

## Critical revision of the presence of *Dicerca furcata* (Coleoptera: Buprestidae) in Romania

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**Summary:** The first specimen of *Dicerca furcata* has been found and collected in a birch rare forest in the Harghita county area. This specimen is the first one found after the year 2000. A short description, and a comparison with the close looking species *D. alni* are given. The paper is supplemented with information on the biology, ecology and distribution.

**Rezumat:** Primul exemplar al speciei *Dicerca furcata* a fost descoperit și colectat într-o pădure rară de mesteacăn în județul Harghita. Acest exemplar este primul descoperit după anul 2000. O scurtă descriere a speciei, însoțită de o comparație cu specia asemănătoare (*D. alni*) sunt prezentate. De asemenea, sunt prezentate comentariile despre biologia, ecologia și distribuția speciei.

**Key words:** *Dicerca furcata*, certain presence, critical revision, Romania.

### Introduction

Short description: *Dicerca* (*Dicerca*) *furcata* (THUNBERG, 1787) is 14.5-20 mm long; body prolonged, bullet-shaped; elytra very caudate, with the apices not excavated. The dorsal and ventral surfaces, coarse punctured, copper-bronzed, more or less metallic shine, sometimes dark-bronzed, almost mat (fig. 1). The males can be recognised after the inner thorns on the middle tibiae.

Diagnostic and differences: It can be confused with *Dicerca* (*Dicerca*) *alni* (FISCHER VON WALDHEIM, 1824), which accidentally can be found in this habitat, but *D. alni* has the elytra less caudate, and their apices are notched.

Biology and ecology:

Larvae develop in the trunks or branches of the birches (*Betula pendula*). The trees should be heavily stressed. The larvae eat ducts under the bark and when getting mature, they migrate in the sapwood. The larvae life-span is about 3 years. The adults emerge in June-August, and they feed with birch leaves or the bark of the thin branches.

The females oviposit in the small cracks or crevices located on the trunk or thick branches bark. The presence of *Dicerca furcata* can be detected by finding the lens shaped emergency holes on the birch bark (HAAS 2016).

Distribution and related species:

*Dicerca furcata* is a Northern Palearctic element In the far east it is replaced by its sister species *Dicerca aino* LEWIS, 1893 (HAAS & KUBACH 2015, SERGEEVA

& STOLBOV 2019). Another sister species, *Dicerca caudata* LECONTE, 1860, is present in North America (NELSON 1975).

All three species are characterised by the long caudate elytra, with no apical notch, and an unusual preference for cold boreal forests.



Fig. 1. *Dicerca* (*Dicerca*) *furcata* (THUNBERG, 1787), female, Voşlobeni, 19.06.2021. Scale bar: 16 mm

## Examined material

1 ♀, Voşlobeni, Senetea meadow (Harghita county, 46.625527 / 25.586581, 771 m altitude, at 19.07.2021, Pál Mónika legit, A. Ruicănescu collection) (fig. 1).

Comparative material:

1 ♂, 1 ♀, Tarnița area, 07.1978 (Cluj cnt., Bechet leg., A. Ruicănescu coll) (fig. 2);

1 ♀, Călimani Mountains, Budac Valley (Bistrița-Năsăud county, Grațian Murariu leg., A. Ruicănescu coll.) (fig. 3).

## Methods

The specimens were prepared in dry method and they were stored in a private collection. Each specimen was photographed, using a Canon EOS 7D camera with a Canon EF 100mm f/2.8L Macro IS USM.

The geographical coordinates, for the specimen, were taken using a Garmin eTrex® portable GPS device.

The map illustrated in this article, was generated, using the application QGIS, version 3.20.

## Results and discussions

The specimen found and collected at Voşlobeni (Harghita county) is the first specimen collected after the year 2000 and the same time, it is the first specimen recorded with a precise geographical location, that proves its presence in Romania; the other 2 specimens having a doubtful localisation, verbally communicated after years.

After re-examination of all specimens in the

author's collection, we observed that the ♀ specimen, from Călimani Mts. (24.712715 E/47.071191 N, 642 m, Bistrița Năsăud county), actually belongs to the species *Dicerca (Dicerca) alni* (FISCHER VON WALDHEIM, 1824) (Fig. 3). Now I take the opportunity to correct the early mistake I made in the publication (RUICĂNESCU 2002), where I identified the specimen as *D. furcata*.

The most characteristic difference between *D. furcata* from *D. alni* consists of the elytra apices ended roundish in the first case and with a notch in the second case. The aedeagi are different too (fig. 4.).

