

Linzer biol. Beitr.	50/2	1249-1254	17.12.2018
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**Description of a new bee species from Spain, *Colletes jansmiti*  
KUHLMANN nov.sp., with a key to the females of the *C.*  
*albomaculatus*-group (Hymenoptera: Colletidae)**

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**Abstract:** An unusual new bee species of the genus *Colletes* LATREILLE, 1802 from Spain is described: *Colletes jansmiti* KUHLMANN nov.sp. ♀. A key to the females of all five species of the *C. albomaculatus* species-group is presented.

**Key words:** *Colletes*, new species, Spain.

### Introduction

The Iberian Peninsula has a remarkably rich bee fauna of almost 1,200 species, including many endemics (BALDOCK et al. 2018, KUHLMANN et al. 2018). Although the study of bees in Spain (CEBALLOS 1956) and more recently Portugal (BALDOCK et al. 2018) have a long tradition, new species are frequently discovered, indicating that the orographically and climatically very diverse southwest of Europe has still much to offer to entomologists. Examples for recently described Iberian bees include *Camptopoeum baldocki* WOOD & CROSS (WOOD & CROSS 2017), *Colletes dinizi* KUHLMANN (ORTIZ-SÁNCHEZ et al. 2001), *Dasygaster michezi* RADCHENKO (RADCHENKO 2017), *Hoplitis occidentalis* MÜLLER, *Hoplitis peniculifera* MÜLLER, *Hoplitis hilbera* MÜLLER, *Hoplitis lithodorae* MÜLLER, *Hoplitis manuelae* MÜLLER (MÜLLER 2012), *Nomada gredosiana* SCHWARZ & GUSENLEITNER, *Nomada mandibularis* SCHWARZ & GUSENLEITNER, *Nomada kriegsteini* SCHWARZ & GUSENLEITNER, *Nomada cadiza* SCHWARZ & GUSENLEITNER (SCHWARZ & GUSENLEITNER 2013), *Nomada elsei* SCHWARZ & SMIT and *Nomada smiti* SCHWARZ (SMIT 2018).

This contribution is part of an attempt to completely document the *Colletes* species of the Palearctic Region. Here we describe an unusual new bee of the *Colletes albomaculatus* species-group that comprises four taxa: *C. albomaculatus* (LUCAS), *C. alfkeni* NOSKIEWICZ, *C. dorsalis* MORAWITZ and *C. punctatus* MOCSARY. The new species is closely related to *C. alfkeni* and *C. punctatus* with the latter being a specialist flower visitor (narrowly oligolectic) of *Nigella* (Ranunculaceae) (MÜLLER & KUHLMANN 2008). Observations suggest that both species and the one described here presumably are oligolectes on *Nigella*. Although only a single female specimen is known so far, we decided to describe the new species because the morphology of the species is very characteristic and its discovery is remarkable from a biogeographical perspective. The new species represents the by far westernmost record of the three closely related species with *C. alfkeni* only known from Turkey, Syria and Israel while the western range

margin of *C. punctatus* is along the Balkan Peninsula, eastern Austria and eastern Czech Republic, about 2,000 km east of the collecting site.

To enable the identification of this new species and to facilitate the discovery of the unknown male a key to the females of the five species of the *C. albomaculatus* species-group is provided.

## Material and Methods

Terminology as well as measurements used in the descriptions follows those of MICHENER (2007). Puncture density is expressed as the relationship between puncture diameter ( $d$ ) and the space between them ( $i$ ), such as  $i = 1.5d$  or  $i < d$ . T is used as abbreviation of metasomal tergum. Body length is measured from the vertex to the apex of the metasoma. The definition of species groups in *Colletes* follows NOSKIEWICZ (1936) and KUHLMANN et al. (2009).

