. It shares apomorphies with the subgenus *Dasypoda* s. str. (shape of the 7th sternite and of the tongue) as well as the subgenus *Megadasypoda* (shape of the 8th sternite and the genitalia) (table 1). Consequently, this species confirms the affinity between *Dasypoda* s. str. and *Megadasypoda*, what is underlined by the cladistic study of Michez *et al.* (2004c). The distinction of the two subgenera is still relevant on the basis of the genital structure.

From a geographic point of view, the type locality of *D. intermedia* spec. nov. is positioned on the eastern limit of the distribution of the subgenus (fig. 5).

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References

- Baker, D.B., 2002. A provisional annotated list of the nominal taxa assigned to the genus *Dasygoda* Latreille, 1802, with the description of an additional species (Hymenoptera, Apoidea, Melittidae).— *Deutsche entomologisch Zeitschrift* 49: 89-103.
- Ceballos, G., 1956. Catálogo de los Himenópteros de España: 1-554.— Madrid.
- Michener, C.D., 1981. Classification of the bee family Melittidae with a review of species of Meganomiinae.— *Contributions of the American Entomological Institute* 18: 1-135.
- Michener, C. D., 2000. The bees of the world: i-iv + 1-913.— Baltimore.
- Michez, D., 2002. *Dasygoda patinyi* sp. nov. (Hymenoptera, Apoidea, Melittidae), espèce nouvelle récoltée en Syrie.— *Linzer biologische Beiträge* 34: 737-742.
- Michez D., S. Patiny & C. Gaspar, 2003. *Dasygoda albimana* Pérez, 1905 (Hymenoptera, Apoidea, Melittidae), espèce nouvelle pour la France et le Maroc.— *Bulletin de la Société entomologique de France* 108: 61-64.
- Michez, D., S. Patiny, & S. Iserbyt, 2004a. Apoidea remarquables observés dans les Pyrénées-Orientales, France (Hymenoptera, Melittidae).— *Bulletin de la Société entomologique de France* 109: 379-382.
- Michez, D., M. Terzo, & P. Rasmont, 2004b. Révision des espèces ouest-paléarctiques du genre *Dasygoda* Latreille 1802 (Hymenoptera, Apoidea, Melittidae).— *Linzer biologische Beiträge* 36: 847-900.
- Michez, D., M. Terzo, & P. Rasmont, 2004c. Phylogénie, biogéographie et choix floraux des abeilles oligolectiques du genre *Dasygoda* Latreille 1802 (Hymenoptera, Apoidea, Melittidae).— *Annales de la Société entomologique de France* 40: in press.
- Ornosa C. & M.D. Martínez, 1995. Apoidea de Extremadura (Oeste de España) II. Fams. Melittidae y Megachilidae (Hymenoptera).— *Boletín de la Asociación Española de Entomología* 19: 267-279.
- Ornosa C. & M.D. Martínez, 1996. Apoidea de la Cuenca Occidental Alta del Duero (España). Familias Melittidae, Megachilidae y Apidae (Hymenoptera).— *Boletín de la Asociación española de Entomología* 20: 93-106.
- Ornosa C. & F.J. Ortiz-Sánchez, 1998a. Contribución al conocimiento de los melítidos ibéricos (Hymenoptera, Apoidea, Melittidae).— *Boletín de la asociación española de Entomología* 22: 181-202.
- Ornosa C. & F.J. Ortiz-Sánchez, 1998b. Nuevos datos sobre la hembra de *Dasygoda albimana* Pérez, 1905, y *Dasygoda dusmeti niveocincta* Noskiewicz, 1959 syn. nov. (Hymenoptera, Apoidea, Melittidae).— *Zoologica Baetica* 9: 131-138.
- Ornosa C. & F.J. Ortiz-Sánchez, 2003. Claves de identificación para las especies ibéricas de Melittidae (Hymenoptera, Apoidea).— *Linzer biologische Beiträge* 35: 555-579.
- Pérez J., 1890. Catalogue des mellifères du Sud-Ouest.— *Actes de la Société linnéenne de Bordeaux* 44: 1-200.
- Pérez J., 1895. Espèces nouvelles de Mellifères de Barbarie (diagnose préliminaire): 1-64.— *Bordeaux*.
- Quilis M., 1928. Estudio monográfico de las *Dasygoda* Latr.— *EOS* 4: 173-241.
- Saunders E., 1881. Notes on the Entomology of Portugal. VI. Hymenoptera Aculeata, collected by the Rev. A.E. Eaton in 1880.— *Entomologist's Monthly Magazine* 18: 165-171.

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