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On the distribution of *Calamobius filum* (Rossi, 1790) (Cerambycidae: Lamiinae) in Bulgaria

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Abstract. The species *Calamobius filum* (Rossi, 1790) is reported from a number of higher altitude habitats in Southwestern Bulgaria, including the subalpine zone. Adult beetles were collected from various grasses, including *Dactylis glomerata* L., *Alopecurus pratensis* L., *Bromus inermis* Leyss., *Deschampsia caespitosa* (L.) P. Beauv. and *Calamagrostis epigejos* (L.) Roth.

Key words: *Calamobius filum*, mountain habitats, Bulgaria

Introduction

The distribution range of the longhorn beetle species *Calamobius filum* (Rossi, 1790) (Cerambycidae: Lamiinae) includes Europe, North Africa and West Asia (Danilevsky 2020). According to Migliaccio *et al.* (2007), in Bulgaria, the species has a local distribution in the altitudinal range from 0 to 300 m a.s.l. The only record of the species from the high mountain zone – Todorini Kukli Peak (1785 m) in the Western Stara Planina Mountains (Nedelkov 1905) is regarded as doubtful by Georgiev & Hubenov (2006) and Migliaccio *et al.* (2007) because of the high altitude of the locality. Recently, the species was reported by us from a mountain habitat in Sakar Mountain, at an altitude of about 650 m a.s.l. (Gradinarov & Petrova 2025). In the present work, we report a number of new localities of the species from altitudes above 500 m a.s.l., mainly from mountainous areas.

Materials and Methods

The material for the present study was collected mainly by the authors in the period from 2016 to 2023 in SW Bulgaria. Materials collected during student fieldwork practices of Sofia University in the Lozen Mountains in the period 2015-2018 were also included. The pictures of the habitats and those of the beetle in Fig. 1 were taken with a Canon PowerShot SX420 IS digital camera. The pictures in Fig. 2 were taken with a Canon EOS R50 digital camera with a Laowa 90mm f/2.8 2x Ultra Macro APO lens mounted on a WeMacro rail (Wemacro, Shanghai, China). The specimens used in the study are preserved in the Zoological Collection of Sofia University, Faculty of Biology (BFUS), and the label data are digitised for the collection database.

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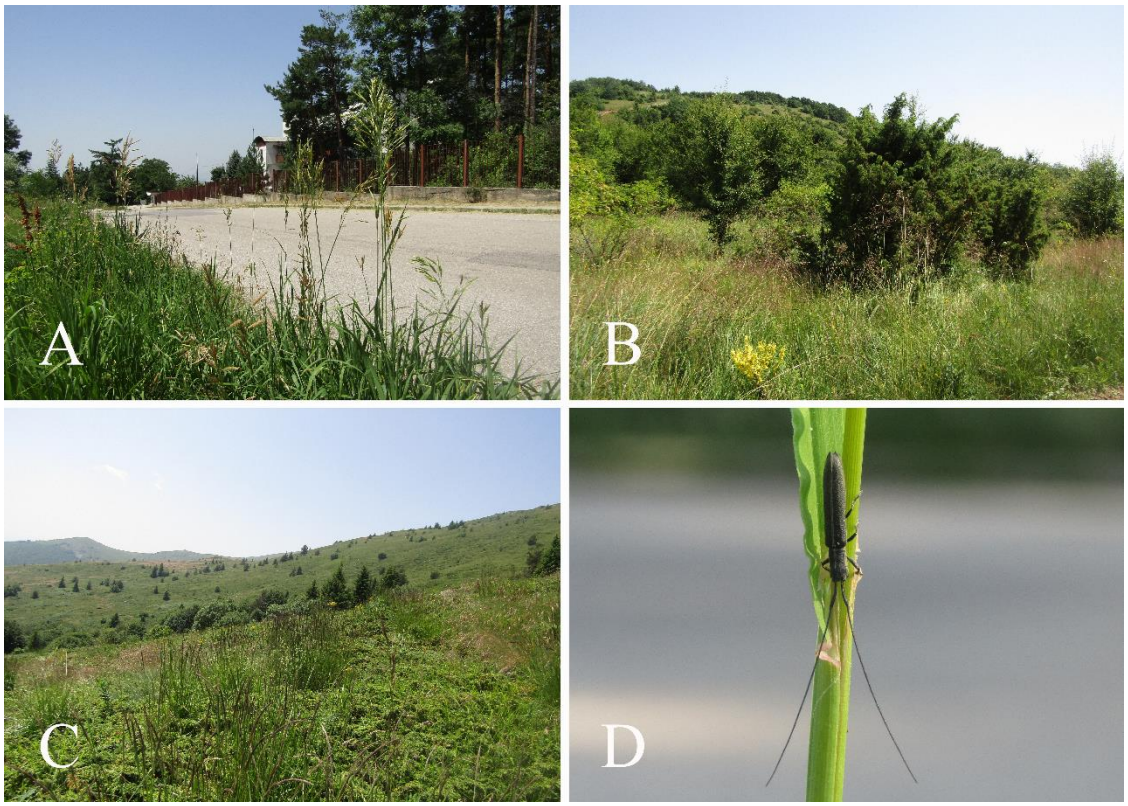