## Description of the new species

### *Colletes jansmiti* KUHLMANN nov.sp.

**D i a g n o s i s :** *Colletes jansmiti* belongs to the *Colletes albomaculatus* species-group that is characterized by a combination of punctate tegulae and a medially raised, conspicuously convex metanotum that has an apical drop almost overhanging the horizontal part of the propodeum (Fig. 10). From related species of this group it can be separated by the characters given in the key below.

### D e s c r i p t i o n

**F e m a l e :** Body length: 11.0 mm. Head slightly wider than long (Fig. 1). Integument black, mandible apically dark reddish-brown. Face sparsely covered with moderately long greyish, erect hair, on vertex hair short (Fig. 1). Clypeus strongly convex, with a very shallow longitudinal median depression, supraclypeal area almost triangular, large and convex in profile. Clypeus relatively finely, regularly and densely punctate ( $i = 0.5-1.0d$ ); surface between punctures smooth and shiny, inconspicuous pair of apical clypeal depressions (Fig. 1). Malar area medially narrow, about 1/4 as long as width of mandible base, finely striate and matt. Antenna black. Scutum coarsely and densely punctate ( $i < 0.5d$ ), on the disc slightly coarser and more dispersed, between punctures smooth and shiny (Fig. 8). Scutellum anteriomedially small triangular area impunctate, smooth and shiny; rest of scutellum densely and coarsely punctate ( $i < 0.5d$ ) (Fig. 8). Thorax sparsely covered with short greyish hair (Figs 7, 8). Wings fuscous, venation blackish-brown (Fig. 7). Legs black, vestiture whitish, scopa white (Fig. 7). Integument of metasoma black, apical tergal depressions translucent dark reddish-brown (Figs 2, 9). Terga apparently glabrous, just apical depressions with short appressed white hair forming apical hair bands (Figs 2, 9). However, the specimen is worn so it is difficult to get a correct impression of its vestiture. Terga apically distinctly depressed, depression slightly superficially shagreened and finely punctate (Fig. 2). Terga very densely ( $i < 0.5d$ ) and relatively coarsely punctate, between punctures smooth and shiny (Fig. 2). No apical sternal hair bands but instead some long, erect ciliae.

Male: Unknown.

Type material: (1 specimen). Holotype: ♀ "España, Andalusia, Ronda la Vieja, N36°50'06'' W05°10'50'', 12-6-2017, leg. J. & I. Smit" (Coll. Kuhlmann, Zoological Museum of Kiel University).

Etymology: The species is dedicated to my friend and co-author Jan Smit who collected the only known specimen of this bee.

General distribution: Only known from the type locality (Fig. 11) in Spain.

Floral hosts: Unknown.

### Key to the females of the *Colletes albomaculatus* species-group

Females of this species-group are easily recognized from all other Palaearctic *Colletes* by a combination of punctate tegulae and a medially raised and conspicuously convex metanotum that has an apical drop almost overhanging the horizontal part of the propodeum (Fig. 10). *Colletes nasutus* SMITH might be placed here too, but has a distinctly elongate face (genae about 2 times longer than width of base of mandibles) that is very different from the more round or oval head shapes of the other species (e.g. Figs 1, 3, 5).

- 1 Punctuation of vertex between lateral ocellus and eye sparse and more dispersed ( $i = 1-2d$ ), between punctures polished and shiny; apical margin of T1 slightly and gently depressed.....2
- Punctuation of vertex between lateral ocellus and eye very dense ( $i < 0.5d$ ), punctures touching each other; apical margin of T1 sharply truncate and deeply depressed (Figs 2, 4, 6).....3
- 2 Facial fovea broader than width of antenna; disc of T1 very coarsely and densely punctate ( $i = 0.5d$ ), punctures on apical margin of T1 much finer, only about 1/10 of the size on disc .....*C. dorsalis* MORAWITZ
- Facial fovea narrow, less than half the width of antenna; punctuation of disc of T1 much finer and more dispersed ( $i = 1-2d$ ), punctures on apical margin of T1 more similar in size, about 1/3 to 1/4 of the size on disc.....*C. albomaculatus* (LUCAS)
- 3 Apical depression of T1 narrow, about the width of the antenna, punctuation on disc of T1 very coarse (Fig. 4); head as in Fig. 3.....*C. punctatus* MOCSARY
- Apical depression of T1 broader, slightly wider than width of the antenna, punctuation on disc of T1 finer (Figs 2, 6).....4
- 4 Apical depression of T1 polished and shiny, without punctures, punctuation on disc of T1 more dispersed ( $i = 0.5-1d$ ), shiny between punctures (Fig. 6); head broader than long (Fig. 5).....*C. alfkeni* NOSKIEWICZ
- Apical depression of T1 slightly shagreened, with very fine and dispersed punctuation, punctuation on disc of T1 very dense ( $i < 0.5d$ ), matt (Fig. 2); head longer (Fig. 1) .....*C. jansmiti* nov.sp.

