

***Ropalodontus novorossicus* Reitter, 1901 (Coleoptera: Ciidae) a new minute tree-fungus beetle species for Belgium**

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Abstract

Two records from *Ropalodontus novorossicus* Reitter, 1901, a Ciidae species new for Belgium are reported. The specimens were collected in September 2018 in Gosselies and in September 2020 in Aalst. Species biology and details of the localities are discussed.

Keywords: Belgium, Ciidae, new records

Samenvatting

Twee waarnemingen van *Ropalodontus novorossicus* Reitter, 1901, een nieuwe soort Ciidae voor België worden gerapporteerd. De soort werd ingezameld in september 2018 in Gosselies en in september 2020 in Aalst. De biologie van deze soort en details van de vindplaatsen worden besproken.

Résumé

Deux observations de *Ropalodontus novorossicus* Reitter, 1901, une nouvelle espèce de Ciidae pour la Belgique sont signalées. Les spécimens ont été collectés en septembre 2018 à Gosselies et en septembre 2020 à Alost. La biologie de l'espèce et les caractéristiques des sites sont discutées.

Introduction

Recently two species of Ciidae: *Cis bilamellatus* Wood, 1884 and *Xylographus bostrichoides* (Dufour, 1843) were reported as new for Belgium by GIELEN (2018). As these discoveries resulted from a minimal collecting effort, it was clear that the knowledge of the Belgian Ciidae is uncomplete and probably several species are still unrecorded. The study of this family is surely also hindered by the absence of a complete and up-to-date species catalogue of this family for Belgium. Different species lists exist, but none are complete and collections need revision of the Belgian specimens (GIELEN, 2018). The latter author also suggested to invest in more inventories of this interesting family in Belgium. Hence during recent inventories of Coleoptera in fungi, a new species of Ciidae for Belgium, *Ropalodontus novorossicus*, was found on two localities in Belgium.

Material and methods

ACRONYMS:

RBINS: Royal Belgian Institute for Natural Sciences, Brussels Belgium

PCDI: Private Collection David Ignace, Courcelles.

All specimens were collected during entomological excursions while searching insects in fungi. Specimens were collected by hand and stored in 70 % ethanol. After identification using ROSE & ZAGATTI (2016) and <http://coletonet.de/>, several specimens were mounted and stored in the collection of RBINS (deposit number IG 34.253) and PCDI. The taxonomy of all mentioned Ciidae species is according to ROSE & ZAGATTI (2016).

Results

FIRST RECORDS OF *Ropalodontus novorossicus* IN BELGIUM

MATERIAL EXAMINED: BELGIUM: • 20 specimens of *Ropalodontus novorossicus* (M. Van Kerckvoorde leg. & det.) collected on 13.ix.2020 in Aalst, stadspark (Oost-Vlaanderen) in *Trametella trogii* (Bertol.) Domanski and deposited in RBINS collection under IG number 34.253; • 3 specimens of *Ropalodontus novorossicus* (D. Ignace leg. & det.) collected on 08.ix.2018 in Gosselies (Hainaut), mounted and deposited in PCDI (Fig. 1 A) and 10 specimens in ethanol from same date and location also in PCDI.