Knowing the distribution of *D. furcata* (HAAS & KUBACH 2015), the discovery of this specimen is not a surprise because it is found at this latitude in all northern and central Europe (ALEXANDROVITCH *et al.* 1996, BACH 1854, BARŠEVSKIS & SAVENKOV 2001, BÍLÝ 1982, BÖCKELMANN *et al.* 2007, BRECHTEL & KOSTENBADER 2002, BURAKOWSKI *et al.* 1985, FREUDE 1975, FUCHS & BUSSLER 2008, 2014, GEISER 1979, IHSEN 1942, KLAUSNITZER *et al.* 2009, KWAST 2011, MÜHLE 1983, MUSKOVITS & HEGYESSY 2002, PROKHOROV 2010, SCHILSKY 1984, SCHLEGEL 1971, WITZGALL 1955, YANYTSKY 2013 and the webpages mentioned in the references).

The location in Voşlobeni, is on the southern part of its area in Europe, according to GBIF Secretariat (2011), only records from southern Hungary (MUSKOVITS & HEGYESSY 2002) are located more south (fig. 5).

This species, along with the sister species, have a northern distribution, being characterised to the cold climate forests, unusual for Buprestidae.

This unusual distribution leads us to the presumption, all 3 species are glacial relicts.



Fig. 2. *Dicerca (Dicerca) furcata*, Cluj, Tarnița (pers. com, unverified locality and date), 06.1978, C. Bechet leg. Scale bar: 15 mm



Fig. 3. *Dicerca (Dicerca) alni*, Călimani Mts., Budac Valley, 2.06.2002, G. Murariu legit. Scale bar: 17 mm





Fig. 4. Comparative presentation of the aedeagi of *Dicerca* (*Dicerca*) *furcata* (a) and *Dicerca* (*Dicerca*) *alni* (b).

## Conclusions

The specimen found and collected in Voşlobeni, proves the presence of the species in the Romanian's fauna.

After material re-examination, the specimen from Călimani Mts., is a smaller and darker specimen of *D. alni*, which was confused with *D. furcata*.

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Fig. 5. Distribution map of *Dicerca* (*Dicerca*) *furcata* (THUNB.) in central and northern Europe based on Dr. Kwast's database, from literature and web sources mentioned in the results and discussions. The blue square is the location of Voşlobeni (Romania).

