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Description of the male of *Colletes jansmiti* KUHLMANN, 2018, a bee species endemic to Spain (Hymenoptera, Colletidae)

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A b s t r a c t : The hitherto unknown male of the rare bee species *Colletes jansmiti* KUHLMANN, 2018 is described. The species is endemic to Spain and belongs to the *C. albomaculatus* species-group. A key to the males of the five species of this group is provided.

Key words : *Colletes*, solitary bee, taxonomy, Spain.

Introduction

The morphologically characteristic bee *Colletes jansmiti* KUHLMANN was described recently based on a single female specimen collected in Andalusia, southern Spain (KUHLMANN & SMIT 2018). The previously unknown male of the species was found in unstudied collection material of the Naturalis Biodiversity Center, Leiden (Netherlands), that was sent to the author for identification. Like the female of the species the male was collected in Andalusia. The morphology of the male confirms the close relationship of *C. jansmiti* with *C. alfkeni* NOSKIEWICZ and *C. punctatus* MOCSARY. Here, the male of *C. jansmiti* is described and a key to the males 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 and S for a metasomal sternum. Body length is measured from the vertex to the apex of the metasoma.

Images were taken with the Digital Microscope Keyence VHX-5000 (Keyence Deutschland GmbH, Neu-Isenburg, Germany) using the VH-Z20R/Z20T (20x to 200x) zoom lens and the OP-42305 super diffused illumination adapter. Photoshop elements (Adobe Systems Software Ireland Limited, Dublin, Republic of Ireland) was used for image processing.

Missing coordinates on the original specimen labels were identified using Google Earth (Google Earth Pro© 2021, version 7.3.4.8248) and added in square brackets (e.g. [32°50' S, 18°40' E]).

Description of the male

Colletes jansmiti KUHLMANN, 2018 (Figs 1-2, 7-10)

Colletes jansmiti KUHLMANN, 2018 — KUHLMANN & SMIT (2018): 1250-1251, 1253-1254.

Holotype: ♀ (Ronda la Vieja, Spain) (research collection of M. Kuhlmann, Zoological Museum of Kiel University, Kiel, Germany).

Additional material examined: Spain: 1♂, "Archidona (Mal) E. [37°05' N, 4°23' W], 31-5-1983, Leg. H. Teunissen" (Coll. Naturalis Biodiversity Center, Leiden, Netherlands).

The hitherto unknown male of *C. jansmiti* is here described for the first time.

Diagnosis: *Colletes jansmiti* differs from the other species of the *C. albomaculatus* species-group by the following character combination (see also key to males below): Punctuation on disc of T1 fine and very dense ($i < 0.5d$), apical margin sharply truncate and deeply depressed, depression slightly narrower than the width of the antenna (Fig. 1), size and shape of S7 (Fig. 2).

Description: Male: Body length: 12.0 mm (Habitus Fig. 7). Head slightly wider than long (Fig. 8). Integument black, mandible apically dark reddish-brown. Face densely covered with moderately long yellowish-grey, erect hair (Fig. 8). Clypeus convex, relatively finely, regularly and densely punctate ($i = 0.5-1.0d$); surface between punctures smooth and shiny, inconspicuous pair of apical clypeal depressions (Fig. 8). 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. Scutellum almost flat, densely and coarsely punctate ($i < 0.5d$). Mesosoma densely covered with short yellowish-grey hair (Fig. 7). Wings fuscous, venation blackish-brown (Fig. 7). Legs black, tarsi partly dark reddish-brown, vestiture whitish. Integument of metasoma black to partly very dark reddish-black, apical tergal depressions translucent brown (Fig. 9). Terga sparsely covered with short erect hair, on T1-T2 greyish, from T3 successively darker brown; apical depressions with short appressed white hair forming narrow apical hair bands (Figs 1, 9). Terga apically distinctly depressed, depression smooth and shiny. Terga very densely ($i < 0.5d$) and relatively coarsely punctate, between punctures smooth and shiny (Figs 1, 9). S2-S4 with very narrow but distinct apical hair band. Gonostylus (Fig. 10) and S7 (Fig. 2) as illustrated.