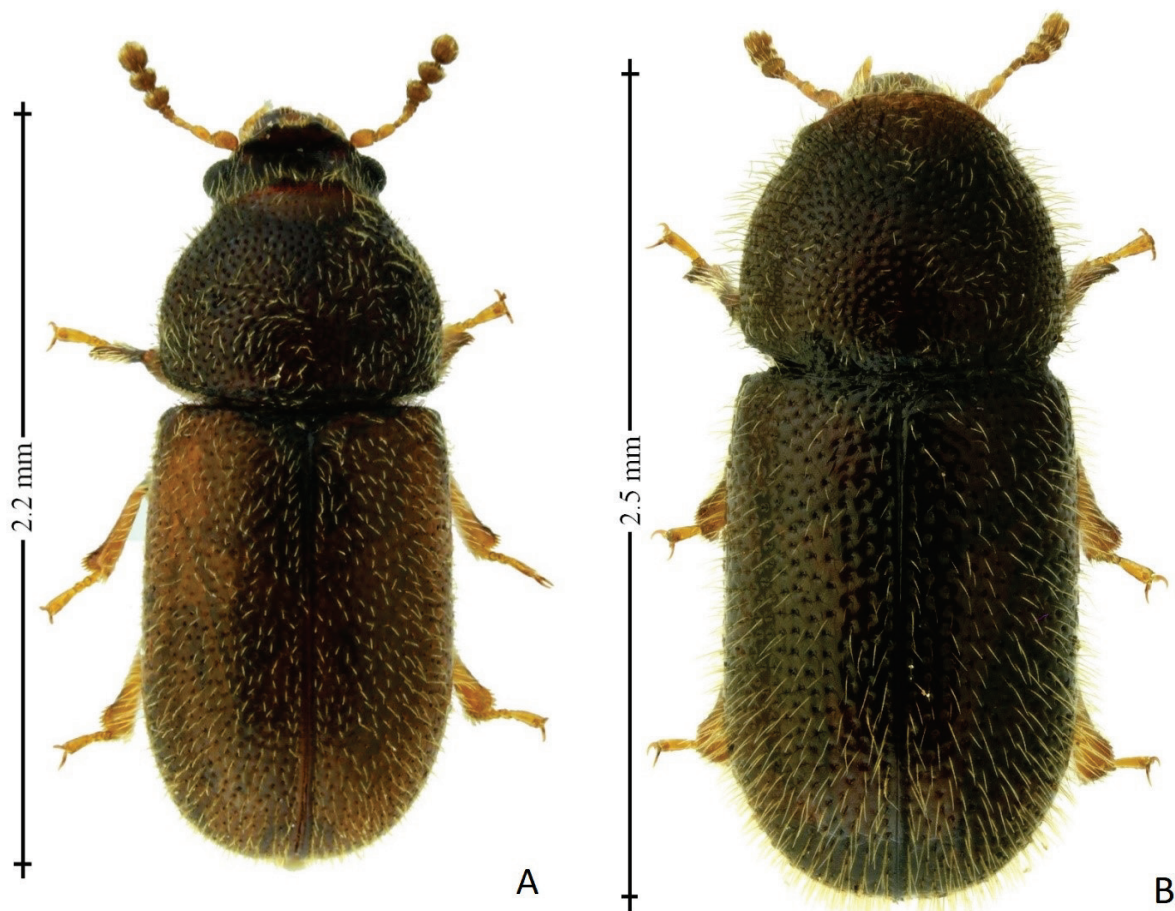


Fig. 1. A, *Ropalodontus novorossicus* collected in Gosselies on 08.IX.2018, leg. & det. D. Ignace. B, *Ropalodontus perforatus* collected in Courcelles (Hainaut) on 22.IX.2018, leg. & det. D. Ignace. © David Ignace.

RECORD IN AALST STADSPARK (UTM 1×1 KM SQUARE ES7342)

South-East of Aalst there is a large city park with a lot of old trees and dead wood. Next to an ash tree (*Fraxinus excelsior* L.) a fallen and decaying ash tree (Fig. 2) was colonised by *Trametella trogii* (Fig. 3). *Ropalodontus novorossicus* was the only Ciidae found in the fruit bodies of that fungus.



Fig. 2. Fallen tree with fungi where *Ropalodontus novorossicus* was found in Aalst, 13.ix.2020. © Marc Van Kerckvoorde.

RECORD IN GOSELIES (UTM 1×1 KM SQUARE FR1386)

In Gosselies *R. novorossicus* was found in a wood-decomposing polypore species, of which no identification is available, on a decaying branch on the ground on a path near a forest edge east of the village centre of Gosselies. After the polypore was collected, it was put in isolation in order to collect the beetles coming out the drying polypore.