Fig. 1. Habitats and habitus of *Calamobius filum* in Lozenska Planina Mts (A, B, D) and Vitosha Mts (C). A – roadside meadow near Lozen Village, 13.vii.2023; B – mountain meadows under Polovrak Peak, 13.vii.2023; C – subalpine meadows with *Calamagrostis epigejos* under Golyam Kupen Peak, 14.vii.2023; D – *C. filum* on a grass stalk near Lozen Village, 04.vii.2023.

Results and Discussion

***Calamobius filum* (Rossi, 1790)** (Figs 1D, 2A, B)

Material examined:

Ihtimanska Sredna Gora Mts: Lozenska pl. [= Lozenska Planina Mts], 17.vi.[20]15, 1 ♂ [unspecified collector] (BFUS-CER000802); Lozenska Planina Mts, 14.vi.2017, 1 ♀, Chankova leg. (BFUS-CER000803); Lozenska Planina Mts, 11.vi.2018, 1 ♂, D. Petrov leg. (BFUS-CER000804); the same data, 1 ♀, S. Petrova leg. (BFUS-CER000805); the same data, 1 ♀, A. Marinov leg. (BFUS-CER000806); Lozen vill. Env., 11.vi.2018, 3 ♂♂ [unspecified collectors] (BFUS-CER000807 – BFUS-CER000809); Lozenska Planina Mts, 18.vi.2018, 1 ♂, Atanasova leg. (BFUS-CER000810); the same data, 1 ♀, Ivanova leg. (BFUS-CER000811); Lozenska Planina Mts, near Lozen Vill., 42°35.810′N 23°30.230′E, 737 m a.s.l., roadside verges, 04.vii.2023, 1 ♀, on grasses [*Dactylis glomerata* L.], D. Gradinarov leg. (BFUS-CER000812); Lozenska Plnina Mts, SE of Lozen Vill., near the Bulgarian Red Cross Training Center, 42°35.720′N 23°30.420′E, 760 m a.s.l., swamp meadow (Fig. 1A), 04.vii.2023, 1 ♂, 1 ♀, on grasses [including *D. glomerata*], D. Gradinarov leg. (BFUS-CER000813, BFUS-CER000814); the same locality, 13.vii.2023, 1 ♂, 2 ♀♀, on grasses [including *Alopecurus pratensis* L. and *Bromus inermis* Leyss.], D. Gradinarov leg. (BFUS-CER000815 – BFUS-CER000817); Lozenska Planina Mts, SE of Lozen Vill., 42°34.771′N 23°30.557′E, 1065 m a.s.l., meadows, near a swamp, 13.vii.2023, 1 ♂, on grasses [*A. pratensis*], D. Gradinarov leg. (BFUS-CER000818); Lozenska Planina Mts, under Polovrak Peak, 42°34.752′N 23°31.069′E, 1096 m a.s.l., dirt road, meadows (Fig. 1B), 13.vii.2023, 1 ♂, 1 ♀ [copulating], on grasses [*Deschampsia caespitosa* (L.) P. Beauv.], D. Gradinarov leg. (BFUS-CER000819,

BFUS-CER000820); Sredna Gora Mts, NW Gorna Malina Vill., near Makotsevska Reka Riv., 42°42.190′N 23°41.787′E, 580 m a.s.l., riverside meadows, 20.vi.2021, 1 ♂, Y. Petrova leg. (BFUS-CER000823).

