

New species and new records of *Coleophora* Hübner, 1822 from Spain (Lepidoptera: Coleophoridae)

Ignác Richter & Jan Šumpich

Abstract

A new species of Coleophoridae, *Coleophora inconspicua* Richter & Šumpich, sp. nov., is described from rocky habitat near Albarracín (Teruel) in Spain. *Coleophora afrobianthi* Tabell, 2023, until recently confused with *C. dianthi* Herrich-Schäffer, [1855], is recorded from Europe for the first time. Photographs of adults, as well as photos of their genitalia and abdominal segment, are provided for both species.

Keywords: Lepidoptera, Coleophoridae, *Coleophora afrobianthi*, *Coleophora inconspicua*, Spain.

Nuevas especies y nuevos registros de *Coleophora* Hübner, 1822 en España (Lepidoptera: Coleophoridae)

Resumen

Se describe una nueva especie de Coleophoridae, *Coleophora inconspicua* Richter & Šumpich, sp. nov., procedente de un hábitat rocoso cerca de Albarracín (Teruel), en España. *Coleophora afrobianthi* Tabell, 2023, hasta hace poco confundida con *C. dianthi* Herrich-Schäffer, [1855], se registra por primera vez en Europa. Se proporcionan fotografías de los adultos, así como fotos de sus genitales y segmento abdominal, de ambas especies.

Palabras clave: Lepidoptera, Coleophoridae, *Coleophora afrobianthi*, *Coleophora inconspicua*, España.

Introduction

Coleophoridae research has a long history on the Spanish mainland. In the 1980s, entomologists began to pay more attention to the fauna of Coleophoridae, among them Dr. Antonio Vives (Madrid, Spain) and Dr. Giorgio Baldizzone (Asti, Italy), who made the most important contributions. The first review of Spanish Coleophoridae was published by Agenjo (1965), followed by Vives Moreno (1987, 1994, 2014). In 1965, 126 species of Coleophoridae were known from Spain (Agenjo, 1965); by 1987, this number increased to 205 (Vives Moreno 1987), ultimately reaching 254 species in 2014 (Vives Moreno, 2014). Since then, the number of species known from Spain has continued to increase, with many new faunistic records having been made in the country (e. g. Laštůvka & Laštůvka, 2017, 2020; Gastón, 2024), and several new species having been described (Baldizzone 2019a, 2023; Tabell 2013, 2017). Considering that 280+ species of Coleophoridae are known from countries with comparable Lepidopteran diversity, such as France and Italy (Nel, 2001; Baldizzone. 2019b), one can expect more discoveries to be made in Spain in the future. In this paper, we report first records of two more *Coleophora* species, one of which is described as a new species to science: *C. inconspicua* sp. nov.

Material and methods

Study material collected by the second author was attracted via ultraviolet light (8W/12V tubes) installed in portable light traps.

Pinned specimens were photographed using a Canon 750D camera fitted with a Canon MP-E-65 mm lens (J. Šumpich). Preparations of genitalia (in glycerol) were photographed using a Bresser MikroCam II 12MP camera mounted to a BIM stereomicroscope (Ig. Richter), as well as a Canon EOS 200D DSLR camera mounted to an Olympus CX-31 stereomicroscope (J. Šumpich). For each photograph, sets of 20-40 images were taken at different focal planes and focused-stacked using Helicon Focus 6, with the final image edited in Adobe Photoshop CS5.

The holotype of *Coleophora inconspicua* Richter & Šumpich, sp. nov. was barcoded at the Canadian Centre for DNA Barcoding (CCDB, Biodiversity Institute of Ontario, University of Guelph). DNA was isolated from a dry specimen leg. Barcoding using conventional primers failed, but it is expected that barcoding will be repeated in the future using primers on older or degraded material to allow comparison of the genetic information of the new species with the existing DNA library.

This study is based on material from the following collections:

NMPC	National Museum of the Czech Republic, Prague, Czech Republic
IGR	Research collection of Ignác Richter, Malá Čausa, Slovakia

Results

Coleophora inconspicua Richter & Šumpich, sp. nov.

<https://zoobank.org/20BE2197-38AD-460C-BFBD-B4FD5296876A>

Material examined: Holotype ♂, Spain, Aragon Region, Albarracín env., 40°26'08"N, 01°25'34"W, 1100 m, 3-V-2003, Jan Šumpich leg. (gen. prep. 23484 Ig. Richter; photo 25039 J. Šumpich; DNA Barcode NMPC-LEP-1925 [failed] (NMPC).