Fig. 3. Ventral and dorsal view of *Trametella trogii* in which *Ropalodontus novorossicus* was found in Aalst.
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Discussion

HOW TO RECOGNISE *Ropalodontus novorossicus*?

Ciidae are small beetles and their identification is not always easy. The genus *Ropalodontus* has 10-segmented antennae and species are distinctive to other genera in being conspicuously pubescent and having strongly dilated protibiae. The antennae of the genus *Ropalodontus* have a three-segmented club. The third segment of the antennae is almost as long as the fourth segment distinguishing it from another conspicuously pubescent genus *Xylographus*, where the third segment is longer than the fourth segment. Tibiae of *Ropalodontus* species are widened at the front and have spines at the tip only (Fig. 4A). The other genus in Belgium with also prominent pubescence and antennae with 10 segments, *Xylographus* has tibiae with spines like a comb along the margin (Fig. 4B).

In Belgium two species occur within the genus *Ropalodontus*: *R. novorossicus* and *R. perforatus*. *Ropalodontus novorossicus* has a clypeus with 2 strong, blunt teeth, without yellow tufts of bristles whereas the clypeus of *R. perforatus* has 2 yellow hairy teeth. One of the clearest differentiating characteristics between *R. perforatus* and *R. novorossicus* is the difference in punctuation on elytra and pronotum. In *R. novorossicus* this punctuation is about the same whereas in *R. perforatus* the punctuation is wider and the points larger on the elytra (Fig. 1B). In Belgium *R. perforatus* is a rather common species.

DISTRIBUTION AND ECOLOGY OF *Ropalodontus novorossicus* IN EUROPE

Ropalodontus novorossicus is a species of which the distribution in Europe is insufficiently known. So far it was found in Austria, the Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Malta, Russia, Switzerland, Turkey and Ukraine (REIBNITZ, 1999; CALLOT & REIBNITZ, 2008; KROLIK, 2020; REIBNITZ *et al.*, 2013; KROLIK & RUTA, 2016; DROGVALENKO, 2020). CALLOT & REIBNITZ (2008) also mention the near Middle east as region

where this species lives. The species is so far still absent in the Netherlands (pers. com. O. Vorst). That makes France and Germany the only neighbouring countries of Belgium where *R. novorossicus* is found. In France the species is considered to be widespread but in low numbers (BOUGET *et al.*, 2019). It is found there in the south of the country in the regions of Occitanie (CALLOT & REIBNITZ, 2008), Provence-Alpes-Côte d'Azur, Auvergne-Rhône-Alpes and in the north in Centre-Val de Loire (<https://inpn.mnhn.fr>) and Grand Est (CALLOT & REIBNITZ, 2008). In Germany it is known from Süd Bayern, Württemberg, Baden, Hessen and Pfalz. Most German locations are situated in the South-west of the country along the Rhine (REIBNITZ, 1999). The currently known area of the species in Germany has not changed very much since REIBNITZ documented it in 1999 (<http://www.colkat.de/de/fhl/>; pers. comm. F. Köhler).

Many records of this beetle are from fruit bodies of *Trametella gallica* (Fries) Teixeira on *F. excelsior*, mostly branches on the ground or fallen trees (KROLIK & RUTA, 2016). In France the species is described from humid forests on ash (*F. excelsior*) and poplar (*Populus* sp.) and on branches of cherry tree (*Prunus* sp.) (CALLOT & REIBNITZ, 2008; BOUGET *et al.*, 2019). It was found in the following host fungi *Trametella trogii*, *T. gallica*, *Daedaleopsis confragosa*, in *Polyporus* sp., *Trametes* sp., *Antrodia* sp. and *Hexagonia* sp. (CALLOT & REIBNITZ, 2008; ROSE & ZAGATTI, 2016; BOUGET *et al.*, 2019). In Poland *R. novorossicus* was also found in fruit bodies on *Quercus* sp. (KROLIK & RUTA, 2016).