Vitosha Mts: Vitosha Mts, NW of Zheleznitsa Vill., under Golyam Kupen Peak, 42°32.815′N 23°19.373′E, 1751 m a.s.l., wet subalpine meadow [the sources of Vedena River] (Fig. 1C), 14.vii.2023, 1 ♂, on grasses [*Calamagrostis epigejos* (L.) Roth], D. Gradinarov leg. (BFUS-CER000821).

Sofia Valley: Sofia City, Lyulin residential area [approx. 42°43.200′N, 23°15.200′E, 580 m a.s.l.], 01.vii.2016, 1 ♀, Y. Petrova leg. (BFUS-CER000822).

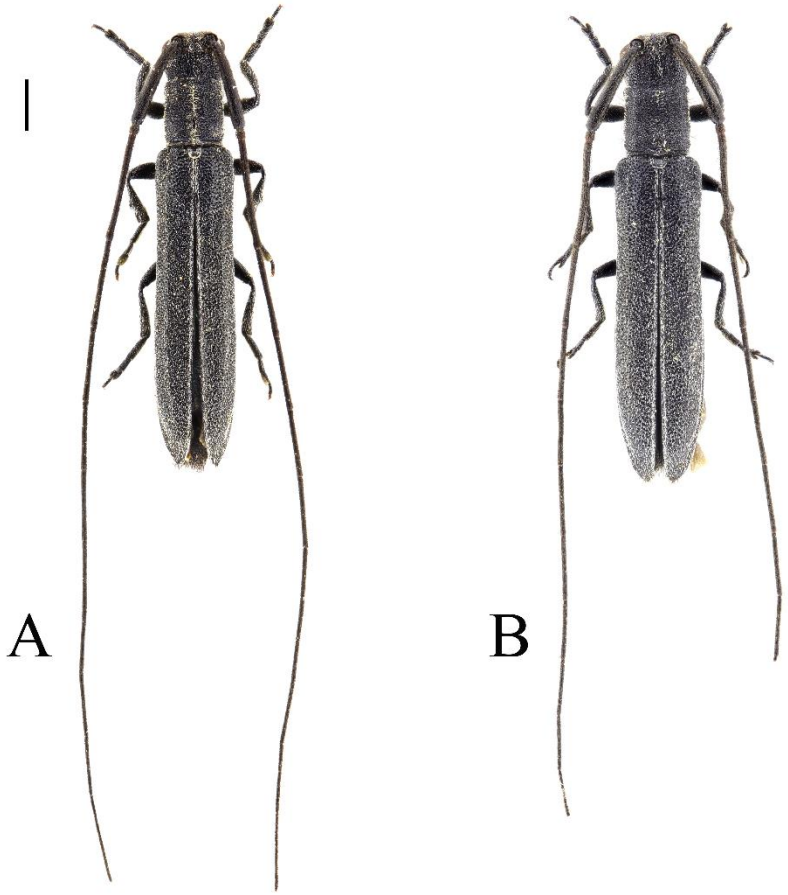

Fig. 2. *Calamobius filum* from high altitude habitats in Bulgaria. A – male, under Golyam Kupen Peak, Vitosha Mts, 14.vii.2023 (BFUS-CER000821); B – female, under Polovrak Peak, Lozenska Planina Mts, 13.vii.2023 (BFUS-CER000820). Scale bar: 1 mm.