### Zusammenfassung

Eine ungewöhnliche neue Bienenart der Gattung *Colletes* LATREILLE, 1802 wird aus Spanien beschrieben: *Colletes jansmiti* KUHLMANN nov.sp. ♀. Eine Bestimmungstabelle der Weibchen für alle fünf Arten der *C. albomaculatus* Artengruppe wird vorgelegt.

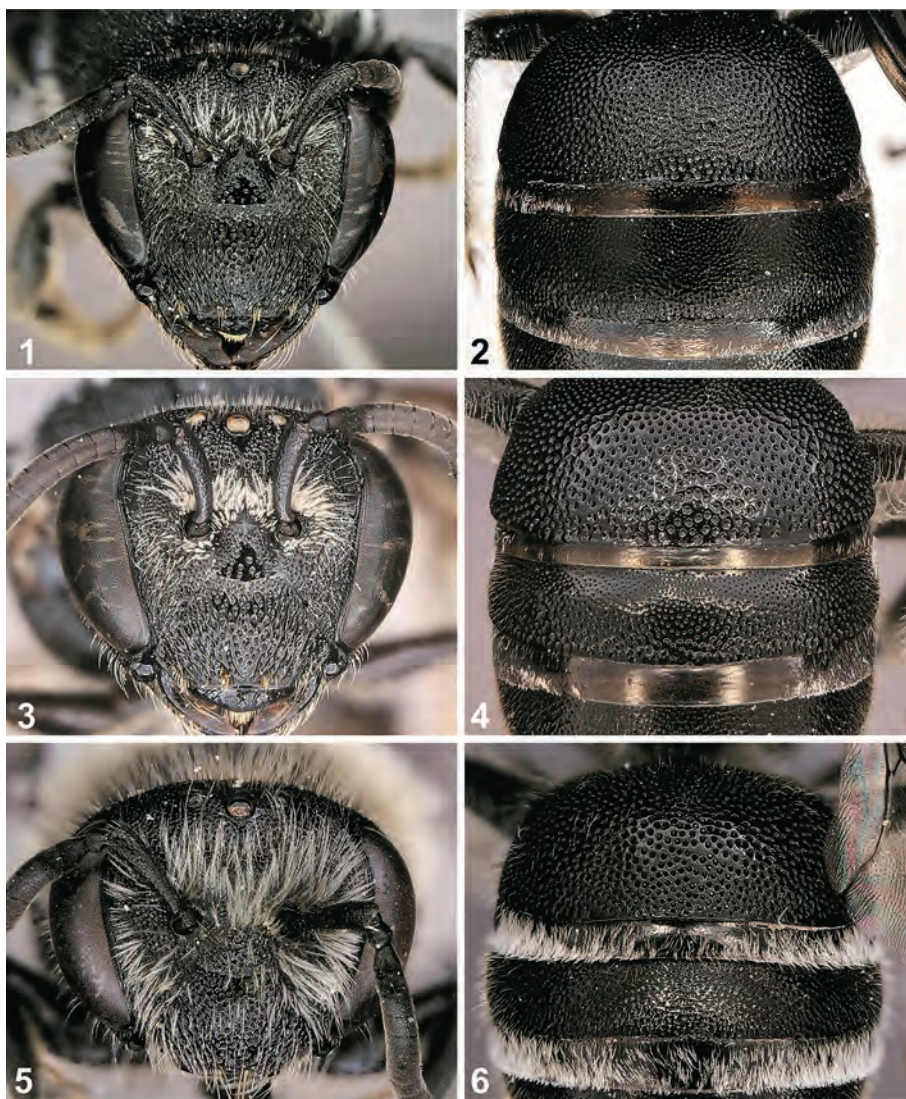
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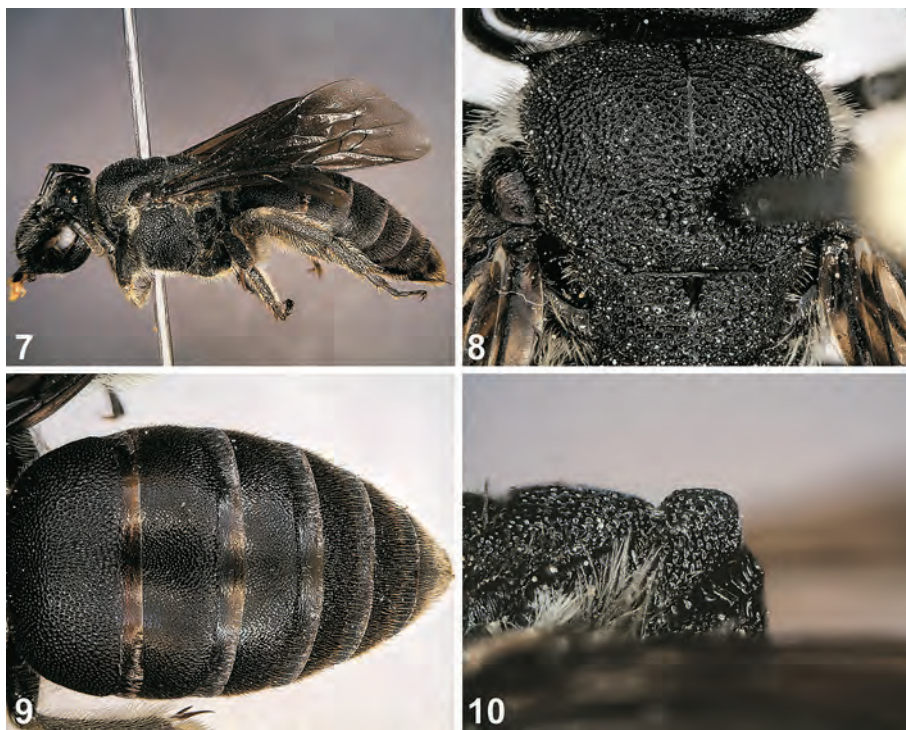
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**Figs 1-6:** *Colletes jansmiti* nov.sp. (1) head; (2) metasomal terga T1-T2; *C. punctatus* MOCSARY (3) head; (4) metasomal terga T1-T2; *Colletes alfkeni* NOSKIEWICZ (5) head; (6) metasomal terga T1-T2.



**Figs 7-10:** *Colletes jansmiti* nov.sp. (7) habitus; (8) pronotum with lateral spines, scutum and scutellum; (9) metasomal terga; *C. punctatus* MOCSARY (10) metanotum and propodeum in lateral view.



**Fig. 11:** Type locality of *Colletes jansmiti* nov.sp. (pool) with surrounding habitat.

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Autor(en)/Author(s): Kuhlmann Michael, Smit Jan

Artikel/Article: [Description of a new bee species from Spain, \*Colletes jansmiti\* KUHLMANN nov.sp., with a key to the females of the \*C. albomaculatus\*-group \(Hymenoptera: Colletidae\) 1249-1254](#)