Diagnosis: *Coleophora inconspicua* sp. nov. is a sister species of the recently described *Coleophora dikeratella* Tabell & Kullberg, 2023, from which it can be distinguished mainly by its monochromatic brown antennae (*C. dikeratella* has white ringed antennae) and the length of the costal stripe, which in *C. inconspicua* sp. n. spans from the base of the forewing to 1/3 of its length (as opposed to 2/3 of its length in *C. dikeratella*). The male genitalia of both species are similar in structure, but in *C. inconspicua* sp. nov. the ventral process of the sacculus is stouter, only slightly bent and with an even taper distally; the cucullus is slightly narrower, the tegumen slightly shorter and wider at the base, and the vesica has a cornutus. *Coleophora inconspicua* sp. n. may somewhat resemble *C. intermitens* Baldizzone & van der Wolf, 1999, which was described from southern Spain, especially in the structure of the male genitalia. However, in *C. intermitens*, the dorsal process is nearly at a right angle to the ventral process, whereas in *C. inconspicua* sp. nov., both processes protrude from the sacculus parallelly (Baldizzone & van der Wolf 1999).

Description: Adult (Figures 1-2). Wingspan 10.0 mm. Antenna brown, with an admixture of fine white scales, scape brown. Labial palpus white dorsally, brown ventrally, second segment 1.5x longer than the third. Head, thorax, and tegulae brown. Forewing lanceolate, brown, covered in dark brown and whitish scales. Costal streak thin, white, from base to 1/3 of the forewing. Cilia light grey-brown. Hindwing light grey, cilia concolorous.

Male genitalia (Figures 3-4): Spinose part of gnathos oval. Tegumen short, greatly expanding proximally. Cucullus narrow, elongate, club-shaped, slightly tapered basally. Sacculus broad with two distinct, strongly sclerotized processes: dorsal much wider than ventral, rectangular, with a small tooth in the centre of the distal edge, apically pointed; ventral process slightly longer than dorsal, slightly bent and evenly tapering, pointed distally. Phallus with two robust rods, the longer terminating in a conical point, the other hook-shaped apically. Vesica with cornutus in the shape of an arrowhead encased in a sclerotized oval.

Abdominal structures (Figure 5). No posterior lateral struts: transverse strut slightly curved, strongly sclerotized on proximal margin. Tergal sclerite 3x as long as it is wide, with 22-24 small conical spines (3rd tergite).

Female: unknown.

Biology: Host plant unknown. Adults were collected in rocky steppe habitat in early May, at altitudes of 1100 m (Figure 6).

Distribution: Spain.

Etymology: The species name is derived from the Latin *inconspicuus* (= inconspicuous), a reference to the small wingspan of this species in nature that has so far caused it to be overlooked.

Coleophora afrodiathi Tabell, 2023

Material examined: SPAIN, ALMERÍA, Sierra de Alhamilla, route Turrilas - Pico Colativi, 37°0'13.489"N, 2°17'14.371"W, 7 ♂, 1 ♀, 15-16-VI-2007, J. Šumpich & M. Dvořák leg. (gen. prep. 19510, 23468, 23474, 23475 Ig. Richter; photo 25012, 25013 J. Šumpich) (NMPC, IGR); Sierra Cabrera, Mojacar env., El Agua del Medio, 37°4'31.772"N, 1°51'18.873"W, 0-150 m, 3 ♂, 4-V-2008, J. Šumpich leg. (gen. prep. 23469, 23515 Ig. Richter; gen. prep. 25013 J. Šumpich) (NMPC).

Biology: unknown. Tabell et al. (2023) assume the development of caterpillars on *Dianthus* sp., which occurs at the type locality. The Spanish sites have the character of xerothermic steppe in the Sierra de Alhamilla (Almería) (Figure 14) and dry riverine habitat in the Sierra de Cabrera (Almería).

Distribution: Morocco, Spain (first records). **First report for Europe.**

Remark: This species was recently separated from the widely distributed *C. dianthi* by Tabell (Tabell et al. 2023) based on minor differences in the genitalia of both sexes and supported by DNA analysis. The distance to the nearest neighbour, *C. dianthi*, is 2.18% (p-dist).

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Conflict of interests

The authors declare that there is no known financial interests or personal relationships that could have influenced the work presented in this article.