## References

- ALEXANDROVITCH O. R., LOPATIN I. K., PISANENKO A. D., TSINKEVITCH V. A. & SNITKO S. M. (1996) A Catalogue of Coleoptera (Insecta) of Belarus. Fund of Fundamental Investigations of the Republic of Belarus, Minsk: 103 pp (in Russian).
- BACH M. (1854) Käferfauna für Nord- und Mitteldeutschland mit besonderer Rücksicht auf die preußischen Rheinlande. – Vol. 2., J. Hölscher, Coblenz: 493 pp (in German).
- BARŠEVSKIS A. & Savenkov N. (2001) Materials on Latvian Buprestidae (Coleoptera) fauna. *Latvijas Entomologs* 38: 4-12.
- BÍLÝ S. (1982) The Buprestidae of Fennoscandia and Denmark. *Fauna Entomologica Scandinavica* 10, 110 pp.
- BÖCKELMANN R., ZINNER F. & RICHTER K. (2007) Bemerkenswerte Käferfunde aus dem NSG Königsbrücker Heide (Sachsen) - ein Beitrag zur Fauna der Oberlausitz (Coleoptera, Carabidae, Cerambycidae, Bothrideridae, Buprestidae, Geotrupidae). – *Entomologische Nachrichten und Berichte* 51: 141-143 (in German).
- BRECHTEL F. & KOSTENBADER H. (2002) Die Pracht- und Hirschkäfer Baden-Württembergs. – Verlag Eugen Ulmer GmbH & Co., Stuttgart: 632 pp (in German).
- BURAKOWSKI B., MROCKOWSKI M. & Stefanska J. (1985) Katalog fauny Polski, Catalogus faunae Poloniae. Coleoptera Buprestoidea, Elateroidea i Cantharoidea. 23. – *Warszawa* 10(40), 358 pp (in Polish).
- FREUDE H. (1975) Koleopterologische Meldungen der Arbeitsgemeinschaft München. *Nachrichtenblatt der Bayerischen Entomologen* 24(3): 33-40 (in German).
- FUCHS H. & BUSSLER H. (2008) 25. Bericht der Arbeitsgemeinschaft Bayerischer Koleopterologen (Coleoptera). *Nachrichtenblatt der Bayerischen Entomologen* 57(1/2): 2-6 (in German).
- FUCHS H. & BUSSLER H. (2014) 31. Bericht der Arbeitsgemeinschaft Bayerischer Koleopterologen (Coleoptera). *Nachrichtenblatt der Bayerischen Entomologen* 63(1/2): 29-33 (in German).
- GEISER R. (1979) 7. Bericht der Arbeitsgemeinschaft Bayerischer Koleopterologen. *Nachrichtenblatt der Bayerischen Entomologen* 28(3): 33-45 (in German).
- HASS R. W. & KUBACH J. (2015) Zur taxonomischen Stellung von *Dicerca furcata* (Thunberg, 1787) und *Dicerca aino* Lewis, 1893 (Coleoptera: Buprestidae). *Entomologische Zeitschrift. Schwanlend*, 125(3): 171–174 (in German).
- HAAS R. W. (2016) Zur Lebensweise des Moorbirken-Prachtkäfers, *Dicerca furcata* (Thunberg, 1787) und des Berliner Prachtkäfers *D. berolinensis* (Herbst, 1779) (Coleoptera: Buprestidae). *Entomologische Zeitschrift*, 126(2): 1–10. (in German).
- IHSSEN G. (1942) Neue und interessante Insektenfunde aus dem Faunengebiet Südbayerns. *Mitteilungen der Münchner Entomologischen Gesellschaft* 32: 715-722 (in German).
- KLAUSNITZER B., Behne L., Franke R., Gebert J., Hoffmann W., Hornig U., Jäger O., Richter W., Sieber M. & Vogel J. (2009) Käferfauna (Coleoptera) der Oberlausitz. Teil 1. Beiträge zur Insektenfauna Sachsens. *Entomologische Nachrichten und Berichte* 7, 252 S. (in German).
- KWAST T. (2011) Gegenwärtige Vorkommen von *Dicerca furcata* und *Anthaxia salicis* in Sachsen (Coleoptera: Buprestidae). *Sächsische Entomologische Zeitschrift* 6: 57-62 (in German).
- MÜHLE H. (1983) Die Tierwelt Schwabens, 23. Teil: Die Prachtkäfer (Coleoptera, Buprestidae). – *Bericht der Naturforschenden Gesellschaft Augsburg* 38(178): 7-15 (in German).
- MUSKOVITS J. & Hegyessy G. (2002) Magyarországi díszbogarak (Coleoptera: Buprestidae). Jewel beetles of Hungary (Coleoptera: Buprestidae). Grafon Kiadó, Nagykovácsi, Hungary: 404 pp.
- PROKHOROV A. V. (2010) Annotirovannyj spisok zhukov-zlatok (Coleoptera: Buprestidae) lesostepnoj i stepnoj zony Ukrainy. *Ukrains'ka entomofaunistika* 1(4): 1-72 (in Ukrainian).
- RUICĂNESCU A. (2002) *Dicerca (s. str.) furcata* (THUNBERG, 1787) (Coleoptera: Buprestidae) - a certain presence in the Romanian fauna. *Entomologica Romanica* 7: 35–36.
- SCHILSKY F. J. (1894) 9. Beitrag zur deutschen Käferfauna. *Deutsche Entomologische Zeitschrift* 329-332 (in German).
- SCHLEGEL R. (1971) *Dicerca acuminata* Pall. (Coleoptera, Buprestidae) in der Oberlausitz. *Entomologische Nachrichten* 15(6): 67 (in German).
- SERGEJEVA E. V., & STOLBOV V. A. (2019) The fauna of Jewel Beetles (Coleoptera, Buprestidae) of Tyumen region. *Acta Biologica Sibirica* 5(3): 159–166 (in Russian).
- WITZGALL K. (1955) Beachtenswerte Koleopterenfunde aus Südbayern und den angrenzenden Kalkalpen. – *Nachrichtenblatt der Bayerischen Entomologen* 4(4): 33-35 (in German).
- YANYTSKY T. P. (2013). A checklist of the western ukrainian Buprestidae (Coleoptera). *Naukovi Zapiski Derzhavnogo Prirodoznavchogo Muzeju* 29: 173-180 (in Ukrainian).

\*\*\*Web pages: <https://baza.biomap.pl>, <https://www.zobodat.at/arten.php>, [www.barry.fotopage.ru](http://www.barry.fotopage.ru), [www.meloidae.com](http://www.meloidae.com)

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