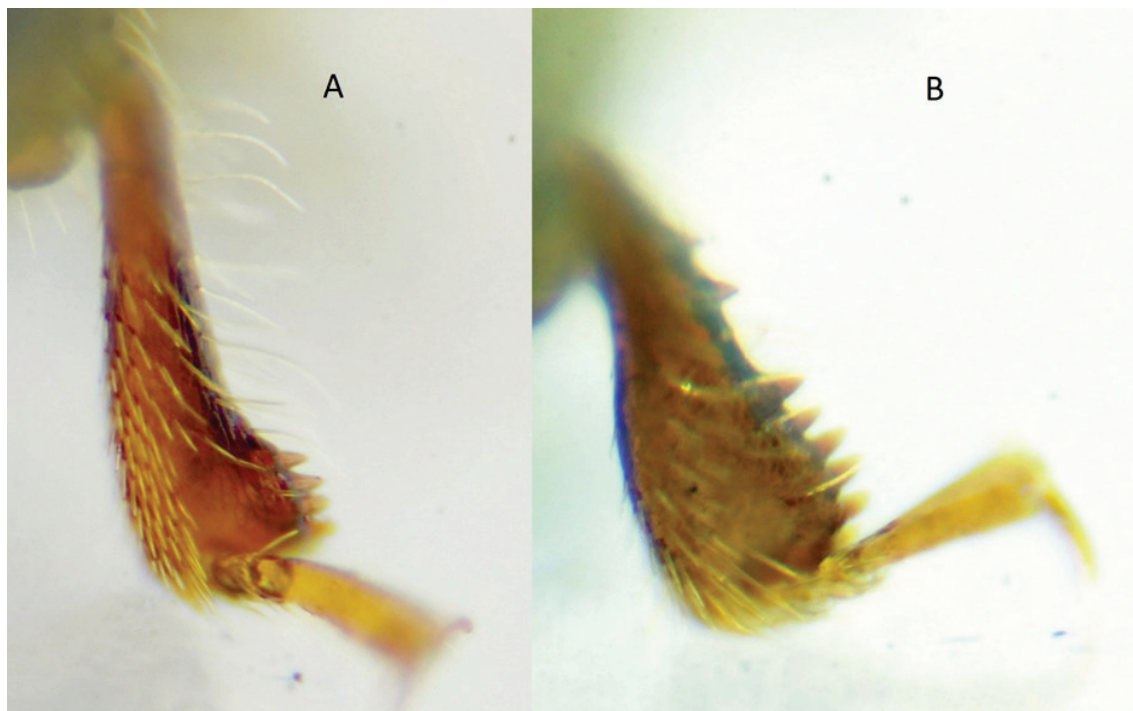


Fig. 4. A, protibia of *Ropalodontus perforatus* having spines at the tip only. Specimen from Courcelles, Hainaut, 24.IX.2017 (leg. & det. D. Ignace in PCDI). B, Protibia of *Xylographus bostrychoides* with spines along the margin like a comb. Specimen from Novella, Corsica (Haute Corse), 22.VIII.2019 (leg. P. Limbourg & det. D. Ignace in PCDI). © David Ignace.

In Belgium *Ropalodontus novorossicus* seems to have found its preferred habitat of humid ash and poplar stands that support its preferred host fungi. This may have been encouraged by a shift in European forestry with more attention for the natural processes (HEETMAN, 2016). In all likelihood *Ropalodontus novorossicus* is a recent arrival in Belgium as it is an East European-continental species (KÖHLER, 2014). The German known locations of the species seem to suggest that it could be expanding its area along river valleys. This is a pattern also observed

for *Xylographus bostrichoides* (HEETMAN, 2016) another ciid with an expanding area recently discovered in Belgium (GIELEN, 2018). Still it remains difficult to ascertain for how long *Ropalodontus novorossicus* has been present in Belgium because of the sparse and fragmented Belgian data of ciid beetles (GIELEN, 2018). The recent Belgian locations of the species are separated approximately 300 km of both the closest French and German known locations. This could mean that there are locations still unknown to be found in Germany and/or France and also in Belgium. At the same time it could be worthwhile to keep an eye out for the arrival of *Ropalodontus novorossicus* in the Netherlands. The recent interest in the Belgian Ciidae by amateur entomologists has had clear results as three species have been added to the Belgian representatives of the family in as many years. More discoveries are to be expected and will hopefully culminate in an updated species list of the family that can be used as a baseline for future research.