References

- Agenjo, R. (1965). Catálogo ordenador de los lepidópteros de España. Décimo octava familia: Coleophoridae. *Graellsia*, 21 (unnumbered pages).
- Baldizzone, G. (2019a). Description of *Coleophora oreiosella* Baldizzone, sp. n. and new records on the distribution of some European Coleophoridae (Lepidoptera: Coleophoridae). *SHILAP Revista de lepidopterología*, 47(186), 269-277. <https://doi.org/10.57065/shilap.583>
- Baldizzone, G. (2019b). *Lepidoptera Coleophoridae*. Fauna d'Italia. LIII. Calderini.
- Baldizzone, G. (2023). *Coleophora cantabrica* Baldizzone, sp. nov. a new species from Spain. *Coleophora repentis* Klimesch, 1947 new species for the Iberian Peninsula. Contribution to the knowledge of Coleophoridae CLVI (Lepidoptera: Coleophoridae). *SHILAP Revista de lepidopterología*, 51(203), 561-568. <https://doi.org/10.57065/shilap.542>
- Baldizzone, G., & van der Wolf, H. W. (1999). New and little-known species of Coleophoridae from Spain (Lepidoptera: Coleophoridae). *SHILAP Revista de lepidopterología*, 27(105), 19-37.
- Gastón, J. (2024). Description of the female *Coleophora alfacarensis* Baldizzone, 1998 and other records of interest for Spain (Lepidoptera: Coleophoridae, Gelechiidae, Tortricidae). *SHILAP Revista de lepidopterología*, 52(206), 317-329. <https://doi.org/10.57065/shilap.909>
- Laštůvka, A., & Laštůvka, Z. (2017). New records of Lepidoptera from the Iberian Peninsula from 2016

- (Insecta: Lepidoptera). *SHILAP Revista de lepidopterología*, 45(178), 283-297. <https://doi.org/10.57065/shilap.1002>
- Laštůvka, A., & Laštůvka, Z. (2020). New faunistic records of moths from the Iberian Peninsula (Insecta: Lepidoptera). *SHILAP Revista de lepidopterología*, 48(189), 47-58. <https://doi.org/10.57065/shilap.420>
- Nel, J. (2001). Atlas des genitalia mâles et femelles des lépidoptères Coleophoridae de France. *Revue de l'Association Roussillonnaise d'Entomologie, Supplément 10*, 1-34.
- Tabell, J. (2013). *Coleophora alacanta* Tabell, sp. n., a new coleophorid moth from southern Spain, with notes on the biology of *C. kahaourella* Toll, 1957 (Lepidoptera: Coleophoridae). *SHILAP Revista de lepidopterología*, 41(164), 479-488.
- Tabell, J. (2017). Four new *Coleophora* Hübner, 1822 species from the Iberian Peninsula (Lepidoptera: Coleophoridae). *SHILAP Revista de lepidopterología*, 45(179), 385-402. <https://doi.org/10.57065/shilap.929>
- Tabell, J., Kullberg, J., Mutanen, M., Tokár, Z., & Sihvonen, P. (2023). New and little known *Coleophora* Hübner, 1822 species from Morocco. Part I. (Lepidoptera, Coleophoridae). *Zootaxa*, 5374(2), 151-195. <https://doi.org/10.11646/zootaxa.5374.2.1> PMID:38220865
- Vives Moreno, A. (1987). *La familia Coleophoridae Hübner, [1825] en la Península Ibérica (Insecta: Lepidoptera)* (Publicación N° 75/87) [Tesis Doctoral, Universidad Complutense de Madrid]. Editorial de la Universidad Complutense. Servicio de Reprografía.
- Vives Moreno, A. (1994). *Catálogo sistemático y sinonímico de los Lepidópteros de la Península Ibérica y Baleares (Insecta Lepidoptera). (segunda Parte)*. Ministerio de Agricultura, Pesca y Alimentación.
- Vives Moreno, A. (2014). *Catálogo sistemático y sinonímico de los Lepidoptera de la Península Ibérica, de Ceuta, de Melilla y de las Islas Azores, Baleares, Canarias, Madeira y Salvajes (Insecta: Lepidoptera)*. Improitalia.

Ignác Richter
Malá Čausa, 289
SK-97101 Malá Čausa
ESLOVAQUIA / SLOVAKIA
E-mail: ignac.richter@gmail.com
<https://orcid.org/0000-0001-8122-8709>

*Jan Šumpich
National Museum
Department of Entomology
Cirkusová, 1740
CZ-193 00 Praha 9 - Horní Počernice
REPÚBLICA CHECA / CZECH REPUBLIC
E-mail: jansumpich@seznam.cz
<https://orcid.org/0000-0002-0262-2941>