General distribution: So far, the species has only been found at two sites in southern Spain.

Key to the males of the *Colletes albomaculatus* species-group

Species of the *C. albomaculatus* species-group are easily distinguishable 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 (KUHLMANN & SMIT 2018, Fig. 10). *Colletes nasutus* SMITH can be placed in this species-group, 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.

- 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 depressed2
- 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 1, 3, 5)3
- 2 Mesosoma dorsally with a broad transversal band of black hair covering the posterior part of the scutum and the anterior part of the scutellum; gonostylus very short, at the base wider than long *C. dorsalis* MORAWITZ
- Mesosoma dorsally without black hairs; gonostylus long, at the base more than twice as long as wide *C. albomaculatus* (LUCAS)
- 3 Apical depression of T1 broader, slightly wider than width of the antenna (Fig. 5), S7 narrower and squarish (Fig. 6) *C. alfkeni* NOSKIEWICZ
- Apical depression of T1 narrow, slightly narrower than the width of the antenna (Figs 1, 3), S7 broader and of different shape (Figs 2, 4)4
- 4 Punctuation on disc of T1 coarser and slightly more dispersed ($i = 0.5-1d$) (Fig. 3), S7 smaller (Fig. 4) *C. punctatus* MOCSARY
- Punctuation on disc of T1 finer and very dense ($i < 0.5d$) (Fig. 1), S7 larger (Fig. 2) *C. jansmiti* KUHLMANN

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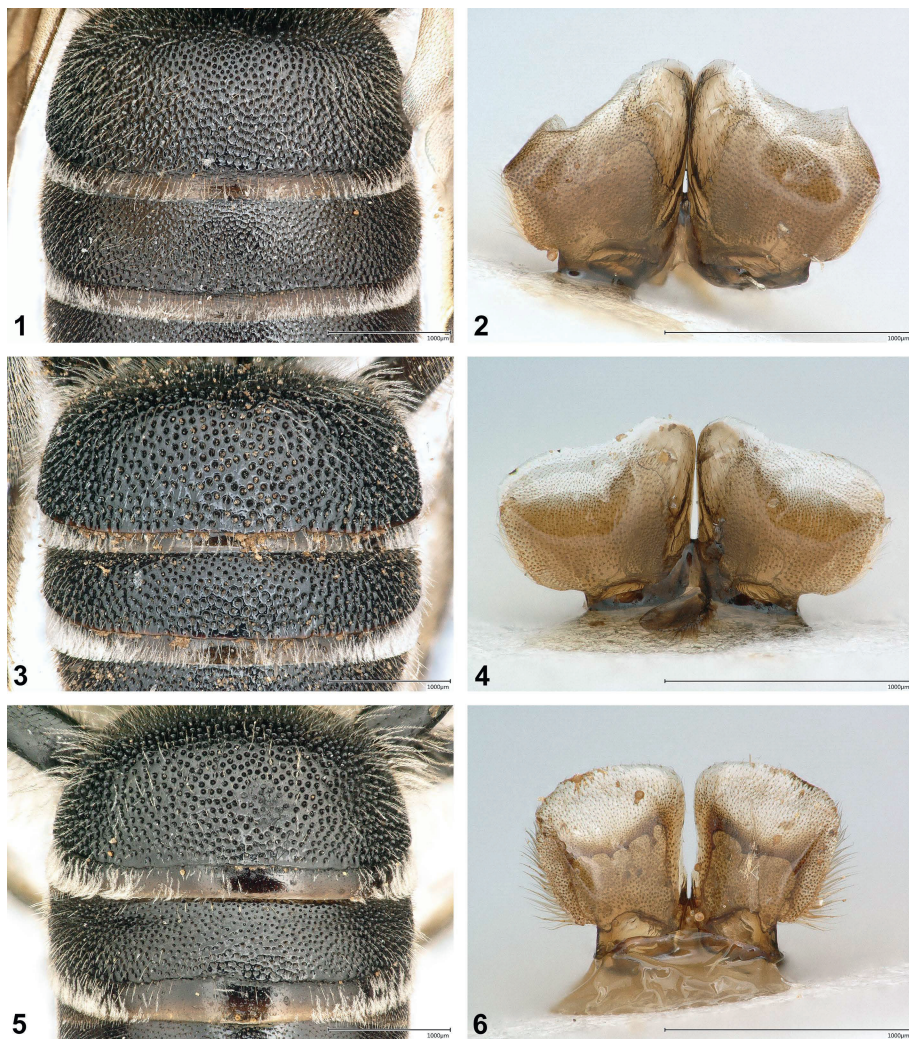
Zusammenfassung