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References

- BOUGET C., BRUSTEL H., NOBLECOURT T. & ZAGATTI P., 2019. - *Les coléoptères saproxyliques de France. Catalogue écologique illustré. Collection Patrimoines naturels*. Publications scientifiques du Museum National d'histoire naturelle, Paris, 744 pp.
- CALLOT H. & REIBNITZ J., 2008. - Deux nouveaux Ciidae pour la faune de France: *Ropalodontus novorossicus* Reitter, 1902 et *Cis hansenii* Strand, 1965. Confirmation de la présence de *Cis fissicornis* Mellié, 1848 en Alsace (Coleoptera Ciidae). *L'Entomologiste*, 64(4): 229–231.
- DROGVALENKO A., 2020. - Check list Ciidae Ukraine. <http://www.ciidae.com/873/check-list-ciidae-ukraine> [accessed 10 November 2020].
- ENTOMOFAUNA GERMANICA, 2021. - Verzeichnis der Käfer Deutschlands. <http://www.colkat.de/de/fhl/> [accessed 01 July 2021].
- GIELEN K., 2018. - *Cis bilamellatus* (Wood, 1884) and *Xylographus bostrichoides* (Dufour, 1843), two new minute tree-fungus beetles for the Belgian fauna (Coleoptera: Ciidae). *Bulletin S.R.B.E./K.B.V.E.*, 154: 242–246.
- HEETMAN A.J.A., 2016. - Alweer een nieuwe kever voor de Nederlandse fauna: *Xylographus bostrichoides* (Coleoptera: Ciidae). *Entomologische Berichten*, 76: 209–212.
- KÖHLER F., 2014. - *Die klimabedingte Veränderung der TotholzKäferfauna (Coleoptera) des nördlichen Rheinlandes. Analysen zur Gesamtf fauna und am Beispiel von Wiederholungsuntersuchungen in ausgewählten Naturwandzellen*. Wald und Holz NWR, Münster, 198 pp.
- KROLIK R., 2020. - Family Ciidae Leach, 1819. In: IWAN D. & LÖBL I. (eds.). - *Catalogue of the Palaearctic Coleoptera. Vol. 5: Tenebrionoidea*. Brill, Leiden-Boston, 33–43.
- KROLIK R. & RUTA R., 2016. - *Ropalodontus novorossicus* Reitter, 1901 – a species of beetle new to the Polish fauna and new data on the occurrence of *Ropalodontus* Mellié, 1847 (Coleoptera: Ciidae) [In Polish]. *Acta entomologica silesiana*, 24(007 on-line): 1–8.
- LOMPE A., 2021. - Die Käfer Europas. <http://coleonet.de/> [accessed 01 July 2021].
- REIBNITZ J., 1999. - Verbreitung und Lebensräume der Baumschwammfresser Südwestdeutschlands (Coleoptera: Cisidae). *Mitteilungen des Entomologischen Vereins Stuttgart*, 34: 3–75.
- REIBNITZ J., GRAF R. & CORAY A., 2013. - Verzeichnis der Ciidae (Coleoptera) der Schweiz mit Angaben zur Nomenklatur und Ökologie. *Mitteilungen der Schweizerischen Entomologischen Gesellschaft*, 86: 63–88.
- ROSE O. & ZAGATTI P., 2016. - Les Ciidae de la faune de France continentale et de Corse: clé d'identification illustrée des espèces (Coleoptera Tenebrionoidea). *L'Entomologiste*, 72(5): 287–306.
- VISUALISATEUR CARTOGRAPHIQUE, 2021. - <https://inpn.mnhn.fr/viewer-carto/especes/306002> [accessed 01 July 2021].