Larvae of *C. filum* develop in the stems of various grasses of the Poaceae family (Paulus 1976). The species *Dactylis glomerata* and *Calamagrostis epigejos*, from which we collected the beetles in the present study, are among the commonly known host plants of the species (Paulus 1976, Dubbert *et al.* 1998). Other grass species we have observed the beetles on are *Alopecurus pratensis*, *Bromus inermis* and *Deschampsia caespitosa*.

Since the mid-20th century, the species has been observed expanding its range in Europe to the northwest and to higher altitudes (e.g. Sláma 1998, Dongres & Cihlář 2010, Zamoroka & Mateleshko 2016, Sedláček *et al.* 2020). Possible explanations for this expansion include changes in meadow and pasture management (Slama 1998), as well as climate change (Dongres & Cihlář 2010, Zamoroka & Mateleshko 2016). In Bulgaria, however, the species appears to be naturally distributed in suitable habitats (tall grass

meadows, often near water) at various altitudes, including high mountain habitats, from where it was reported as early as the beginning of the last century (Nedelkov 1905).

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References

Danilevsky, M. L. (2020) Taxa from West Europe, and North Africa to countries of former Soviet Union, and Mongolia. *In:* Danilevsky, M. L. (Ed.). *Catalogue of Palaearctic Coleoptera, vol. 6 (1), Chrysomeloidea I (Vesperidae, Disteniidae, Cerambycidae). Revised and updated edition.* Brill, Leiden/Boston, pp. 118-480.

Dongres, V. & Cihlář, V. (2010) První nálezy tesaříka *Calamobius filum* (Coleoptera: Cerambycidae). *Západočeské Entomologické Listy*, 1: 59–61.

Dubbert, M., Tscharntke, T. & Vidal, S. (1998) Stem-boring insects of fragmented *Calamagrostis* habitats: herbivore–parasitoid community structure and the unpredictability of grass shoot abundance. *Ecological Entomology*, 23: 271-280.

Georgiev, G. & Hubenov, Z. (2006) Vertical distribution and zoogeographical characteristics of Cerambycidae (Coleoptera) family in Bulgaria. *Acta Zoologica Bulgarica*, 58 (3): 315-343.

Gradinarov, D. & Petrova, Y. (2025) Longhorn beetles (Coleoptera: Cerambycidae) in Sakar Mountains, Bulgaria. *In:* Georgiev, D. & Yancheva, V. (Eds.). *Fauna of Sakar Mts, Part 2. ZooNotes*, Supplement 17, Plovdiv University Press, pp. 59-79.

Migliaccio, E., Georgiev, G. & Gashtarov, V. (2007) An annotated list of Bulgarian Cerambycids with special view on the rarest species and endemics (Coleoptera: Cerambycidae). *Lambillionea*, 107 (1), Supplément 1: 1-78.

Nedelkov, N. (1905) Prinos kam entomologichnata fauna na Balgaria [Contribution to the entomological fauna of Bulgaria]. *Periodichesko spisanie na Bulgarskoto knizhovno družestvo v Sofia*, 66: 404–439 (In Bulgarian).

Paulus, H. F. (1976) Zur Morphologie und Eidonomie von Jugendstadien des Getreide-Bockkäfer *Calamobius filum* (Coleoptera: Cerambycidae: Laminae). *Entomologica Germanica*, 2: 364-373.

Sedláček, O., Urban, S. & Sommer, D. (2020) Contribution to the history of expansion of longhorned beetle *Calamobius filum* (Rossi, 1790) (Coleoptera: Cerambycidae) in the Příbram region (central Bohemia). *Elateridarium,* 14: 194-200.

Sláma, M. E. F. (1998) *Tesaříkovití – Cerambycidae České republiky a Slovenské republiky (Brouci – Coleoptera)*. Milan Sláma private printing, Krhanice, 383 pp.

Zamoroka, A. M. & Mateleshko, O. Y. (2016) The first record of *Calamobius filum* (Coleoptera: Cerambycidae) in Western Ukraine with notes on its biology, ecology and distribution in Europe. *Naukovì zapiski Deržavnogo prirodoznavtčogo muzeû*, 32: 13-120.