Das bislang unbekannte Männchen der seltenen Bienenart *Colletes jansmiti* KUHLMANN, 2018 wird beschrieben. Sie ist endemisch in Spanien und gehört zur Artengruppe um *C. albomaculatus*. Eine Bestimmungstabelle der Männchen aller fünf Arten der Verwandtschaftsgruppe wird vorgelegt.

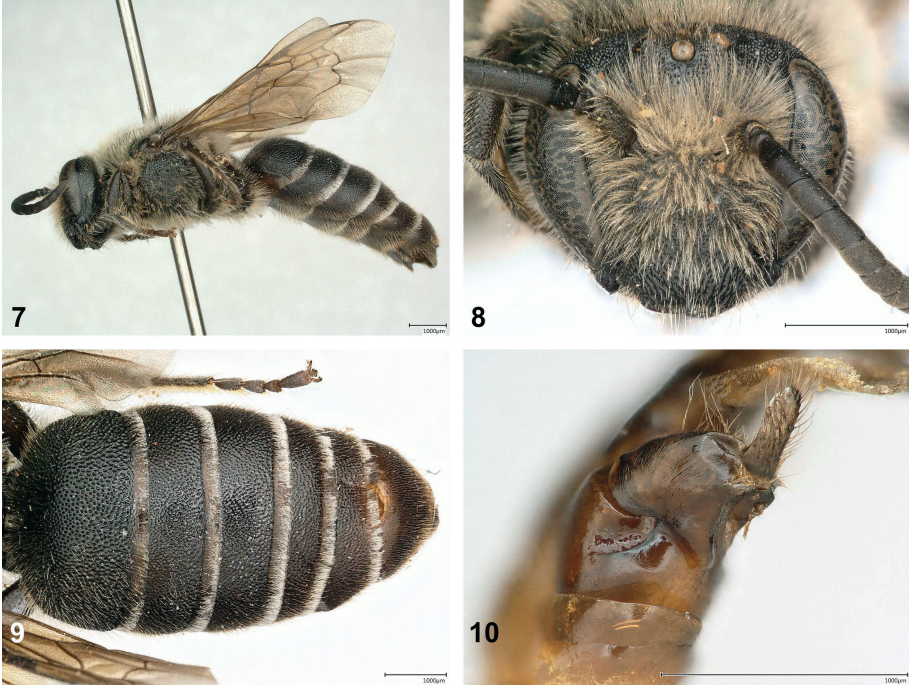
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Figs 1-2: *Colletes jansmiti* KUHLMANN, male; (1) metasomal terga T1-T2, (2) metasomal sternum S7. **Figs 3-4:** *C. punctatus* MOCSARY, male; (3) metasomal terga T1-T2, (4) metasomal sternum S7. **Figs 5-6:** *Colletes alfkeni* NOSKIEWICZ, male; (5) metasomal terga T1-T2, (6) metasomal sternum S7.



Figs 7-10: *Colletes jansmiti* KUHLMANN, male; (7) habitus, (8) head, (9) metasoma, (10) gonostylus in lateral view.

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