*Autor para la correspondencia / *Corresponding author*

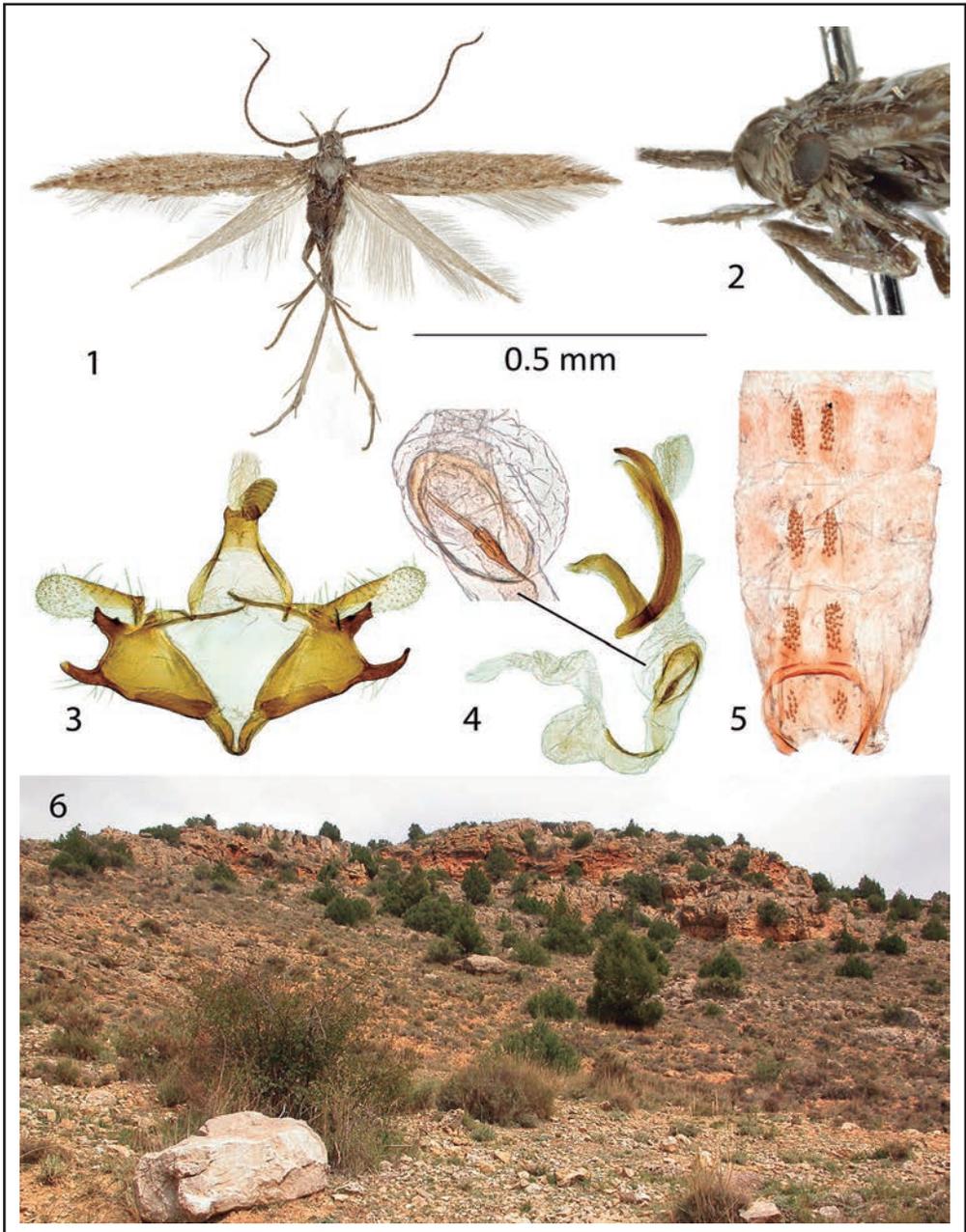
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Figures 1-6. *Coleophora inconspicua* Richter & Šumpich, sp. nov., Spain. **1-2.** Holotype. **1.** Adult. **2.** Head. **3.** Genitalia (gen. prep. 23484 Ig. Richter). **4.** Phallus (gen. prep. 23484 Ig. Richter). **5.** Abdomen (tergites 1-4). **6.** Natural amphitheatre near Albarracín (Teruel) type locality in 2005 year.



Figures 7-13. *Coleophora afrodiathi* Tabell, 2023, Spain. **7.** Male. **8.** Female. **9.** Male genitalia (gen. prep. 19510 Ig. Richter). **10.** Phallus (gen. prep. 19510 Ig. Richter). **11.** Male abdomen (tergites 1-6) (gen. prep. 19510 Ig. Richter). **12.** Female genitalia (gen. prep. 25013 J. Šumpich). **13.** Detail of signum (gen. prep. 25013 J. Šumpich). **14.** Steppe near Turrilas, Sierra de Alhamilla (Almería), habitat of *C. afrodiathi*, 2007.

